

PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III

ROBERT R. DREISBACH
Dow Chemical Co.
Midland Mich.



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INTRODUCTION

Seldom do we find one with both the necessary skills and the enthusiasm to carry on major tabulations of any kind. Fortunately, we have such a combination in Mr. Dreisbach. He has not only tabulated physical chemical data, but he has done extensive collecting, naming, and tabulation for families and genera of insects, especially *Hymenoptera*.

This is his third volume to be entitled "Physical Properties of Chemical Compounds." The earlier volumes appeared as Numbers 15 and 22 of the *ADVANCES IN CHEMISTRY SERIES*. The present work includes data on the physical properties of 434 aliphatic compounds and 22 miscellaneous compounds and elements. Of these, 22 are tables of improved values for compounds included in volume two (*ADVANCES* No. 22). This brings the total number of substances treated up to 1421. This volume also includes a combined index to the tables in all three volumes.

The preparation of these tables has stimulated the determination of physical constants in The Dow Chemical Co. and has been responsible, in part, for the formation of the Manufacturing Chemists' Research Advisory Committee on the Properties of Chemical Compounds.

In addition to the tabulation of new and old data on pure compounds, parameters are given for interpolating and extrapolating determined data based on the systematic way in which the properties of compounds vary within a given homologous series.

H. S. NUTTING, Director
Technical Information Services
The Dow Chemical Co.

PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III

The physical properties covered in this book are listed below. Ranges covered are given in parentheses.

Parameters for various empirical equations are tabulated, which permit accurate interpolation and extrapolation of the various properties within the ranges designated.

Where any of the values below are missing, it is because they have never been determined or are patently inaccurate. Where the determined values do not conform to the formulas, they have been adjusted accordingly and labeled "calculated."

Purity

Freezing point

Vapor pressure (25° C. to crit. temp.)

Liquid density (25° C., approx. 3 atm.)

Vapor density (25° C., approx. 3 atm.)

Refractive index (25° to approx. 60° C.)

Rate of change of boiling point
with pressure (25° C., to crit. temp.)

Latent heat of fusion

Latent heat of evaporation (25° C., approx. 3 atm.)

Critical values

Compressibility (25° C., approx. 3 atm.)

Viscosity (approx. 0° to 100° C.)

Heat content (approx. 300° to 1000° K.)

Surface tension (20° to 40° C.)

Solubility (25° C.)

To get full value out of this reference work, the editors recommend that the user take the time to become familiar with the definitions that follow.

**Definition of Symbols and Parameters Used, with
Methods of Calculating the Parameters**

Mol. % Pur.: Mole % purity by weight.

F.P.: Freezing point, ° C.

F.P. 100%: Freezing point curve extrapolated to 100% purity.

B.P. 760 mm., 100 mm., etc.: Boiling points at these pressures, ° C.

P_{25} : Pressures at 25° C., in mm.

P_e : Pressure corresponding to temperature t_e in mm.

d^{20} , etc.: Density at 20° C., etc., g./ml.

a, b : Constants of Law of Rectilinear Diameters, $d_v + d_L = a + bt$
 d_v = density of the vapor, g./ml.; d_L = density of the liquid, g./ml.

n_D^{20} , etc.: Refractive index for the sodium line at 20° C., etc.

C : Constant of the Eykman equation, $(n_D^2 - 1)/(n_D + 0.4) \times 1/d = C$

MR (obs.): Molal refraction (obs.) = $(n_D^2 - 1)/(n_D^2 + 2) \times M/d = \text{MR at } 20^\circ \text{ C.}$ (M = mol. wt.)

MR (calc.): Molal refraction calculated from atomic refractive indices. See page 8.

$(n_D - d/2)$: Refractivity intercept equals refractive index minus one half the density, both at the same temperature, 20° C.

D : Dielectric constant run at a frequency of 10^5 (cycles/sec.) and at 25° C. unless otherwise noted. When reported as data of The Dow Chemical Co., error about ± 0.005 . Where Reference 5 is noted, it was obtained by squaring the refractive index at 20° C.

A, B, C : Constants of the Antoine vapor pressure equation for the liquid state, giving P (pressure) in mm. and t (temperature) in ° C. This is in the range between the temperatures as indicated. These temperatures in general are the boiling point at 30 mm. to a T_R of 0.75 to 0.80. See method of obtaining A, B, C on page 6.

Antoine equation: $\log P = A - B/(t + C)$

A^*, B^*, K, c, t_k, t_x : Constants of the saturated vapor density equation

$\log d_v(\text{g./ml.}) = A^* - B^*/(t + C)$ to the temperature t_k

$\log d_v(\text{g./ml.}) = A^* - B^*/(t + C) + K/(1.1 T_C - 273.2 - t) + c$

from temperature t_k to a reduced temperature, T_{R^*} , of 0.92

t_k = Temperature at which it is necessary to change from the simple vapor density equation to the corrected vapor equation in the higher ranges, ° C.

$t_k = t_x + K/c$ and $t_x = (1.1 T_C - 273.2)^\circ \text{ C.}$

A^* and B^* where the latent heat at the atmospheric boiling point is available.

$V_g - V_L = (31381.7 \times \Delta H_v \times dt/dp)/T$

Where the latent heat is not available use

$M(\Delta H_v)/T_B = 21.0$ and from this $\Delta H_v = (T_B \times 21.0)/M$

The value 21.0 (or any other value as 21.4, say) is obtained from the nearest related compound which has a latent heat available. Then proceed as in the case where latent heat is available for V_g value at B. P.

Since $d_v = 1/V_g$

$\log d_{v760} = A^* - B^*/(t_B + C)$ at 760 mm.

$\log d_{v30} = A^* - B^*/(t_{30} + C)$ at 30 mm.

Solve for A^*, B^* , since t and d_v at 760 mm. and 30 mm. and C are known.

A', B', C' : Constants of the Antoine vapor pressure equation below 30-mm. pressure, covering the temperature range as indicated. See method of obtaining the constants on page 6.

A^* , B^* : Constants of the vapor density equation below 30 mm. These two values are obtained by using the boiling point at 30 mm. and the pressure at 25° C. (obtained from the values A , B , C) and assuming that at 25° C. the relationship $PV/RT = 1$. Then we have V_g at 25° C. = $RT/MP = 62,361 \times (25 + 273.2)/MP$.

Then $dv = 1/Vg$. Inserting these values of vapor density, we then solve the two equations for the values of A^* and B^* as in the case of A and B .

Ac , Bc , Cc : Constants of the Antoine vapor pressure equation for the liquid state from $T_R = 0.75$ (or a higher T_R as indicated) to the critical temperature. See method of obtaining the constants on page 7.

Cryoscopic Constants, A° , B° : Cryoscopic constants for calculating mole % purity. See *J. Research Natl. Bur. Standards*, 35 (1945); RP 1676.

t_e° C.: Temperature at which a mole of the vapor occupies 22.414 liters and the vapor is in equilibrium with the liquid, in ° C.

$$t_e = \frac{B^*}{(A^* - \log dv_e)} - C$$

dt/dp : Rate of change of boiling point with pressure, given by equation $dt/dp = B/[2.3026 \times P \times (A - \log P)^2]^\circ$ C./mm. Also $dt/dp = (t + C)^2/2.3 PB$

ΔH_m : Latent heat of fusion in cal./g.

ΔH_v : Latent heat of vaporization at the temperature designed, cal./g.

$t_e(d, e)$: The latent heat of vaporization at the temperature t_e as given by the equation $\Delta H_v = d - et$, and indicates the accuracy of this equation at the temperature t_e .

$\Delta H_v/T_e$: Molal latent heat of vaporization at t_e divided by T_e . (Equal to the molal entropy of vaporization at t_e .)

$d, e; d', e'$: Parameters of the latent heat of vaporization equation, ΔH_v (cal./g.) = $d - et$. This is valid between the temperatures indicated. It has been found that the latent heat between the boiling point at 30 mm. and the boiling point at 760 mm. is almost a linear function of the temperature. As seen in most cases this equation holds almost to the temperature, t_e . Above and below this the latent heat is not linear with temperature except for short intervals.

d_c : Critical density, g./ml.

v_c : Critical volume, ml./g.

t_c : Critical temperature, ° C. See also page 7.

P_c mm.: Critical pressure in mm. Where this was not obtained from the literature it is calculated as follows (Thomson method, private communication from George W. Thomson): The critical temperature is inserted in the Antoine equation, using the A , B , and C values to calculate the critical pressure. This value is too low. This is then multiplied by 1.07 and is assumed to be the critical pressure. In the great majority of cases, this will agree with determined values to within $\pm 3\%$. For high boiling compounds this value must be decreased, since in most cases there is somewhat irregular drift with increasing temperature, so this should be continually lowered as the boiling point becomes increasingly higher.

PV/RT : Compressibility at the temperature designated.

$$z = PV/RT$$

where P = pressure in mm., V = volume in ml./mole, and $R = 62361$.

ΔH_c : Heat of combustion, kcal./mole, gas at constant pressure, 298.16° K. or 25° C.

ΔH_f : Heat of formation, kcal./mole, liquid at 298.16° K. or 25° C.

ΔF_f : Free energy of formation, kcal./mole, liquid at 298.16° K. or 25° C.

- η : Kinematic viscosity in centistokes, at temperature designated. The kinematic viscosity is given by the equation
 $\log \eta = A^v + B^v/T$
 between the temperatures indicated to an accuracy of 1% or better.
- B.P. ° C., 30 mm.; dt/dp ; ΔH_v ; PV/RT : These values at 30 mm. are calculated from the Antoine equation using A, B, and C. It has been found that at 30 mm. in almost all Cox Chart Families the ratio PV/RT is negligibly different from one. This, then, has been taken as one point (the other point being the B.P. at 760 mm.) from which to calculate A° and B° , always assuming the compressibility as 1.0000 at 30 mm.
- c_p : Specific heat at constant pressure at temperature designated, cal./g. ° K.
- c_v : Specific heat at constant volume at temperature designated, cal./g. ° K.
- f, g, h, f', g', h' : Parameters of the heat content equation for the liquid for the temperature ranges designated, ° K.
 c_p (liquid) = $f + gT + hT^2$
- m, n, o, m', n', o' : Parameters of the heat content equation for the vapor for the temperature ranges designated, ° K.
 c_p (vapor) = $m + nT + oT^2$
- γ : Surface tension in dynes/cm., at temperature designated.
- [P]: Parachor at the temperature designated:
 $M(\gamma)^{1/4}/(d_L - d_V) = [P]$
- [P] Sugd.: Parachor from atomic and structural values as given by Sugden. See table. The parachor value for oxygen as hydroxyl (alcohols) in these tables is taken as 15. Sugden gives the values of 20 for oxygen and 30 for oxygen in esters, which does not seem to work for alcohols and phenols.
- Exp. L.l.; Exp. L.u.: Explosion limits lower and upper range, % by wt.
- Dispersion: Specific dispersion, $10^4(n_F - n_C)/d$, ml./g. at 25° C.
 n_F, n_C = refractive index for F and C lines.
 d = density, g./ml.
- Flash and Fire Points, ° C.: Cleveland open cup (ASTM D 92-46) if not otherwise designated. Closed cup (ASTM D 56-36) will be designated as such.
- M Spec.: Mass Spectrograph.
- Ultra V.: Ultraviolet.
- X-Ray Dif.: X-Ray Diffraction.
- Infrared: Infrared Spectrograph.
- Solubility at 25° C., in solvents as designated.

Explanation of methods used for calculating the various parameters in the foregoing:

A, B, C: The A, B, and C constants, except where given by the API reports, are calculated by means of the Thomson method [*Chem. Revs.* 38, 1-39 (1946)] using the determined boiling points at three different pressures. The three formulas for this are as follows:

$$(y_3 - y_2)/(y_2 - y_1) \times (t_2 - t_1)/(t_3 - t_2) = 1 - (t_3 - t_1)/(t_3 + C)$$

$$B = (y_3 - y_1)/(t_3 - t_1) \times (t_1 + C)(t_3 + C)$$

$$\text{and } A = y_1 + B/(t_1 + C)$$

where y_1, y_2 , and y_3 are equal to $\log P_1, \log P_2$, and $\log P_3$ at temperatures t_1, t_2 , and t_3 . Unless the data for the three points are *very* accurate, the C value can be considerably in error. As a check on this method an empirical formula developed by Thomson (private communication from George W. Thomson) will give a much better value of C if the data are much in error. This formula is $C = 239 - 0.19t_B$. The A and B values can then be readily determined from the two points given, since they are much less critical.

A', B', C' (for pressures below 30 mm.): Applicable when molar heats of vaporization are available at 25° C. and the Antoine equation can be used to obtain the boiling point at 30 mm. Let A, B, C be the constants of the usual Antoine equation valid above 30 mm. and let A', B', C' be the constants of the Antoine equation sought for below 30 mm. These two equations are taken to give the same value of the pressure-temperatures slope at 30 mm.

$$\log 30 = A - B/(t_1 + C) = A' - B'/(t_1 + C')$$

$$B/(t_1 + C)^2 = B'/(t_1 + C')^2$$

Since PV/RT may be assumed to be 1.0000 at t_1 , the temperature corresponding to 30 mm., and is also 1.0000 at 25° C., the molar heat of vaporization at 25° C., $M\Delta H_{v_2}$, is given by

$$M\Delta H_{v_2} = 2.3026 RB' [(t_2 + 273.2)/(t_2 + C')]^2$$

where $t_2 = 25^\circ \text{C}$. To solve for A', B', C' let

$$g_2 = M\Delta H_{v_2}/2.3026 R(t_2 + 273.2)^2 = M\Delta H_{v_2}/406883 \text{ if } t_2 = 25^\circ \text{C}.$$

Since t_1, t_2 and all values on left-hand side of equations above are known, then B' and C' are readily obtained as follows:

$$[B'/(t_2 + C')^2][t_1 + C']^2/B' = g_2(t_1 + C')^2/B' = \text{say, } h^2$$

$$\text{Then } C' = (t_1 - ht_2)/(h - 1) \text{ and } B' = g_2(t_2 + C')^2$$

$$\text{Also } B' = B[(t_1 + C')/(t_1 + C)]^2$$

$$A' = \log 30 + B'/(t_1 + C') \text{ since } P_1 = 30 \text{ mm.}$$

These formulas were developed with the aid of George Thomson.

When heats of vaporization at 25° C. are not known:

In this case the C' value is estimated and A' and B' are calculated from known data. It was noticed that C' has a value approximately 18 higher than C when latent heats at 25° C. are known. By adding this increment to C we have C' , then B' from the relation for the first case

$$B' = B[(t_{30} + C')/(t_{30} + C)]^2$$

and then A' as in first case.

In the case of the alkenes and alkynes the A', B', C' and $A^* B^*$ were not calculated by the above method, since the data for these compounds are much less reliable than in the case of the alkanes.

Ac, Bc, Cc: This method was developed by George Thomson [*Chem. Revs.* 38, No. 1, 23 (1946)] and is similar to the one for obtaining A', B', C' . It is assumed that the parameters A, B, C of the Antoine equation are good to a T_R 0.75 or a higher reduced temperature, and this temperature corresponds to the 25° C. in the case of A', B', C' , and the critical point corresponds to the 30-mm. point.

$$B/(t_1 + C)^2 \times (t_o - t_1)/(y_o - y_1) = 1 + (t_o - t_1)/(t_1 + Cc)$$

$$\text{and } Bc = (y_o - y_1)/(t_o - t_1) \times (t_1 + Cc)(t_o + Cc);$$

$$Ac = B/(t_o + Cc) + y_o$$

where t_1 ° C. = T_R 0.75, t_o ° C. = critical temperature

$$y_1 = \log P \text{ at } t_1, y_c = \log P_c$$

The first equation is used to evaluate Cc , the second, Bc , and the third, Ac .

Association: The association in the vapor phase of organic acids seems to vary inversely as the temperature for some acids, at least for part of the range. In part of the range, and also apparently for some acids over the whole range, the association is fairly constant. The association is given in these sheets by the formula $M_p = p - rt$. For instance, for acetic acid this formula would be $M_p = 2.225 - 0.004085 t$ from 0° C. to 100° C. From 100° C. to a T_R of 0.92, $M_p = 1.85$. That is to say, the vapor density as calculated by the A^*, B^* formula would have to be multiplied by this correction factor to take care of the association. Further, if the reciprocal of the density is used as calculated to give volume, it would be necessary to divide by 1.85 to get the actual vapor volume.

t_c : Where the critical temperature has not been determined, it is calculated by Watson's equation:

$$T_e/T_c = 0.283(M/d_s)^{0.18}$$

where d_s = liquid density, g./ml. at the boiling point, and M = molecular weight. This is used for all hydrocarbons and halo-hydrocarbons.

f, g, h, m, n, o , etc.: For a short temperature range the equation $C_p = f + gT + hT^2$ reproduces almost exactly determined data. The parameters were set up on the IBM machines using eight determined values where that many or more were available.

The IBM machines were used to set up the Antoine constants from determined data. A preliminary C value was obtained from the equation $C = 239. - 0.19t_B$. A and B were then obtained and new C values either side of the first C used and new A and B values found. In each case above, the boiling points at the experimental pressures were calculated and compared with the determined boiling points.

Actually the value of C was generally obtained from $C = 239. - 0.19t_B$, since the determined values must be *very very* accurate to give better values of C .

Cox Chart Families

- | | |
|------------------|---------------------------------------|
| 1. Fluoroalkanes | 7. Cyanoalkanes (alkyl cyanides) |
| 2. Chloroalkanes | 8. Thiaalkanes |
| 3. Bromoalkanes | 9. Dithiaalkanes |
| 4. Iodoalkanes | 10. Aliphatic acids (organic acids) |
| 5. Haloalkenes | 11. Miscellaneous organic compounds |
| 6. Aminoalkanes | 12. Miscellaneous inorganic compounds |

Atomic Refractive Indices Used for Computing Molecular Refractive Index

All values are for the sodium line.

Carbon singly bound and alone	2.592	NO as nitrites	5.91
Carbon singly bound	2.418	NO as nitrosoamine	5.37
Carbon double bond	1.733	NO ₂ as alkyl nitrite	7.44
Carbon triple bond	2.398	NO ₂ as alkyl nitrate	7.59
Carbon conjugated	1.27	NO ₂ as nitroparaffin	6.72
Hydrogen	1.100	NO ₂ as nitro aromatic	7.30
Oxygen, hydroxyl	1.525	NO ₂ as nitramine	7.51
Oxygen, ethereal	1.643	Fluorine	0.95*
Oxygen, ketonic	2.211	Chlorine	5.967
Oxygen, as ester	1.64	Bromine	8.865
Sulfur as SH	7.69	Iodine	13.900
Sulfur as RSR	7.97		
Sulfur as RCNS	7.91		
Sulfur as RSSR	8.11		
Nitrogen			
As aliphatic primary amine	2.45		
As aromatic primary amine	3.21		
As aliphatic secondary amine	2.65		
As aromatic secondary amine	3.59		
As aliphatic tertiary amine	3.00		
As aromatic tertiary amine	4.36		
As hydroxylamine	2.48		
As hydrazine	2.47		
As aliphatic cyanide	3.05		
As aromatic cyanide	3.79		
As aliphatic oxime	3.93		
As primary amide	2.65		
As secondary amide	2.27		
As tertiary amide	2.71		

* This value for one fluorine atom attached to carbon. The value 1.1 is to be used for each fluorine atom in polyfluorides.

Atomic and Structural Constants for Calculation of Parachor

	<i>Sugden</i>		<i>Sugden</i>
CH ₂	39.0	Br	68.0
C	4.8	I	91.0
H	17.1	Single bond	—
O	20.0	Double bond	23.2
O (alcohol)	15.0	Triple bond	46.6
O ₂ (ester)	60.0	3-Membered ring	16.7
N	12.5	4-Membered ring	11.6
N (nitrile)	14.4	5-Membered ring	8.5
S	48.2	6-Membered ring	6.1
F	25.7	7-Membered ring	—
Cl	54.3	Aliphatic alcohol subtract	6.0

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TABLE I. FLUOROALKANES

No. 1

NAME		Fluoromethane			STRUCTURAL FORMULA		
					CH ₃ F		
Mole % Pur.	Ref. 3	Molecular Formula	CH ₃ F	Molecular Weight	34.034		
		Ref.			Ref.		
F.P. °C	-141.8	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°C
B.P. °C			BP	0.0238	5	h	
760 mm	-78.35	3	t _e	0.0325	5	f'	to
100	-108.68	5	t _e (d, e)	0.3392	5	g'	°C
30	-122.19	5	ΔHm cal/g			h'	
10	-132.50	5	ΔHv cal/g			m	to
1	-149.60	5	25°C			n	°K
Pressure mm 25°C			30 mm	130.74	5	o	
t _e	514.16	5	BP	119.27	5	m'	to
Density g/ml 20°C	0.5786 ^a	3	t _e	121.23	5	n'	°K
d _t 25	0.5570 ^a	3	t _e (d, e)	121.05	5	o'	
d ₄ 30			ΔHv/T _e	21.95	5	Surface tension dynes/cm. 20°C	
a	0.6963	5	d -130 to	98.76	5	30	
b	-0.02311	5	e -70 °C	0.2617	5	40	
Ref. Index n _D 20°C	1.1727 ^a	3	d' to °C			Parachor [P] 20°C	
25	1.1674 ^a	3	d _c g/ml			30	
30			v _c ml/g			40	
"C"	0.4124	4	t _c °C			Sugd. 81.8 5	
MR (Obs.)	6.5392	4	P _c mm			Exp. L.l. %/wt. u.	
MR (Calc.) (nD-d/2)	6.668	5	PV/RT 25°C			Dispersion	
	0.8834	4	30 mm	1.0000	5	Flash Point °C	
Dielectric			BP	0.9755	5	Fire Point	
A 125 to	7.09761	3	t _e	0.9829	5	M. Spec. Ultra V.	
B -60 °C	740.218	3	t _c			X-Ray Dif.	
C - °C	253.89	3	ΔHc kcal/m			Infrared	
A* -70 to	1.25564	5	ΔHf			Solubility in ⁺	
B* -90 °C	687.52	5	ΔFf			Acetone	
K			Viscosity centistokes			Carbon tet.	
c			η °C			Benzene	
t _k to °C						Ether	
t _x to °C						n-Heptane	
A' to °C			B ^v to °C			Ethanol	
B' to °C			A ^v to °C			Water	
C' to °C			(B ^v) to °C			Water in	
A ¹ * to °C			(A ^v) to °C				
B ¹ * to °C			c _p liq. °C				
A ^c to °C			c _p vap. °K				
B ^c to °C			c _v vap.				
C ^c to °C							
Cryos. A ^o consts. B ^o							
t _e °C	-85.14	5					

^aFor the liquid at saturation pressure ⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Fluoroethane			STRUCTURAL FORMULA		
					CH ₃ CH ₂ F		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂ H ₅ F	Molecular Weight	48.060		
		Ref.			Ref.	Ref.	
F.P. °C	-143.2	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C	0.0056	5	g	to °K
B.P. °C			BP	0.0291	5	h	to °K
760 mm	-37.70	3	t _e	0.0339	5	f'	to °K
100	-74.58	5	30 mm	0.4086	5	g'	to °K
30	-90.89	5	ΔHm cal/g			h'	to °K
10	-103.28	5	ΔHv cal/g			m	to °K
1	-123.75	5	25°C			n	to °K
Pressure mm 25°C	6734.	5	30 mm	112.05	5	o	to °K
t _e	626.19	5	BP	100.22	5	m'	to °K
Density g/ml 20°C	0.7182 ^a	3	t _e	101.20	5	n'	to °K
d ₄ ^t 25	0.7062 ^a	3	t _e (d, e)	101.15	5	o'	to °K
d ₄ ^t 30			ΔHv/T _e	21.03	5	Surface tension dynes/cm. 20°C	
a	0.7741	5	d	91.83	5	30	9.64
b	-0.001934	5	e	0.2224	5	40	8.13
Ref. Index n _D 20°C	1.2656 ^a	3	d'				6.74
25	1.2621 ^a	3	e'			Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.5030	4	v _c ml/g			30	
MR (Obs.)	11.1799	4	t _c °C			40	
MR (Calc.)	11.286	5	P _c mm			Sugd.	120 8
(nD-d/2)	0.9065	4	PV/RT 25°C			Exp. L.l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A -100 to	6.97853	3	BP	0.9689	5	Flash Point °C	
B -30 °C	854.211	3	t _e	0.9732	5	Fire Point	
C	246.16	3	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* -92 to	1.2656	3	ΔHc kcal/m			Solubility in +	
B* - °C	794.90	3	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k - to			η °C			Ether	
t _x - °C			B ^v to			n-Heptane	
A' - to			A ^v °C			Ethanol	
B' - °C			(B ^v) to			Water	
C'			(A ^v) °C			Water in	
A'* to °C			c _p liq. °K				
B'* to °C			c _p vap. °K				
Ac to			c _v vap.				
Bc t _c -							
Cc t _c -							
Cryos. A° const. B°							
t _e °C	-41.89	5					
^a For the liquid at saturation pressure				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 3

NAME		1-Fluoropropane			STRUCTURAL FORMULA				
					(CH ₃)(CH ₂) ₂ F				
Mole % Pur.	Ref. 3	Molecular Formula	C ₃ H ₇ F	Molecular Weight	62.086				
F.P. °C	-159.0	Ref.	3	dt/dP °C/mm		Ref.			
F.P. 100%				25°C	0.0156	5	f to		
B.P. °C				BP	0.0333	5	g °K		
760 mm	-2.50	3		t _e	0.0345	5	h		
100	-44.64	5		30 mm	0.4659	5	f' to		
30	-63.25	5		ΔHm cal/g			g' °K		
10	-77.37	5		ΔHv cal/g			h'		
1	-100.69	5		25°C	83.94	5	m to		
Pressure mm	2014.77	5		30 mm	100.88	5	n °K		
t _e 25°C	725.55	5		BP	89.41	5	o		
Density g/ml	0.7956 ^a	3		t _e	89.63	5	m' to		
20°C	0.7518 ^a	3		t _e (d, e)	89.63	5	n' °K		
d ₄ ^t 25				ΔHv/T _e	20.65	5	o'		
d ₄ ^t 30				d -70 to	88.93	5	Surface tension dynes/cm. 20°C		
a	0.9730	5		e 10 °C	0.1889	5	g	17.04	5
b	-0.008559	5		d' to				30	10.51
				e' °C				40	6.03
Ref. Index n _D				d _v g/ml			Parachor [P]		
20°C	1.3115 ^a	3		v _c ml/g	179.06	5	20°C		
25	1.3091 ^a	3		t _c °C			30		
30				P _c mm	47501.35	5	40		
"C"	0.5288	4					Sugd.		159.8
MR (Obs.)	15.1044	4		PV/RT			Exp. L. l. %/wt.		
MR (Calc.)	15.904	5		25°C	0.9377	5	u.		
(nD-d/2)	0.9137	4		30 mm	1.0000	5	Dispersion		
				BP	0.9666	5	Flash Point °C		
				t _e	0.9677	5	Fire Point		
				t _c			M. Spec.		
A* -70 to	6.9533	3		ΔHc kcal/m			Ultra V.		
B 30 °C	965.18	3		ΔHf			X-Ray Dif.		
C	239.5	3		ΔFf			Infrared		
A* -65 to	1.2563	5		Viscosity centistokes			Solubility in ⁺		
B* 15 °C	899.42	5		η			Acetone		
K							Carbon tet.		
c							Benzene		
t _k to							Ether		
t _x °C							n-Heptane		
A' to							Ethanol		
B' °C							Water		
C' °C							Water in		
A' * to				B ^v to					
B' * °C				A ^v °C					
				(B ^v) to					
Ac to				(A ^v) °C					
Bc t _c °C				c _p liq. °K					
Cc °C				c _p vap. °K					
Cryos. A°				c _v vap.					
consts. B°									
t _e °C	-3.67	5							
^a For the liquid at saturation pressure				⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

NAME		1-Fluorobutane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_2\text{F}$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_4\text{H}_9\text{F}$	Molecular Weight	76.112		
		Ref.			Ref.		
F.P. °C	-134	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C	0.0156	5	h	
760 mm	+32.5	3	BP	0.0372	5	f'	to
100	-14.6	5	t_e	0.0351	5	g'	°K
30	-35.4	5	30 mm	0.4659	5	h'	
10	-51.3	5	ΔH_m cal/g			m	to
1	-77.3	5				n	°K
Pressure mm 25°C	578.33	5	ΔH_v cal/g	83.61	5	o	
t_e	817.98	5	25°C	94.32	5	m'	to
Density g/ml 20°C	0.7789	3	30 mm	82.30	5	n'	°K
d_t 25	0.7727	3	BP	81.92	5	o'	
d_4 30			t_e (d, e)	81.93	5		
			$\Delta H_v/T_e$	20.26	5		
a	0.8041	5	d -40 to	88.05	5	Surface tension dynes/cm. 20°C	
b	-0.001160	5	e 40 °C	0.1770	5	y	16.95
Ref. Index n_D 20°C	1.3396	3	d' to			30	15.82
25	1.3376	3	e' °C			40	14.70
30			d _c g/ml			Parachor [P]	
"C"	0.5864	4	v _c ml/g			20°C	
MR (Obs.)	20.4608	4	t_c °C			30	
MR (Calc.)	20.522	5	P_c mm			40	
($n_D-d/2$)	0.9501	4	P_v/RT	0.9644	5	Sugd.	198.8
Dielectric			25°C	1.0000	5	Exp. L. l. %/wt. u.	
A -40 to	6.9581	3	30 mm	0.9574	5	Dispersion	
B 75 °C	1081.71	3	BP	0.9553	5	Flash Point °C	
C	232.8	3	t_e			Fire Point	
A* to	1.3162	5	t_c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* °C	1012.16	5	ΔH_c kcal/m			Solubility in +	
K			ΔH_f			Acetone	
c			ΔF_f			Carbon tet.	
t_k to			Viscosity centistokes			Benzene	
t_x °C			η °C			Ether	
A' to						n-Heptane	
B' °C			B ^v to			Ethanol	
C'			A ^v °C			Water	
A'* to			(B ^v) to			Water in	
B'* °C			(A ^v) °C				
Ac to			c_p liq. °K				
Bc t_c °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A° const. B°							
t_e °C	+34.60	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 5

NAME		1-Fluoropentane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₄ F		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ F	Molecular Weight	90.138		
		Ref.			Ref.		
F. P. °C	-120.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.1259	5	g	°K
B. P. °C			BP	0.0404	5	h	
760 mm	62.8	3	t _e	0.0353	5	f'	to
100	11.6	5	30 mm	0.5677	5	g'	°K
30	-11.1	5	ΔHm cal/g			h'	
10	-28.3	5	ΔHv cal/g			m	to
1	-56.8	5	25°C	82.99	5	n	°K
Pressure mm 25°C	184.18	5	30 mm	88.89	5	o	
t _e	899.65	5	BP	76.93	5	m'	to
Density g/ml 20°C	0.7907	3	t _e	76.08	5	n'	°K
d ₄ 25	0.7851	3	t _e (d, e)	76.07	5	o'	
d ₄ 30			ΔHv/T _e	20.10	5	Surface tension dynes/cm. 20°C	
a	0.8132	5	d -15 to	87.10	5	γ	18.86
b	-0.001086	5	e 75 °C	0.1620	5		30 17.78
Ref. Index			d'				40 16.72
n _D 20°C	1.3591	3	e'			Parachor [P]	
25	1.3571	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.6091	4	t _c °C			40	
MR (Obs.)	25.1026	4	P _c mm			Sugd.	237.8
MR (Calc.)	25.140	5	PV/RT			Exp. L. l. %/wt. u.	
(nD-d/2)	0.9637	4	25°C			Dispersion	
Dielectric			30 mm			Flash Point °C	
A -20 to	6.9857	3	BP			Fire Point	
B 100 °C	1190.03	3	t _e			M. Spec.	
C	227.1	3	t _c			Ultra V.	
A* to	1.3870	5	ΔHc kcal/m			X-Ray Dif.	
B* °C	1116.51	5	ΔHf			Infrared	
K			ΔFf			Solubility in ⁺	
c			Viscosity centistokes			Acetone	
t _k to			η °C			Carbon tet.	
t _x °C						Benzene	
A' to			B ^v to			Ether	
B' °C			A ^v °C			n-Heptane	
C'			(B ^v) to			Ethanol	
A'* to			(A ^v) °C			Water	
B'* °C			c _p liq. °K			Water in	
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
const. B°							
t _e °C	68.07	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Fluorohexane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₅ F		
Mole % Pur.	Ref.	Molecular Formula	C ₆ H ₁₃ F	Molecular Weight	104.164		
F.P. °C	-103.			dt/dP °C/mm		f	to
F.P. 100%				25°C	0.3516	g	°K
B.P. °C				BP	0.0431	h	
760 mm	91.5	3		t _e	0.0354	f'	to
100	36.7	5		30 mm	0.6098	g'	°K
30	12.4	5		ΔHm cal/g		h'	
10	-6.2	5		ΔHv cal/g		m	to
1	-36.8	5		25°C	83.03	n	°K
Pressure mm 25°C	57.82	5		30 mm	84.98	o	
t _e	976.82	5		BP	73.03		
Density g/ml 20°C	0.7995	3		t _e	71.84	m'	to
d _t 25	0.7942	3		t _e (d, e)	71.75	n'	°K
d ₄ 30				ΔHv/T _e	20.06	o'	
a	0.8207	5		d	86.84	Surface tension dynes/cm. 20°C	
b	-0.001046	5		d'	0.1510	30	20.35
Ref. Index n _D 20°C	1.3738	3		e		40	19.27
25	1.3718	3		e'			18.23
30				d _c g/ml		Parachor [P] 20°C	
"C"	0.6257	4		v _c ml/g		30	
MR (Obs.)	29.7394	4		t _c °C		40	
MR (Calc.)	29.758	5		P _c mm		Sugd.	276.8
(nD-d/2)	0.9740	4		PV/RT 25°C	0.9956	Exp. L. l. %/wt. u.	
Dielectric				30 mm	1.0000	Dispersion	
A	0 to 7.0305	3		BP	0.9481	Flash Point °C	
B	120 °C	3		t _e	0.9411	Fire Point °C	
C	221.6	3		t _c		M Spec. Ultra V. X-Ray Dif. Infrared	
A*	5 to 1.4680	5		ΔHc kcal/m		Solubility in +	
B*	115 °C	5		ΔHf		Acetone	
K	1222.05	5		ΔFf		Carbon tet.	
c				Viscosity centistokes °C		Benzene	
t _x				η		Ether	
t _x						n-Heptane	
A'						Ethanol	
B'				B ^v		Water	
C'				A ^v		Water in	
A*				(B ^v)			
B*				(A ^v)			
Ac				c _p liq. °K			
Bc				c _p vap. °K			
Cc				c _v vap.			
Crys. A° const. B°							
t _e °C	99.93	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 7

NAME		1-Fluoroheptane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_6\text{F}$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_7\text{H}_{15}\text{F}$	Molecular Weight	118.190		
		Ref.			Ref.	Ref.	
F. P. °C	-73.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C	0.9800	5	h	
760 mm	117.9	3	BP	0.0455	5	f'	to
100	59.9	5	t _e	0.0353	5	g'	°K
30	34.2	5	30 mm	0.6475	5	h'	
10	14.5	5	ΔHm cal/g			m	to
1	-18.1	5	ΔHv cal/g			n	°K
Pressure mm 25°C	18.40	5	25°C	83.07	5	o	
t _e	1046.85	5	30 mm	81.72	5	m'	to
Density g/ml 20°C	0.8062	3	BP	69.89	5	n'	°K
d ^t 25	0.8013	3	t _e	68.35	5	o'	
d ₄ 30			t _e (d, e)	68.27	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	20.07	5	γ	21.52 5
a	0.8258	5	d 40 to	86.55	5	30	20.49 5
b	-0.03975	5	e 140 °C	0.1413	5	40	19.49 5
Ref. Index n _D 20°C	1.3854	3	d' to			Parachor [P] 20°C	
25	1.3834	3	e' °C			30	
30			d'			40	
"C"	0.6387	4	e'			Sugd.	315.8 5
MR (Obs.)	34.3873	4	d _c g/ml			Exp. L. l. %/wt. u.	
MR (Calc.)	34.376	5	v _c ml/g			Dispersion	
(nD-d/2)	0.9823	4	t _c °C			Flash Point °C	
Dielectric			P _c mm			Fire Point	
A 20 to	7.0835	3	PV/RT			M. Spec. Ultra V. X-Ray Dif. Infrared	
B 150 °C	1405.79	3	25°C	1.0024	5	Solubility in ⁺	
C	216.6	3	30 mm	1.0000	5	Acetone	
A* 25 to	1.5541	5	BP	0.9447	5	Carbon tet.	
B* 135 °C	1325.66	5	t _e	0.9348	5	Benzene	
K			t _c			Ether	
t _k to			ΔHc kcal/m			n-Heptane	
t _x °C			ΔHf			Ethanol	
A' to			ΔFf			Water	
B' °C			Viscosity centistokes			Water in	
C' °C			η				
A'* to			°C				
B'* °C			B ^v to				
A _c to			A ^v °C				
B _c °C			(B ^v) to				
C _c t _c °C			(A ^v) °C				
Cryos. A* const. B*			c _p liq. °K				
t _e °C	129.35	5	c _p vap. °K				
			c _v vap.				
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Fluorooctane			STRUCTURAL FORMULA	
					$CH_3(CH_2)_7F$	
Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{17}F$	Molecular Weight 132.216			
F. P. °C	-64.	3				
F. P. 100%						
B. P. °C						
760 mm	142.3	3	dt/dP °C/mm		2.728	5
100	81.6	5	25°C		0.0475	5
30	54.5	5	BP		0.0352	5
10	33.8	5	t _e		0.6811	5
1	-0.6	5	30 mm			
			ΔHm cal/g			
Pressure mm 25°C			ΔHv cal/g			
t _e	5.92	5	25°C	83.11	5	
	1111.10	5	30 mm	78.94	5	
Density g/ml 20°C			BP	67.19	5	
25	0.8116	3	t _e	65.42	5	
d ₄ ^t	0.8068	3	t _e (d, e)	65.28	5	
			ΔHv/T _e	20.13	5	
"a"	0.8308	5	d 50 to	86.23	5	
"b"	-0.03958	5	e 165 °C	0.1338	5	
Ref. Index			d' °C			
n _D 20°C	1.3946	3	e' °C			
25	1.3926	3	d _c g/ml			
30			v _c ml/g			
"C"	0.6488	4	t _c °C			
MR (Obs.)	39.0207	4	P _c mm			
MR (Calc.)	38.994	5	PV/RT			
(nD-d/2)	0.9888	4	25°C	1.0054	5	
Dielectric			30 mm	1.0000	5	
A 40 to	7.1411	3	BP	0.9410	5	
B 175 °C	1509.34	3	t _e	0.9294	5	
C	212.0	3	t _c			
A* to	1.6417	5	ΔHc kcal/m			
B* °C	1426.61	5	ΔHf			
K			ΔFf			
c			Viscosity centistokes			
t _x to			η °C			
t _x °C			B ^v to			
A' to			A ^v °C			
B' °C			(B ^v) to			
C' °C			(A ^v) °C			
A ^{1*} to			c _p liq. °K			
B ^{1*} °C			c _p vap. °K			
Ac to			c _v vap.			
Bc t _c °C						
Cc °C						
Cryos. A ^{1*} const. B ^{1*}						
t _e °C	156.55	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

TABLE I. FLUOROALKANES

No. 9

NAME		1-Fluoronovane			STRUCTURAL FORMULA	
					CH ₃ (CH ₂) ₈ F	
Mole % Pur.	Ref. 3	Molecular Formula	C ₉ H ₁₉ F	Molecular Weight	146.242	
F. P. °C	-40.	Ref.	3	dt/dP °C/mm		Ref.
F. P. 100%				25°C	7.623	5
B. P. °C				BP	0.0493	5
760 mm	165.0		3	t _e	0.0350	5
100	101.9		5	30 mm	0.7115	5
30	73.6		5	ΔHm cal/g		
10	51.9		5	ΔHv cal/g		
1	15.9		5	25°C	83.17	5
Pressure mm 25°C	1.92		5	30 mm	76.51	5
t _e	1170.35		5	BP	64.89	5
Density g/ml 20°C	0.8159		3	t _e	62.87	5
d ₄ ^t 25	0.8113		3	t _e (d, e)	62.75	5
d ₄ ^t 30				ΔHv/T _e	20.20	5
a	0.8343		5	d	85.85	5
b	-0.03919		5	e	0.1270	5
Ref. Index n _D 20°C	1.4022		3	d'		
25	1.4002		3	e'		
30				d _c g/ml		
"C"	0.6571		4	v _c ml/g		
MR (Obs.)	43.6632		4	t _c °C		
MR (Calc.)	43.612		4	P _c mm		
(nD-d/2)	0.9942		4	PV/RT		
Dielectric				25°C	1.0058	5
A 60 to	7.1977		3	30 mm	1.0000	5
B 200 °C	1608.48		3	BP	0.9385	5
C	207.6		3	t _e	0.9244	5
A* 65 to	1.72610		5	t _c		
B* 190 °C	1523.63		5	ΔHc kcal/m		
K				ΔHf		
t _k to °C				ΔFf		
t _x to °C				Viscosity centistokes		
A' to °C				η		
B' to °C				B ^v to °C		
C' to °C				A ^v to °C		
A'* to °C				(B ^v) to °C		
B'* to °C				(A ^v) to °C		
Ac to °C				c _p liq. °K		
Bc to °C				c _p vap. °K		
Cc to °C				c _v vap.		
Cryos. A° const. B°						
t _e °C	181.92		5			
† grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

NAME		1-Fluorodecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₉ F		
Mole % Pur.	Ref. 3	Molecular Formula C ₁₀ H ₂₁ F	Molecular Weight 160.268				
		Ref.			Ref.		Ref.
F.P. °C	-35.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	21.25	5	g	°K
B.P. °C			BP	0.0509	5	h	
760 mm	186.2	3	t _e	0.0348	5	f'	to
100	120.9	5				g'	°K
30	91.5	5	30 mm	0.7394	5	h'	
10	69.0	5	ΔHm cal/g			m	to
1	31.4	5	ΔHv cal/g			n	°K
Pressure mm 25°C	0.63	5	25°C	83.17	5	o	
t _e	1225.13	5	30 mm	74.30	5		
Density g/ml 20°C	0.8194	3	BP	62.81	5	m'	to
25	0.8150	3	t _e	60.60	5	n'	°K
d ₄ ^t			ΔHv/T _e	20.29	5	o'	
a	0.8370	5	d 85 to	85.40	5	Surface tension dynes/cm. 20°C	
b	-0.03880	5	e 210 °C	0.1213	5	y	23.97
Ref. Index n _D			d' to				30
20°C	1.4085	3	e' °C				40
25	1.4066	3	d _c g/ml			Parachor [P]	
30			v _c ml/g				20°C
"C"	0.6639	4	t _c °C				30
MR (Obs.)	48.3041	4	P _c mm				40
MR (Calc.)	48.230	5	PV/RT				Sugd. 432.8
(nD-d/2)	0.9988	4	25°C	1.0046	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 80 to	7.2542	3	BP	0.9356	5	Flash Point °C	
B 230 °C	1704.75	3	t _e	0.9198	5	Fire Point	
C	203.6	3	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 85 to	1.80849	5	ΔHc kcal/m			Solubility in +	
B* 210 °C	1618.06	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _x to			η °C			Ether	
t _x °C						n-Heptane	
A' to			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C'			(B ^v) to			Water in	
A'* to			(A ^v) °C				
B'* °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	205.6	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 11

NAME		1-Fluoroundecane			STRUCTURAL FORMULA	
					$\text{CH}_3(\text{CH}_2)_{10}\text{F}$	
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{11}\text{H}_{23}\text{F}$	Molecular Weight	174.294	
F.P. °C	-16.	3	dt/dP °C/mm			f to
F.P. 100%			25°C	58.83	5	g °K
B.P. °C			BP	0.0524	5	h
760 mm	206.	3	t _e	0.0347	5	f' to
100	139.	5	30 mm	0.7655	5	g' °K
30	108.	5	ΔHm cal/g			h'
10	85.	5	ΔHv cal/g			m to
1	46.	5	25°C	83.09	5	n °K
Pressure mm 25°C	0.21	5	30 mm	72.23	5	o
t _e	1275.68	5	BP	60.98	5	m' to
Density g/ml 20°C	0.8224	3	t _e	58.51	5	n' °K
d ₄ 25	0.8181	3	t _e (d, e)	58.47	5	o'
d ₄ 30			ΔHv/T _e	20.36	5	
a	0.8396	5	d 100 to	84.70	5	Surface tension dynes/cm. 20°C
b	-0.03860	5	e 240 °C	0.1152	5	γ
Ref. Index n _D 20°C	1.4138	3	e' to °C			30 23.55
25	1.4119	3				40 22.57
30			d _c g/ml			Parachor [P] 20°C
"C"	0.6696	4	v _c ml/g			30
MR (Obs.)	52.9369	4	t _c °C			40
MR (Calc.)	52.848	5	P _c mm			Sugd. 471.8
(n _D -d/2)	1.0026	4	PV/RT 25°C	1.0026	5	Exp. L. l. %/wt. u.
Dielectric			30 mm	1.0000	5	Dispersion
A 100 to	7.308	3	BP	0.9347	5	Flash Point °C
B 250 °C	1797.8	3	t _e	0.9152	5	Fire Point
C	200.	3	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared
A* to	1.887	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
B* °C	1709.6	5	ΔHf			
K			ΔFf			
c			Viscosity centistokes °C			
t _x to °C						
t _x °C						
A' to °C			B ^v to °C			
B' °C			A ^v to °C			
C' °C			(B ^v) to °C			
A'* to °C			(A ^v) °C			
B'* to °C			c _p liq. °K			
Ac to °C			c _p vap. °K			
Bc t _c °C			c _v vap.			
Cc °C						
Cryos. A* consts. B*						
t _e °C	227.82	5				
* grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

No. 12

NAME		1-Fluorododecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₁ F		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₂ H ₂₅ F	Molecular Weight			
		Ref.				Ref.	
F. P. °C	-13.	3	dt/dP °C/mm				f to
F. P. 100%			25°C	168.4	5		g _ _ °K
B. P. °C			BP	0.0538	5		h
760 mm	225.	3	t _e	0.0345	5		f' to
100	156.	5					g' _ _ °K
30	125.	5	30 mm	0.7895	5		h'
10	101.	5	ΔHm cal/g				m to
1	60.	5	ΔHv cal/g				n _ _ °K
Pressure mm 25°C	0.07	5	25°C	83.35	5		o
t _e	1324.09	5	30 mm	70.49	5		m' to
Density g/ml 20°C	0.8249	3	BP	59.52	5		n' _ _ °K
t	0.8208	3	t _e	56.69	5		o'
d			t _e (d, e)	56.87	5		
d ₄	30		ΔHv/T _e	20.44	5		
a	0.8413	5	d 120 to	84.13	5		Surface tension
b	-0.03820	5	e 260 °C	0.1094	5		dynes/cm. 20°C
Ref. Index			d'				30
n _D 20°C	1.4184	3	e'				40
25	1.4165	3	e'				25.06
30			d _c g/ml				24.08
"C"	0.6746	4	v _c ml/g				23.13
MR (Obs.)	57.5797	4	t _c °C				5
MR (Calc.)	57.466	5	P _c mm				Parachor [P]
(n _D -d/2)	1.0059	4	PV/RT				20°C
Dielectric			25°C	0.9995	5		30
A 115 to	7.357	3	30 mm	1.0000	5		40
B 260 °C	1885.6	3	BP	0.9361	5		Sugd. 510.8
C	196.	3	t _e	0.9110	5		Exp. L. l. %/wt.
A* to	1.959	5	t _c				u.
B* °C	1796.4	5	ΔHc kcal/m				Dispersion
K			ΔHf				Flash Point °C
c			ΔFf				Fire Point
t _k to			Viscosity				M Spec.
t _x °C			centistokes				Ultra V.
A' to			η °C				X-Ray Dif.
B' °C							Infrared
C'							Solubility in +
A'* to			B ^v to				Acetone
B'* °C			A ^v °C				Carbon tet.
Ac to			(B ^v) to				Benzene
Bc t _c °C			(A ^v) °C				Ether
Cc			c _p liq. °K				n-Heptane
Cryos. A°			c _p vap. °K				Ethanol
const. B°			c _v vap.				Water
t _e °C	249.23	5					Water in
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 13

NAME		1-Fluorotridecane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_{12}\text{F}$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{13}\text{H}_{27}\text{F}$	Molecular Weight 202.346				
		Ref.			Ref.		Ref.
F.P. °C	+3.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	443.6	5	g	to °K
B.P. °C			BP	0.0549	5	h	
760 mm	242.	3	t_e	0.0343	5	f'	to
100	171.	5	30 mm	0.8109	5	g'	to °K
30	139.	5	ΔH_m cal/g			h'	
10	114.	5				m	to
1	73.	5	ΔH_v cal/g			n	to °K
Pressure mm 25°C	0.02	5	25°C	82.97	5	o	
t_e	1366.68	5	30 mm	68.59	5		
Density g/ml 20°C	0.8271	3	BP	57.65	5	m'	to
t 25	0.8230	3	t_e	54.86	5	n'	to °K
d ₄ 30			t_e (d, e)	54.87	5	o'	
			$\Delta H_v/T_e$	20.51	5		
a	0.8435	5	d 130 to	83.39	5	Surface tension dynes/cm. 20°C	
b	-0.03820	5	e 275 °C	0.1064	5	γ	25.51 5
			d'				30 24.51 5
			e'				40 23.54 5
Ref. Index n _D 20°C	1.4224	3	d _c g/ml			Parachor [P] 20°C	
25	1.4205	3	v _c ml/g				
30			t _c °C	405.47	5		
"C"	0.6788	4	P _c mm	13968.92	5		Sugd. 549.8 5
MR (Obs.)	62.2203	4	PV/RT			Exp. L.l./wt. u.	
MR (Calc.)	62.084	5	25°C	0.9962	5	Dispersion	
(nD-d/2)	1.0088	4	30 mm	1.0000	5	Flash Point °C	
Dielectric			BP	0.9312	5	Fire Point	
A 125 to	7.406	3	t_e	0.9075	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
B 285 °C	1969.1	3	t_c			Solubility in ⁺	
C	193.	3	ΔH_c kcal/m			Acetone	
A* to	2.030	5	ΔH_f			Carbon tet.	
B* °C	1878.8	5	ΔF_f			Benzene	
K			Viscosity centistokes η			Ether	
t _k to						n-Heptane	
t _x °C						Ethanol	
A' to			B ^v to			Water	
B' °C			A ^v °C			Water in	
A'* to			(B ^v) to				
B'* °C			(A ^v) °C				
Ac to			c _p liq. °K				
Bc °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A* const. B*							
t _e °C	268.11	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Fluorotetradecane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_{13}\text{F}$		
Mole % Pur.		Ref. 3	Molecular Formula $\text{C}_{14}\text{H}_{29}\text{F}$	Molecular Weight 216.372			
		Ref.			Ref.	Ref.	
F.P. °C	4.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	1172.	5	g	°K
B.P. °C			BP	0.0561	5	h	
760 mm	258.	3	t_e	0.0342	5	f'	to
100	185.9	5				g'	°K
30	152.99	5	30 mm	0.8314	5	h'	
10	127.62	5	$\Delta\text{Hm cal/g}$			m	to
1	84.98	5				n	°K
Pressure mm 25°C	0.01	5	$\Delta\text{Hv cal/g}$	82.71	5	o	
t_e	1407.10	5	25°C	66.84	5		
Density g/ml 20°C	0.8290	3	30 mm	56.32	5	m'	to
d_t	0.8250	3	BP	53.17	5	n'	°K
d_4			t_e	53.49	5	o'	
			$\Delta\text{Hv}/T_e$	20.56	5		
a	0.8450	5	d 150 to	82.17	5	Surface tension dynes/cm. 20°C	
b	-0.03800	5	e 290 °C	0.1002	5	y	25.90
Ref. Index n_D			d' °C				30 24.91
20°C	1.4259	3	e' °C				40 23.96
25	1.4240	3	d_c g/ml			Parachor [P] 20°C	
30			v_c ml/g				30
"C"	0.6826	4	t_c °C				40
MR (Obs.)	66.8618	4	P_c mm			Sugd.	588.8
MR (Calc.)	66.702	5	PV/RT			Exp. L. l. %/wt. u.	
(nD-d/2)	1.0114	4	25°C			Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 150 to	7.449	3	BP	0.9344	5	Fire Point	
B 320 °C	2048.3	3	t_e	0.9040	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C			t_c			Solubility in +	
A* 150 to	2.09396	5	$\Delta\text{Hc kcal/m}$			Acetone	
B* 300 °C	1957.14	5	ΔHf			Carbon tet.	
K			ΔFf			Benzene	
c			Viscosity centistokes			Ether	
t_x °C			η °C			n-Heptane	
A' °C						Ethanol	
B' °C			B ^v to			Water	
C' °C			A ^v °C			Water in	
A'* to °C			(B ^v) to				
B'* to °C			(A ^v) °C				
Ac to °C			c_p liq. °K				
Bc t_c °C			c_p vap. °K				
Cc t_c °C			c_v vap.				
Cryos. A* const. B*							
t_e °C	286.27	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 15

NAME		1-Fluoropentadecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₄ F		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₅ H ₃₁ F	Molecular Weight			
		Ref.			Ref.		
F. P. °C	17.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	3100.	5	g	°K
B. P. °C			BP	0.0572	5	h	
760 mm	274.	3	t _e	0.0341	5	f'	to
100	199.92	5	30 mm	0.8508	5	g'	°K
30	166.26	5	ΔHm cal/g			h'	
10	140.28	5	ΔHv cal/g			m	to
1	96.57	5	25°C	82.56	5	n	°K
Pressure mm 25°C	0.02	5	30 mm	65.23	5	o	
t _e	1445.10	5	BP	54.26	5		
Density g/ml 20°C	0.8306	3	t _e	51.59	5	m'	to
d ^t 25	0.8267	3	t _e (d, e)	51.24	5	n'	°K
d ⁴ 30			ΔHv/T _e	20.61	5	o'	
a	0.8462	5	d 160 to	82.15	5	Surface tension dynes/cm. 20°C	
b	-0.03780	5	e 315 °C	0.1018	5	γ	26.24 5
Ref. Index n _D 20°C	1.4290	3	d' to			30	25.27 5
25	1.4271	3	e' °C			40	24.32 5
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.6859	4	v _c ml/g			30	
MR (Obs.)	71.5107	4	t _c °C			40	
MR (Calc.)	71.320	5	P _c mm			Sugd.	627.8 5
(nD-d/2)	1.0137	4	PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 155 to	7.488	3	BP	0.9211	5	Flash Point °C	
B 320 °C	2123.4		t _e	0.9006	5	Fire Point	
C	187.	3	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 160 to	2.15324	5	ΔHc kcal/m			Solubility in ⁺	
B* 315 °C	2031.74	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to			η °C			Ether	
t _x °C			B ^v to			n-Heptane	
A' to			A ^v °C			Ethanol	
B' °C			(B ^v) to			Water	
C' °C			(A ^v) °C			Water in	
A'* to			c _p liq. °K				
B'* °C			c _p vap. °K				
Ac _l to			c _v vap.				
Bc _l t _c °C							
Cc							
Cryos. A* consts. B*							
t _e °C	303.61	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Fluorohexadecane		STRUCTURAL FORMULA		
				CH ₃ (CH ₂) ₁₅ F		
Mole % Pur.	Ref. 3	Molecular Formula C ₁₆ H ₃₃ F	Molecular Weight 244.424			
		Ref.		Ref.	Ref.	
F.P. °C	18.	3	dt/dP °C/mm		f to	
F.P. 100%			25°C		g °K	
B.P. °C			BP	0.0583	5	h
760 mm	289.	3	t _e	0.0340	5	f' to
100	213.61	5		0.8701	5	g' °K
30	179.20	5	30 mm			h'
10	152.63	5	ΔHm cal/g			m to
1	107.86	5				n °K
Pressure mm 25°C			ΔHv cal/g			o
t _e	1481.96	5	25°C	82.51	5	m' to
			30 mm	63.71	5	n' °K
Density g/ml 20°C	0.8321	3	BP	53.07	5	o'
d _t 25	0.8282	3	t _e	50.08	5	
d ₄ 30			t _e (d, e)	50.00	5	
			ΔHv/T _e	20.61	5	
a	0.8477	5	d 170 to	81.08	5	Surface tension
b	-0.03780	5	e 330 °C	0.0969	5	dynes/cm. 20°C
Ref. Index n _D 20°C	1.4317	3	d'			30
25	1.4298	3	e'			40
30			e'			26.55
"C"	0.6888	4	d _c g/ml			25.57
MR (Obs.)	76.1431	4	v _c ml/g			24.62
MR (Calc.)	75.938	5	t _c °C			
(n _D -d/2)	1.0156	4	P _c mm			666.8
Dielectric			PV/RT 25°C			5
A 170 to	7.520	3	30 mm	1.0000	5	Exp. L. l. %/wt. u.
B 335 °C	2194.8	3	BP	0.9234	5	Dispersion
C	184.	3	t _e	0.8970	5	Flash Point °C
A* 175 to	2.20457	5	t _c			Fire Point
B* 330 °C	2102.84	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared
K			ΔHf			Solubility in +
c			ΔFf			Acetone
t _k to			Viscosity centistokes °C			Carbon tet.
t _x °C			η			Benzene
A' to						Ether
B' °C			B ^v to			n-Heptane
C' °C			A ^v °C			Ethanol
A'* to			(B ^v) to			Water
B'* °C			(A ^v) °C			Water in
Ac to			c _p liq. °K			
Bc °C			c _p vap. °K			
Cc °C			c _v vap.			
Cryos. A° const. B°						
t _e °C	320.65	5				
						grams/100 grams solvent
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

TABLE I. FLUOROALKANES

No. 17

NAME		1-Fluoroheptadecane				STRUCTURAL FORMULA			
						$\text{CH}_2(\text{CH}_2)_{16}\text{F}$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{17}\text{H}_{35}\text{F}$	Molecular Weight 258.450						
		Ref.			Ref.				Ref.
F. P. °C	29.	3	dt/dP °C/mm			f	to		
F. P. 100%			25°C			g	°K		
B. P. °C			BP		0.0592	5	h		
760 mm	303.	3	t_e		0.0339	5	f'	to	
100	226.22	5	30 mm		0.8863	5	g'	°K	
30	191.19	5	$\Delta\text{Hm cal/g}$				h'		
10	164.10	5	$\Delta\text{Hv cal/g}$				m	to	
1	118.43	5	25°C		82.50	5	n	°K	
Pressure mm 25°C			30 mm		62.32	5	o		
t_e	1515.75	5	BP		51.62	5	m'	to	
Density g/ml 20°C	0.8334 ^b	3	t_e (d, e)		48.73	5	n'	°K	
25	0.8295 ^b	3	$\Delta\text{Hv}/T_e$		20.67	5	o'		
d ₄ 30			d 185 to		80.63	5	Surface tension dynes/cm. 20°C		
a	0.8490	5	e 350 °C		0.0958	5	26.83 5		
b	-0.03780	5	d' °C				30 25.84 5		
Ref. Index			e' °C				40 24.88 5		
n _D 25	1.4341 ^b	3	d _c g/ml				Parachor [P] 20°C		
30	1.4322 ^b	3	v _c ml/g				30		
"C"	0.6913	4	t _c °C				40		
MR (Obs.)	80.7764	4	P _c mm				Sugd. 705.8 5		
MR (Calc.)	80.556	5	PV/RT 25°C				Exp. L. l. %/wt. u.		
(nD-d/2)	1.0174	4	30 mm		1.0000	5	Dispersion		
Dielectric			BP		0.9181	5	Flash Point °C		
A 185 to	7.556	3	t_e		0.8942	5	Fire Point		
B 350 °C	2262.5	3	t_c				M. Spec. Ultra V. X-Ray Dif. Infrared		
C	181.	3	$\Delta\text{Hc kcal/m}$				Solubility in ⁺		
A* 185 to	2.25899	5	ΔHf				Acetone		
B* 350 °C	2170.33	5	ΔFf				Carbon tet.		
K			Viscosity centistokes				Benzene		
t _k to			η °C				Ether		
t _x °C			B ^v to				n-Heptane		
A' to			A ^v °C				Ethanol		
B' °C			(B ^v) to				Water		
C' °C			(A ^v) °C				Water in		
A'* to			c _p liq. °K						
B'* °C			c _p vap. °K						
Ac t _c °C			c _v vap.						
Bc t _c °C									
Cc t _c °C									
Cryos. A* consts. B*									
t _e °C	336.10	5							
		^b For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

NAME		1-Fluorooctadecane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_{17}\text{F}$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{18}\text{H}_{37}\text{F}$	Molecular Weight	272.476		
		Ref.			Ref.	Ref.	
F.P. °C	29.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0601	5	h	
760 mm	316.	3	t _e	0.0338	5	f'	to
100	237.65	5	30 mm	0.9028	5	g'	°K
30	201.99	5	ΔHm cal/g			h'	
10	174.39	5	ΔHv cal/g			m	to
1	127.80	5	25°C	81.98	5	n	°K
Pressure mm 25°C			30 mm	60.76	5	o	
t _e	1545.77	5	BP	49.94	5		
Density g/ml 20°C	0.8345	3	t _e	47.29	5	m'	to
dt 25	0.8307	3	t _e (d, e)	46.68	5	n'	°K
d 4 30			ΔHv/T _e	20.67	5	o'	
a	0.8497	5	d to	79.94	5	Surface tension dynes/cm. 20°C	
b	-0.03760	5	e °C	0.0949	5	30	27.07
Ref. Index			d' to			40	26.10
n _D 20°C	1.4363 ^b	3	e' °C				25.15
25	1.4344 ^b	3	d _c g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.6937	4	t _c °C			30	
MR (Obs.)	85.4232	4	P _c mm			40	
MR (Calc.)	85.174	5	PV/RT			Sugd.	744.8
(n _D -d/2)	1.0190	4	25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 195 to	7.586	3	BP	0.9100	5	Flash Point °C	
B 360 °C	2327.4	3	t _e	0.8911	5	Fire Point	
C	179.	3	t _c			M Spec.	
A* 195 to	2.30719	5	ΔHc kcal/m			Ultra V.	
B* 355 °C	2235.05	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
c			Viscosity centistokes			Solubility in ⁺	
t _k to			η °C			Acetone	
t _x °C			B ^v to			Carbon tet.	
A' to			A ^v °C			Benzene	
B' °C			(B ^v) to			Ether	
C' °C			(A ^v) °C			n-Heptane	
A'* to			c _p liq. °K			Ethanol	
B'* °C			c _p vap. °K			Water	
Ac to			c _v vap.			Water in	
Bc t _c °C							
Cc							
Cryos. A°							
const. B°							
t _e °C	350.33	5					
		^b For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent		
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 19

NAME		1-Fluorononadecane			STRUCTURAL FORMULA		
					$\text{CH}_2(\text{CH}_2)_{18}\text{F}$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{19}\text{H}_{39}\text{F}$	Molecular Weight	286.502		
		Ref.			Ref.		
F. P. °C	39.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C			h	
760 mm	329.	3	BP	0.0610	5	f'	to
100	249.82	5	t_e	0.0338	5	g'	°K
30	213.53	5	30 mm	0.9192	5	h'	
10	185.42	5	ΔHm cal/g			m	to
1	137.94	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C	82.17	5	o	
t_e	1578.00	5	30 mm	59.55	5		
Density g/ml 20°C			BP	49.24	5	m'	to
t 25	0.8356 ^b	3	t_e (d, e)	46.08	5	n'	°K
d_4 30	0.8318 ^b	3	$\Delta\text{Hv}/T_e$	45.99	5	o'	
				20.68	5		
a	0.8508	5	d 210 to	78.63	5	Surface tension dynes/cm. 20°C	
b	-0.03760	5	e 370 °C	0.0893	5	g	27.31
Ref. Index n_D			d' to			30	26.33
25	1.4383 ^b	3	e' °C			40	25.38
30	1.4364 ^b	3	d_c g/ml			Parachor [F]	
"C"	0.6957	4	v_c ml/g			20°C	
MR (Obs.)	90.0599	5	t_c °C			30	
MR (Calc.)	89.792	4	P_c mm			40	
($n_D-d/2$)	1.0205	4	PV/RT			Sugd.	783.8
Dielectric			25°C			Exp. L. l. %/wt.	
A 210 to			30 mm	1.0000	5	u.	
B 375 °C	7.612	3	BP	0.9175	5	Dispersion	
C	2389.7	3	t_e	0.8882	5	Flash Point °C	
A* 210 to	2.35002	5	t_c			Fire Point	
B* 370 °C	2297.40	5	ΔHc kcal/m			M. Spec.	
K			ΔHf			Ultra V.	
t_k to			ΔFf			X-Ray Dif.	
t_x °C			Viscosity centistokes			Infrared	
A' to			η °C			Solubility in ⁺	
B' °C			B^v to			Acetone	
A'*	to		A^v °C			Carbon tet.	
B'*	°C		(B^v) to			Benzene	
Ac to			(A^v) °C			Ether	
Bc °C			c_p liq. °K			n-Heptane	
Cc t_c °C			c_p vap. °K			Ethanol	
Cryos. A°			c_v vap.			Water	
const. B°						Water in	
t_e °C	365.40	5					
		^b For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent		
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Fluoroicosane			STRUCTURAL FORMULA			
					CH ₃ (CH ₂) ₁₉ F			
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₄₁ F	Molecular Weight	300.528			
		Ref.			Ref.			
F.P. °C	38.	3	dt/dP			f	to	
F.P. 100%			°C/mm			g	°K	
B.P. °C			25°C			h		
760 mm	341.	3	BP	0.0619	5	f'	to	
100	260.72	5	t _e	0.0337	5	g'	°K	
30	223.82	5				h'		
10	195.21	5	ΔHm cal/g			m	to	
1	146.86	5				n	°K	
Pressure mm 25°C			ΔHv cal/g			o		
t _e	1607.15	5	25°C	81.71	5	m'	to	
Density g/ml 20°C			30 mm	58.19	5	n'	°K	
d ^t 25	0.8365 ^b	3	BP	48.17	5	o'		
d ^t 30	0.8328 ^b	3	t _e	44.84	5	Surface tension dynes/cm. 20°C	27.51	5
			t _e (d, e)	44.92	5	30	26.55	5
			ΔHv/T _e	20.66	5	40	25.61	5
a	0.8513	5	d 220 to	77.33	5	Parachor [P]		
b	-0.03740	5	e 385 °C	0.0855	5	20°C		
Ref. Index n _D 20°C	1.4401 ^b	3	d'			30		
25	1.4382 ^b	3	e'			40		
30			d c g/ml			Sugd.	822.8	5
"C"	0.6977	4	v c ml/g			Exp. L.l. %/wt. u.		
MR (Obs.)	94.7041	4	t c °C			Dispersion		
MR (Calc.) (nD-d/2)	94.410	5	P c mm			Flash Point °C		
	1.0218	4	PV/RT			Fire Point		
Dielectric			25°C			M Spec. Ultra V. X-Ray Dif. Infrared		
A 220 to	7.636	3	30 mm			Solubility in +		
B 390 °C	2450.1	3	BP	1.0000	5	Acetone		
C	174.	3	t _e	0.9190	5	Carbon tet.		
A* 220 to	2.3899	5	t _c	0.8857	5	Benzene		
B* 390 °C	2357.51	5	ΔHc kcal/m			Ether		
K			ΔHf			n-Heptane		
t _k °C			ΔFf			Ethanol		
t _k °C			Viscosity centistokes			Water		
A' °C			η			Water in		
B' °C								
C' °C			B ^v to °C					
A* to °C			A ^v to °C					
B* to °C			(B ^v) to °C					
A _c to °C			(A ^v) °C					
B _c to °C			c _p liq. °K					
C _c to °C			c _p vap. °K					
Cryos. A° const. B°			c _v vap.					
t _e °C	379.08	5						

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 21

NAME		2-Fluoropropane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CHFCH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_3\text{H}_7\text{F}$	Molecular Weight 62.086				
		Ref.		Ref.		Ref.	
F. P. °C	-133.4	3	dt/dP °C/mm		f	to °K	
F. P. 100%			25°C	0.0128	g		
B. P. °C			BP	0.0326	h		
760 mm	-9.4	3	t_e	0.0346	f'	to °K	
100	-50.7	5	30 mm	0.4559	g'		
30	-68.9	5	ΔH_m cal/g		h'		
10	-82.7	5	ΔH_v cal/g		m	to °K	
1	-105.5	5	25°C	79.55	n		
Pressure mm 25°C	2546.7	5	30 mm	97.61	o		
t_e	703.6	5	BP	86.31			
Density g/ml 20°C	0.7238 ^a	3	t_e	86.68	m'	to °K	
t_{25}	0.7158 ^a	3	t_e (d, e)	86.67	n'		
d_4^{30}			$\Delta H_v/T_e$	20.55	o'		
a	0.7588	5	d -69 to	84.52	Surface tension dynes/cm. 20°C		
b	-0.00135	5	e -2 to	0.1900	f	11.52 5	
Ref. Index n_D^{20}	1.3020 ^a	3	d'		30	10.36 5	
25	1.2992 ^a	3	e'		40	9.23 5	
30			d_c g/ml		Parachor [P]		
"C"	0.5643	4	v_c ml/g		20°C		
MR (Obs.)	16.138	4	t_c °C		30		
MR (Calc.)	15.904	5	P_c mm		40		
Dielectric					Sugd.	159.8 5	
A -69 to	6.94163	5	PV/RT		Exp. L. l. %/wt. u.		
B 19 °C	940.5	5	25°C	0.9254	Dispersion		
C	241.	5	30 mm	1.0000	Flash Point °C		
A* -69 to	1.25964	5	BP	0.9638	Fire Point		
B* 9 °C	876.8	5	t_e	0.9658	M. Spec. Ultra V. X-Ray Dif. Infrared		
K			t_c		Solubility in ⁺		
t_k to °C			ΔH_c kcal/m		Acetone		
t_x to °C			ΔH_f		Carbon tet.		
A' to °C			ΔF_f		Benzene		
B' to °C			Viscosity centistokes η °C		Ether		
C' to °C					n-Heptane		
A'* to °C			B ^v to °C		Ethanol		
B'* to °C			A ^v to °C		Water		
Ac to °C			(B ^v) to °C		Water in		
Bc to °C			(A ^v) to °C				
Cc to °C			c_p liq. °K				
Cryos. A° const. B°			c_p vap. °K				
t_e °C	-11.29	5	c_v vap.				

^a For the liquid at saturation pressure⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		2-Fluorobutane		STRUCTURAL FORMULA	
				CH ₃ CHFCH ₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₉ F	Molecular Weight	76.112
			Ref.	Ref.	
F. P. °C	-121.4	3	dt/dP °C/mm		f to
F. P. 100%			25°C	0.0356	g °K
B. P. °C	25.1	3	BP	0.0355	h
760 mm	-20.1	5	t _e	0.0341	f' to
100	-40.1	5	t _e (d, e)	0.5033	g' °K
30	-55.4	5	ΔHm cal/g		h'
10	-80.7	5	ΔHv cal/g		m to
1			25°C	82.28	n °K
Pressure mm 25°C	757.2	5	30 mm	93.88	o
t _e	798.6	5	BP	82.27	m' to
Density g/ml 20°C	0.7621	3	t _e	82.03	n' °K
d ^t 25	0.7560	3	t _e (d, e)	82.03	o'
d ^t 30			ΔHv/T _e	20.84	
a	0.7871	5	d -40 to	86.73	Surface tension
b	-0.00112	5	e 46 °C	0.1780	dynes/cm. 20°C
Ref. Index n _D 20°C	1.3326	3	d' to		30 15.48 5
25	1.3300	3	e' °C		40 14.41 5
30			d g/ml		40 13.36 5
"C"	0.5876	4	v _c ml/g		Parachor [P]
MR (Obs.)	20.521	4	t _c °C		20°C
MR (Calc.) (nd-d/2)	20.522	5	P _c mm		30
Dielectric			PV/RT		40
A -40 to	7.05343	5	25°C	0.9594	Sugd. 198.8 5
B 56 °C	1081.1	5	30 mm	1.0000	Exp. L. l. %/wt.
C	234.	5	BP	0.9593	u.
A* -40 to	1.41842	5	t _e	0.9581	Dispersion
B* 46 °C	1012.5	5	t _c		Flash Point °C
K			ΔHc kcal/m		Fire Point
t _k to			ΔHf		M Spec.
t _x °C			ΔFf		Ultra V.
A' to			Viscosity centistokes		X-Ray Dif.
B' °C			η °C		Infrared
C'			B ^v to		Solubility in +
A' * to			A ^v °C		Acetone
B' * °C			(B ^v) to		Carbon tet.
Ac to			(A ^v) °C		Benzene
Bc °C			c _p liq. °K		Ether
Cc °C			c _p vap. °K		n-Heptane
Cryos. A°			c _v vap.		Ethanol
const. B°					Water
t _e °C	26.44	5			Water in
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE I. FLUOROALKANES

No. 23

NAME		2-Fluoro-2-methylpropane			STRUCTURAL FORMULA			
					<chem>CH3CF(CH3)CH3</chem>			
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₉ F	Molecular Weight 76.112					
		Ref.						Ref.
F.P. °C	-77.	3	dt/dP °C/mm			f	to	
F.P. 100%			25°C	0.0238	5	g	°K	
B.P. °C			BP	0.0344	5	h		
760 mm	12.1	3	t _e	0.0343	5	f'	to	
100	-31.6	5	30 mm	0.4849	5	g'	°K	
30	-50.9	5	ΔHm cal/g			h'		
10	-65.6	5	ΔHv cal/g			m	to	
1	-90.0	5	25°C	75.49	5	n	°K	
Pressure mm	1214.9	5	30 mm	88.62	5	o		
25°C	762.8	5	BP	77.74	5	m'	to	
t _e			t _e	77.73	5	n'	°K	
Density g/ml	0.7421 ^a	3	t _e (d, e)	77.72	5	o'		
20°C	0.7352 ^a	3	ΔHv/T _e	20.73	5	Surface tension dynes/cm. 20°C		
t						γ	13.78	5
d ₄			d -51 to	79.83	5		30	12.65
a	0.7710	5	e -32	0.1726	5		40	11.53
b	-0.00122	5	d'			Parachor [F]		
Ref. Index			e'				20°C	
n _D							30	
20°C	1.3201 ^a	3	d _c g/ml				40	
25	1.3174 ^a	3	v _c ml/g				Sugd.	198.8
30			t _c °C			Exp. L. l. %/wt.		
"C"	0.5818	4	P _c mm			u.		
MR (Obs.)	20.352	4	PV/RT			Dispersion		
MR (Calc.)	20.522	5	25°C	0.9477	5	Flash Point °C		
(nD-d/2)			30 mm	1.0000	5	Fire Point		
Dielectric			BP	0.9609	5	M. Spec.		
A -51 to	7.00248	5	t _e	0.9608	5	Ultra V.		
B 42 °C	1022.6	5	t _c			X-Ray Dif.		
C	236.	5	ΔHc kcal/m			Infrared		
A* -51 to	1.38356	5	ΔHf			Solubility in ⁺		
B* 32 °C	956.2	5	ΔFf			Acetone		
K			Viscosity centistokes			Carbon tet.		
t _k to			η °C			Benzene		
t _x °C						Ether		
A' to			B ^v to			n-Heptane		
B' °C			A ^v °C			Ethanol		
C'			(B ^v) to			Water		
A'* to			(A ^v) °C			Water in		
B'* °C			c _p liq. °K					
Ac to			c _p vap. °K					
Bc t _c °C			c _v vap.					
Cc °C								
Cryos. A°								
const. B°								
t _e °C	12.20	5						
^a For the liquid at saturation pressure				⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		2-Fluoro-2-methylbutane			STRUCTURAL FORMULA		
					CH ₃ CF(CH ₃)CH ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ F	Molecular Weight	90.138		
		3					
		Ref.			Ref.	Ref.	
F. P. °C	-121.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0681	5	g	°K
B. P. °C	44.8	3	BP	0.0371	5	h	
760 mm	-2.6	5	t _e	0.0339	5	f'	to
100	-23.7	5	30 mm	0.5307	5	g'	°K
30	-39.8	5	ΔHm cal/g			h'	
10	-66.6	5	ΔHv cal/g			m	to
1			25°C	78.35	5	n	°K
Pressure mm 25°C	356.9	5	30 mm	86.13	5	o	
t _e	852.5	5	BP	75.20	5	m'	to
Density g/ml 20°C	0.7780	3	t _e	74.68	5	n'	°K
d ^t 25	0.7730	3	t _e (d, e)	74.68	5	o'	
d ^t 30			ΔHv/T _e	20.96	5	Surface tension dynes/cm. 20°C	
a	0.7982	5	d -24 to	82.35	5	30	17.61
b	-0.03937	5	e 68 °C	0.1595	5	40	16.66
Ref. Index n _D 20°C	1.3502	3	d' to				15.71
25	1.3476	3	e' °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.6044	4	v _c ml/g			40	
MR (Obs.)	24.943	4	t _c °C			Sugd.	237.8
MR (Calc.) (nD-d/2)	25.140	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C	0.9741	5	Dispersion	
A -24 to	7.11734	5	30 mm	1.0000	5	Flash Point °C	
B 78 °C	1166.3	5	BP	0.9569	5	Fire Point	
C	231.	5	t _e	0.9538	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* -24 to	1.53378	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 68 °C	1094.7	5	ΔHc kcal/m				
K			ΔHf				
t _x to °C			ΔFf				
A' to °C			Viscosity centistokes η °C				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A'*	to °C		(B ^v) to °C				
B'*	to °C		(A ^v) °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A* const. B*							
t _e °C	48.08	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 25

NAME		3-Fluorohexane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CHF}(\text{CH}_2)_3\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_6\text{H}_{13}\text{F}$	Molecular Weight 104.164				
		Ref.			Ref.		Ref.
F.P. °C	-104.	3	dt/dP			f	
F.P. 100%			°C/mm			g	to
B.P. °C			25°C	0.2725	5	h	°K
760 mm	82.9	3	BP	0.0403	5		
100	31.2	5	t_e	0.0336	5	f'	to
30	8.1	5	30 mm	0.5830	5	g'	°K
10	-9.7	5				h'	
1	-39.2	5	ΔH_m cal/g			m	to
Pressure			ΔH_v cal/g			n	°K
mm 25°C	73.94	5	25°C	83.59	5	o	
t_e	955.2	5	30 mm	86.25	5		
Density			BP	74.70	5	m'	to
g/ml 20°C	0.7949	3	t_e	73.63	5	n'	°K
t 25	0.7900	3	t_e (d, e)	73.60	5	o'	
d_4 30			$\Delta H_v/T_e$	21.11	5		
a	0.8145	5	d 8 to	87.49	5	Surface tension	
b	-0.03962	5	e 110 °C	0.1543	5	dynes/cm. 20°C	
Ref. Index			d'			19.88	5
n_D 20°C	1.3714	3	e'			30	5
25	1.3689	3				40	5
30			d_c g/ml			Parachor [F]	
"C"	0.6255	4	v_c ml/g			20°C	
MR (Obs.)	29.740	4	t_c °C			30	
MR (Calc.)	29.758	5	P_c mm			40	
Dielectric						Sugd. 276.8	
A 8 to	7.21512	5	PV/RT			Exp. L. l. %/wt.	
B 120 °C	1325.9	5	25°C	0.9936	5	u.	
C	223.	5	30 mm	1.0000	5	Dispersion	
A*	1.65805	5	BP	0.9516	5	Flash Point °C	
B* 110 °C	1249.4	5	t_e	0.9452	5	Fire Point	
K			t_c			M. Spec.	
t_k to			ΔH_c kcal/m			Ultra V.	
t_x °C			ΔH_f			X-Ray Dif.	
A' to			ΔF_f			Infrared	
B' °C			Viscosity			Solubility in ⁺	
C' °C			centistokes			Acetone	
A'* to			η			Carbon tet.	
B'* °C						Benzene	
Ac to			B ^v to			Ether	
Bc °C			A ^v °C			n-Heptane	
Cc °C			(B ^v) to			Ethanol	
			(A ^v) °C			Water	
			c_p liq. °K			Water in	
			c_p vap. °K				
			c_v vap.				
t_e °C	90.07	5					

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluoroheneicosane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₁₉ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₁ H ₄₃ F	Molecular Weight	314.554		
		Ref.			Ref.		
F. P. °C	47.	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C			g	to °K
B. P. °C	353.	3	BP	0.0630	5	h	to °K
760 mm	271.	5	t _e	0.0339	5	f'	to °K
100	233.	5	t _e	0.9521	5	g'	to °K
30	204.	5	30 mm			h'	to °K
10	155.	5	ΔHm cal/g			m	to °K
1			ΔHv cal/g			n	to °K
Pressure mm 25°C			25°C			o	to °K
t _e	1634.5	5	30 mm	56.74	5	m'	to °K
Density g/ml 20°C	0.8373 ^a	3	BP	46.63	5	n'	to °K
d ₄ ^t 25	0.8336 ^a	3	t _e	43.49	5	o'	to °K
d ₄ ^t 30			t _e (d, e)	43.29	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	20.55	5	γ	27.69 5
a	0.8521	5	d 233 to	76.50	5	30	26.73 5
b	-0.03740	5	e 412 °C	0.0846	5	40	25.79 5
Ref. Index n _D 20°C	1.4417 ^a	3	d' to °C			Parachor [P] 20°C	
25	1.4398 ^a	3	e' to °C			30	
30			d v c g/ml			40	
"C"	0.6994	4	v c ml/g			Sugd.	861.8 5
MR (Obs.)	99.342	4	t _c °C			Exp. L. l. %/wt. u.	
MR (Calc.) (nD-d/2)	99.028	5	P _c mm			Dispersion	
Dielectric			PV/RT 25°C	1.0000	5	Flash Point °C	
A 233 to	7.64224	5	30 mm	0.9120	5	Fire Point	
B 422 °C	2499.8	5	BP	0.8826	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	172.	5	t _e			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A* 233 to	2.41202	5	t _c				
B* 412 °C	2407.2	5	ΔHc kcal/m				
K			ΔHf				
t _x to °C			ΔFf				
t _x to °C			Viscosity centistokes η °C				
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C'			(B ^v) to °C				
A' * to °C			(A ^v) to °C				
B' * to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* consts. B'							
t _e °C	392.42	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 27

NAME		1-Fluorodocosane			STRUCTURAL FORMULA	
					CH ₂ F(CH ₂) ₂₀ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₂₂ H ₄₅ F	Molecular Weight 328.580			
		Ref.			Ref.	Ref.
F. P. °C	46.	3	dt/dP °C/mm		f	to
F. P. 100%			25°C		g	°K
B. P. °C			BP	0.0639	5	h
760 mm	364.	3	t _e	0.0339	5	f'
100	281.	5	30 mm	0.9671	5	g'
30	243.	5	ΔHm cal/g			h'
10	213.	5	ΔHv cal/g			m
1	163.	5	25°C			n
Pressure mm 25°C			30 mm	55.43	5	o
t _e	1660.1	5	BP	45.45	5	m'
Density g/ml 20°C	0.8381 ^a	3	t _e	42.27	5	n'
25	0.8344 ^a	3	t _e (d, e)	42.09	5	o'
d ₄ 30			ΔHv/T _e	20.48	5	
a	0.8529	5	d 243 to	75.40	5	Surface tension dynes/cm. 20°C
b	-0.03740	5	e 425 °C	0.0823	5	27.87
Ref. Index n _D 20°C	1.4432 ^a	3	d'			30
25	1.4413 ^a	3	e'			40
30			d _c g/ml			25.95
"C"	0.7010	4	v _c ml/g			Parachor [P] 20°C
MR (Obs.)	103.978	4	t _c °C			30
MR (Calc.) (nD-d/2)	103.646	5	P _c mm			40
Dielectric			PV/RT 25°C			Sugd. 900.8
A 243 to	7.65388	5	30 mm	1.0000	5	Exp. L. l. %/wt. u.
B 435 °C	2548.8	5	BP	0.9103	5	Dispersion
C °C	170.	5	t _e	0.8800	5	Flash Point °C
A* 243 to	2.43894	5	t _c			Fire Point
B* 425 °C	2456.3	5	ΔHc kcal/m			M. Spec. Ultra V. X-Ray Dif. Infrared
K			ΔHf			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
c			ΔFf			
t _k to °C			Viscosity centistokes η °C			
t _x to °C			B ^v to °C			
A' to °C			A ^v to °C			
B' to °C			(B ^v) to °C			
C' to °C			(A ^v) to °C			
A'* to °C			c _p liq. °K			
B'* to °C			c _p vap. °K			
Ac to °C			c _v vap.			
Bc to °C						
Cc to °C						
Cryos. A* consts. B*						
t _e °C	404.87	5				

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluorotricosane		STRUCTURAL FORMULA				
Mole % Pur.		Ref. 3	Molecular Formula $C_{23}H_{47}F$	Molecular Weight 342.606	$CH_2F(CH_2)_{21}CH_3$			
F. P. °C	54.	3	dt/dP °C/mm		f to °K			
F. P. 100%			25°C		g to °K			
B. P. °C			BP	0.0649	5	h to °K		
760 mm	375.	3	t _e	0.0340	5	f' to °K		
100	291.	5	t _e (d, e)	0.9821	5	g' to °K		
30	252.	5	ΔHm cal/g			h' to °K		
10	222.	5	ΔHv cal/g			m to °K		
1	171.	5	25°C			n to °K		
Pressure mm 25°C			30 mm	54.23	5	o to °K		
t _e	1685.6	5	BP	44.37	5	m' to °K		
Density g/ml 20°C	0.8388 ^a	3	t _e	41.16	5	n' to °K		
d ^t 25	0.8352 ^a	3	t _e (d, e)	40.98	5	n' to °K		
d ^t 30			ΔHv/T _e	20.42	5	o' to °K		
a	0.8532	5	d 252 to °C	74.39	5	Surface tension dynes/cm. 20°C	28.03	5
b	-0.03720	5	e 437 to °C	0.0801	5	30	27.08	5
Ref. Index n _D 20°C	1.4446 ^a	3	e' to °C			40	26.15	5
25	1.4427 ^a	3	d _c g/ml			Parachor [P] 20°C		
30			v _c ml/g			30		
"C"	0.7025	4	t _c °C			40		
MR (Obs.)	108.623	4	P _c mm			Sugd.	939.8	5
MR (Calc.) (n _D -d/2)	108.264	5	PV/RT 25°C			Exp. L. l. %/wt. u.		
Dielectric			30 mm	1.0000	5	Dispersion		
A 252 to °C	7.66520	5	BP	0.9086	5	Flash Point °C		
B 447 °C	2597.9	5	t _e	0.8774	5	Fire Point		
C	168.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared		
A* 252 to °C	2.46489	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
B* 437 °C	2505.5	5	ΔHf					
K			Viscosity centistokes					
c to °C			η °C					
t _k to °C			B ^v to °C					
t _x to °C			A ^v to °C					
A' to °C			(B ^v) to °C					
B' to °C			(A ^v) to °C					
C' to °C			c _p liq. °K					
A'* to °C			c _p vap. °K					
B'* to °C			c _v vap.					
Ac to °C								
Bc to °C								
Cc to °C								
Cryos. A* consts. B'								
t _e °C	417.32	5						
^a For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

TABLE I. FLUOROALKANES

No. 29

NAME		1-Fluorotetracosane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{F}(\text{CH}_2)_{22}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{24}\text{H}_{49}\text{F}$	Molecular Weight	356.632		
		Ref.			Ref.		
F.P. °C	53.	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C			h	
760 mm	385.	3	BP	0.0657	5		
100	299.	5	t _e	0.0340	5	f'	to
30	260.	5	30 mm	0.9957	5	g'	°K
10	230.	5				h'	
1	178.	5	ΔHm cal/g			m	to
Pressure mm 25°C			ΔHv cal/g			n	°K
t _e	1708.8	5	25°C			o	
Density g/ml 20°C			30 mm	53.04	5		
d ₄ ^t 25	0.8395 ^a	3	BP	43.29	5	m'	to
30	0.8358 ^a	3	t _e	40.04	5	n'	°K
			t _e (d, e)	39.88	5	o'	
			ΔHv/T _e	20.35	5		
a	0.8543	5	d	260 to	5	Surface tension dynes/cm. 20°C	
b	-0.03740	5	e	449 °C	5	γ	28.18
			d'	to		30	27.20
			e'	°C		40	26.25
Ref. Index n _D 20°C	1.4459 ^a	3	d _c g/ml			Parachor [P] 20°C	
25	1.4440 ^a	3	v _c ml/g			30	
30			t _c °C			40	
"C"	0.7038	4	P _c mm			Sugd.	978.8
MR (Obs.)	113.262	4	PV/RT 25°C			Exp. L.l./wt. u.	
MR (Calc.) (nD-d/2)	112.882	5	30 mm	1.0000	5	Dispersion	
Dielectric			BP	0.9072	5	Flash Point °C	
A 260 to	7.67356	5	t _e	0.8751	5	Fire Point	
B 452 °C	2640.8	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
C	166.	5	ΔHc kcal/m			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A* 260 to	2.48749	5	ΔHf				
B* 442 °C	2548.6	5	ΔFf				
K			Viscosity centistokes				
t _k to			η °C				
t _x °C							
A' to			B ^v to				
B' °C			A ^v °C				
C'			(B ^v) to				
A ⁺ to			(A ^v) °C				
B ⁺ °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	428.66	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluoropentacosane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₂₃ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₅ H ₅₁ F	Molecular Weight	370.658		
		Ref.			Ref.		
F.P. °C	60.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0665	5	h	
760 mm	395.	3	t _e	0.0341	5	f'	to
100	308.	5	30 mm	1.0092	5	g'	°K
30	269.	5	ΔHm cal/g			h'	
10	238.	5	ΔHv cal/g			m	to
1	185.	5	25°C			n	°K
Pressure mm 25°C			30 mm	51.94	5	o	
t _e	1731.9	5	BP	42.30	5	m'	to
Density g/ml 20°C	0.8401 ^a	3	t _e (d, e)	39.04	5	n'	°K
d ^t 25	0.8365 ^a	3	ΔHv/T _e	20.29	5	o'	
d ⁴ 30			d 269 to	72.39	5	Surface tension dynes/cm. 20°C	
a	0.8545	5	e 460 °C	0.0762	5	30	28.32
b	-0.03720	5	e' to °C			40	27.36
Ref. Index n _D 20°C	1.4470 ^a	3	d _c g/ml				26.43
25	1.4452 ^a	3	v _c ml/g			Parachor [P]	
30			t _c °C			20°C	
"C"	0.7049	4	P _c mm			30	
MR (Obs.)	117.884	4	PV/RT			40	
MR (Calc.)	117.500	5	25°C	1.0000	5	Sugd.	1017.8
Dielectric			30 mm	0.9057	5	Exp. L. l. %/wt. u.	
A 269 to	7.68172	5	BP	0.8729	5	Dispersion	
B 470 °C	2683.7	5	t _e			Flash Point °C	
C	164.	5	t _c			Fire Point	
A* 269 to	2.50932	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 460 °C	2591.7	5	ΔHf			Solubility in +	
K			ΔFf			Acetone	
c			Viscosity centistokes			Carbon tet.	
t _k to °C			η °C			Benzene	
t _x to °C			B ^v to °C			Ether	
A' to °C			A ^v to °C			n-Heptane	
C' to °C			(B ^v) to °C			Ethanol	
A'* to °C			(A ^v) to °C			Water	
B'* to °C			c _p liq. °K			Water in	
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A° const. B°							
t _e °C	440.	5					

^a For undercooled liquid below normal F.P. † grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 31

NAME		1-Fluorohexacosane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₂₄ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂₆ H ₅₃ F	Molecular Weight	384.684		
		Ref.				Ref.	Ref.
F. P. °C	59.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0673	5	h	
760 mm	404.	3	t _e	0.0341	5	f'	to
100	316.	5	30 mm	1.0212	5	g'	°K
30	276.	5	ΔHm cal/g			h'	
10	245.	5				m	to
1	192.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1752.2	5	30 mm	50.84	5	m'	to
Density g/ml 20°C			BP	41.30	5	n'	°K
t _e	0.8406 ^a	3	t _e (d, e)	38.02	5	o'	
d _t 25	0.8370 ^a	3	ΔHv/T _e	37.86	5		
d _t 30				20.22	5		
a	0.8550	5	d _e 276 to	71.40	5	Surface tension dynes/cm. 20°C	
b	-0.03720	5	e _t 470 °C	0.0745	5	γ	28.44 5
Ref. Index			d'			30	27.48 5
n _D 20°C	1.4481 ^a	3	e'			40	26.54 5
25	1.4463 ^a	3	d _e g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.7061	4	t _c °C			30	
MR (Obs.)	122.533	4	P _c mm			40	
MR (Calc.)	122.118	5	PV/RT			Sugd.	1056.8 5
(n _D -d/2)			25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A	7.68712	5	BP	0.9043	5	Flash Point °C	
B	2720.4	5	t _e	0.8706	5	Fire Point	
C	162.	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 276	2.52858	5	ΔHc kcal/m			Solubility in ⁺	
B* 470 °C	2628.8	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
t _k to °C			Viscosity centistokes			Benzene	
t _x to °C			η			Ether	
A' to °C						n-Heptane	
B' to °C			B _v to °C			Ethanol	
C' to °C			A _v to °C			Water	
A* to °C			(B _v) to °C			Water in	
B* to °C			(A _v) °C				
Ac _t to °C			c _p liq. °K				
Bc _t to °C			c _p vap. °K				
Cc _t to °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	450.21	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluoroheptacosane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₂₅ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₇ H ₅₅ F	Molecular Weight 398.710				
		Ref.			Ref.		
F. P. °C	65.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C	413.	3	BP	0.0680	5	h	
760 mm	324.	5	t _e	0.0342	5	f'	to
100	284.	5	t _e (d, e)			g'	°K
30	252.	5	ΔHm cal/g			h'	
10	198.	5	ΔHv cal/g			m	to
1			25°C			n	°K
Pressure mm 25°C			30 mm	49.77	5	o	
t _e	1772.5	5	BP	40.39	5	m'	to
Density g/ml 20°C	0.8411 ^a	3	t _e	37.10	5	n'	°K
d ₄ ^t 25	0.8376 ^a	3	t _e	36.95	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.17	5	Surface tension dynes/cm. 20°C	
a	0.8551	5	d 284 to	70.32	5	γ	28.56
b	-0.03700	5	e 480 °C	0.0725	5		30
Ref. Index n _D 20°C	1.4491 ^a	3	e' °C				40
25	1.4473 ^a	3	d c g/ml			Parachor [P]	
30			v c ml/g			20°C	
"C"	0.7072	4	t c °C			30	
MR (Obs.)	127.171	4	P c mm			40	
MR (Calc.) (n _D -d/2)	126.736	5	PV/RT 25°C			Sugd.	1095.8
Dielectric			30 mm	1.0000	5	Exp. L. l. %/wt. u.	
A 284 to	7.70111	5	BP	0.9028	5	Dispersion	
B 490 °C	2766.9	5	t _e	0.8685	5	Flash Point °C	
C	161.	5	t _c			Fire Point	
A* 284 to	2,555.44	5	ΔHc kcal/m			M Spec.	
B* 480 °C	2675.4	5	ΔHf			Ultra V.	
K			ΔFf			X-Ray Dif.	
t _x °C			Viscosity centistokes			Infrared	
A' °C			η °C			Solubility in +	
B' °C			B ^v to			Acetone	
C' °C			A ^v °C			Carbon tet.	
A ^{1*} to			(B ^v) to			Benzene	
B ^{1*} °C			(A ^v) °C			Ether	
Ac to			c _p liq. °K			n-Heptane	
Bc °C			c _p vap. °K			Ethanol	
Cc °C			c _v vap.			Water	
Cryos. A [*] const. B [*]						Water in	
t _e °C	460.41	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 33

NAME		1-Fluorooctacosane			STRUCTURAL FORMULA	
					$\text{CH}_2\text{F}(\text{CH}_2)_{26}\text{CH}_3$	
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{28}\text{H}_{57}\text{F}$	Molecular Weight 412.736			
F. P. °C	64.	3				
F. P. 100%						
B. P. °C						
760 mm	422.	3				
100	332.	5	0.0688	5		
30	291.	5	0.0342	5		
10	259.	5	1.0460	5		
1	205.	5				
Pressure mm 25°C						
t_e	1793.2	5				
Density g/ml 20°C	0.8416 ^a	3				
25	0.8381 ^a	3				
d_4^{25}						
a	0.8556	5				
b	-0.03700	5				
Ref. Index n_D 20°C	1.4501 ^a	3				
25	1.4482 ^a	3				
30						
"C"	0.7083	4				
MR (Obs.)	131.820	4				
MR (Calc.) (nD-d/2)	131.354	5				
Dielectric						
A 291 to	7.70618	5				
B 50 °C	2803.5	5				
C	159.	5				
A* 291 to	2.57288	5				
B* 491 °C	2712.4	5				
K						
t_k — to						
t_x — °C						
A' — to						
B' — °C						
C'						
A'* to						
B'* °C						
Ac — to						
Bc — °C						
Cc t_c —						
Cryos. A°						
consts. B°						
t_e °C	470.65	5				
		Ref.				
dt/dP °C/mm 25°C						
BP						
t_e 30 mm						
ΔH_m cal/g						
ΔH_v cal/g 25°C						
30 mm	48.82	5				
BP	39.53	5				
t_e	36.22	5				
t_e (d, e)	36.08	5				
$\Delta H_v/T_e$	20.10	5				
d 291 to	69.46	5				
e 491 °C	0.0709	5				
d' — to						
e' — °C						
d g/ml						
v ml/g						
t_c °C						
P_c mm						
PV/RT 25°C						
30 mm	1.0000	5				
BP	0.9016	5				
t_e	0.8665	5				
t_c						
ΔH_c kcal/m						
ΔH_f						
ΔF_f						
Viscosity centistokes η °C						
B ^v — to						
A ^v — °C						
(B ^v) — to						
(A ^v) — °C						
c_p liq. °K						
c_p vap. °K						
c_v vap.						
f — to						
g — °K						
h — to						
f' — to						
g' — °K						
h' — to						
m — to						
n — °K						
o — to						
m' — to						
n' — °K						
o' — to						
Surface tension dynes/cm. 20°C	28.67	5				
30	27.73	5				
40	26.81	5				
Parachor [P] 20°C						
30						
40						
Sugd.	1134.8	5				
Exp. L. l. %/wt. u.						
Dispersion						
Flash Point °C						
Fire Point						
M. Spec. Ultra V. X-Ray Dif. Infrared						
Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluorononacosane		STRUCTURAL FORMULA	
				CH ₂ F(CH ₂) ₂₇ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₂₉ H ₅₉ F	Molecular Weight	426.762
		Ref.			Ref.
F. P. °C	70.	3	dt/dP °C/mm		
F. P. 100%			25°C		
B. P. °C			BP	0.0695	5
760 mm	430.	3	t _e	0.0343	5
100	339.	5	30 mm	1.0565	5
30	298.	5	ΔHm cal/g		
10	265.	5	ΔHv cal/g		
1	211.	5	25°C		
Pressure mm 25°C			30 mm	47.86	5
t _e	1811.1	5	BP	38.67	5
Density g/ml 20°C	0.8420 ^a	3	t _e	35.34	5
d ₄ ^t 25	0.8385 ^a	3	t _e (d, e)	35.21	5
d ₄ ^t 30			ΔHv/T _e	20.03	5
a	0.8560	5	d 298 to	68.57	5
b	-0.03700	5	e 500 °C	0.0695	5
Ref. Index n _D 20°C	1.4510 ^a	3	d'		
25	1.4491 ^a	3	e'		
30			d _c g/ml		
"C"	0.7093	4	v _c ml/g		
MR (Obs.)	136.470	4	t _c °C		
MR (Calc.) (nD-d/2)	135.972	5	P _c mm		
Dielectric			PV/RT 25°C	1.0000	5
A 298 to	7.70869	5	30 mm	0.9004	5
B 1510 °C	2834.0	5	BP	0.8646	5
C	157.	5	t _e		
A* 298 to	2.58802	5	t _c		
B* 500 °C	2743.3	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to			Viscosity centistokes		
t _x °C			γ °C		
A' to			B ^v to		
A' °C			A ^v °C		
C'			(B ^v) to		
A'*			(A ^v) °C		
B'*			c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc					
Cryos. A* const. B*					
t _e °C	479.74	5			

^a For undercooled liquid below normal F. P.		⁺ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula			
SOURCE: MCA			
PURIFICATION: MCA			
LITERATURE REFERENCES: 3 MCA			

TABLE I. FLUOROALKANES

No. 35

NAME		1-Fluorotriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{F}(\text{CH}_2)_{28}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{30}\text{H}_{61}\text{F}$	Molecular Weight	440.788		
		Ref.			Ref.	Ref.	
F. P. °C	69.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C			h	
760 mm	438.	3	BP	0.0701	5		
100	347.	5	t _e	0.0343	5	f'	to
30	304.	5	30 mm	1.0677	5	g'	°K
10	272.	5				h'	
1	216.	5	ΔHm cal/g			m	to
Pressure mm 25°C			ΔHv cal/g			n	°K
t _e	1829.1	5	25°C			o	
Density g/ml 20°C	0.8425 ^a	3	30 mm	46.93	5		
t 25	0.8389 ^a	3	BP	37.85	5	m'	to
d 4 30			t _e (d, e)	34.49	5	n'	°K
			t _e	34.40	5	o'	
			ΔHv/T _e	19.95	5		
a	0.8569	5	d 304 to °C	67.61	5	Surface tension dynes/cm. 20°C	
b	-0.03720	5	e 509 to °C	0.0679	5	γ	28.87
			d'			30	27.90
Ref. Index n _D 20°C	1.4518 ^a	3	e'			40	26.95
25	1.4499 ^a	3				Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.7100	4	v _c ml/g			40	
MR (Obs.)	141.088	4	t _c °C			Sugd.	1212.8
MR (Calc.)	140.590	5	P _c mm			Exp. L. l. %/wt. u.	
(n _D -d/2)			PV/RT 25°C	1.0000	5	Dispersion	
Dielectric			30 mm	0.8992	5	Flash Point °C	
A 304 to	7.71961	5	BP	0.8628	5	Fire Point	
B 519 °C	2874.2	5	t _e			M. Spec. Ultra V. X-Ray Dif. Infrared	
C 156.		5	t _c			Solubility in ⁺	
A* 304 to	2.61068	5	ΔHc kcal/m			Acetone	
B* 509 °C	2783.7	5	ΔHf			Carbon tet.	
K			ΔFf			Benzene	
t _k to °C			Viscosity centistokes η			Ether	
t _x to °C						n-Heptane	
A' to °C						Ethanol	
B' to °C			B ^v to °C			Water	
C' to °C			A ^v to °C			Water in	
A'* to °C			(B ^v) to °C				
B'* to °C			(A ^v) to °C				
Ac _t to °C			c _p liq. °K				
Bc _t to °C			c _p vap. °K				
Cc _t to °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	488.83	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluorohentriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{F}(\text{CH}_2)_{29}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{31}\text{H}_{63}\text{F}$	Molecular Weight	454.814		
		Ref.			Ref.		
F.P. °C	74.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	to
B.P. °C			BP	0.0708	5	h	to
760 mm	446.	3	t _e	0.0344	5	f'	to
100	354.	5	30 mm	1.0782	5	g'	to
30	311.	5	ΔHm cal/g			h'	to
10	278.	5	ΔHv cal/g			m	to
1	222.	5	25°C			n	*K
Pressure mm 25°C			30 mm	46.09	5	o	to
t _e	1846.9	5	BP	37.10	5	m'	to
Density g/ml 20°C	0.8428 ^a	3	t _e (d, e)	33.73	5	n'	*K
d _t 25	0.8393 ^a	3	ΔHv/T _e	33.64	5	o'	to
d ₄ 30				19.90	5	Surface tension dynes/cm. 20°C	
a	0.8568	5	d 311 to	66.82	5	30	28.95
b	-0.03700	5	e 518 °C	0.0667	5	40	28.00
Ref. Index n _D 20°C	1.4526 ^a	3	d' to			40	27.08
25	1.4507 ^a	3	e' °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.7109	4	v _c ml/g			40	
MR (Obs.)	145.748	4	t _c °C			Sugd.	1251.8
MR (Calc.)	145.208	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 311 to	7.72195	5	30 mm	1.0000	5	Flash Point °C	
B 528 °C	2904.7	5	BP	0.8980	5	Fire Point	
C	154.	5	t _e	0.8609	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 311 to	2.62485	5	t _c			Solubility in +	
B* 518 °C	2814.7	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _x to			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' to						Ethanol	
B' to			B ^v to			Water	
C' to			A ^v °C			Water in	
A'* to °C			(B ^v)				
B'* to °C			(A ^v)				
Ac to			c _p liq. °				
Bc to			c _p vap. °K				
Cc t _c °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	497.93	5					
* For undercooled liquid below normal F.P.				+ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 37

NAME		1-Fluorodotriacontane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₃₀ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃₂ H ₆₅ F	Molecular Weight 468.840				
		Ref.			Ref.		Ref.
F.P. °C	73.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0715	5	h	
760 mm	454.	3	t _e	0.0345	5	f'	to
100	361.	5	t _e (d, e)	1.0895	5	g'	°K
30	318.	5	ΔHm cal/g			h'	
10	284.	5	ΔHv cal/g			m	to
1	228.	5	25°C			n	°K
Pressure mm 25°C			30 mm	45.26	5	o	
t _e	1864.7	5	BP	36.38	5	m'	to
Density g/ml 20°C	0.8432 ^a	3	t _e	33.00	5	n'	°K
d _t 25	0.8397 ^a	3	t _e	32.92	5	o'	
d ₄ 30			ΔHv/T _e	19.83	5		
a	0.8572	5	d 318 to	65.97	5	Surface tension dynes/cm. 20°C	
b	-0.03700	5	e 527 °C	0.0652	5	30	29.04
Ref. Index n _D 20°C	1.4533 ^a	3	d'			40	28.09
25	1.4514 ^a	3	e'				27.16
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.7116	4	v _c ml/g			30	
MR (Obs.)	150.373	4	t _c °C			40	
MR (Calc.)	149.826	5	P _c mm			Sugd.	1290.8
(nD-d/2)			PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 318 to	7.73253	5	BP	0.8968	5	Flash Point °C	
B 537 °C	2945.0	5	t _e	0.8590	5	Fire Point	
C	153.	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 318 to	2.64644	5	ΔHc kcal/m			Solubility in ⁺	
B* 527 °C	2855.2	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
t _k to			Viscosity centistokes η °C			Benzene	
t _x °C						Ether	
A' to			B _v to			n-Heptane	
B' °C			A _v °C			Ethanol	
C' °C			(B _v) to			Water	
A* to			(A _v) °C			Water in	
B* °C			c _p liq. °K				
Ac _t to			c _p vap. °K				
Bc _t °C			c _v vap.				
Cc _t °C							
Cryos. A° const. B°							
t _e °C	507.03	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluorotritriacontane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₃₁ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₃ H ₆₇ F	Molecular Weight	482.866		
		Ref.			Ref.		
F.P. °C	77.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°
B.P. °C			BP	0.0721	5	h	---
760 mm	461.	3	t _e	0.0345	5	f'	to
100	367.	5	t _e			g'	°
30	324.	5	30 mm	1.0985	5	h'	
10	290.	5	ΔHm cal/g			m	to
1	233.	5	25°C			n	°K
Pressure mm 25°C			30 mm	44.45	5	o	
t _e	1879.6	5	BP	35.65	5	m'	to
Density g/ml 20°C	0.8435 ^a	3	t _e	32.28	5	n'	°K
20	0.8401 ^a	3	t _e (d, e)	32.20	5	o'	
d ₄ ^t 25			ΔHv/T _e	19.78	5	Surface tension dynes/cm. 20°C	
30						30	29.12
a	0.8571	5	d 324 to	65.19	5	40	28.19
b	-0.03680	5	e 535 °C	0.0641	5		27.29
Ref. Index n _D 20°C	1.4540 ^a	3	d' °C			Parachor [P]	
25	1.4521 ^a	3	e' °C			20°C	
30			d _c g/ml			30	
"C"	0.7124	4	v _c ml/g			40	
MR (Obs.)	155.023	4	t _c °C			Sugd.	1329.8
MR (Calc.) (nD-d/2)	154.444	5	P _c mm			Exp. L.l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0000	5	Dispersion	
A 324 °C	7.73238	5	30 mm	0.8956	5	Flash Point °C	
B 545 °C	2969.2	5	BP	0.8572	5	Fire Point	
C	151.	5	t _e			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 324 °C	2.65807	5	t _c			Solubility in +	
B* 535 °C	2880.2	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _x to °C			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' to °C						Ethanol	
B' to °C			B ^v to °C			Water	
C' to °C			A ^v to °C			Water in	
A'*	to °C		(B ^v)				
B'*	°C		(A ^v)				
Ac to °C			c _p liq. °				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	514.98	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 39

NAME		1-Fluorotetraatriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{F}(\text{CH}_2)_{32}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{34}\text{H}_{69}\text{F}$	Molecular Weight	496.892		
		Ref.			Ref.		
F. P. °C	76.	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C			g	
B. P. °C			BP	0.0727	5	h	
760 mm	468.	3	t _e	0.0346	5	f'	to °K
100	373.	5	30 mm	1.1083	5	g'	
30	330.	5	ΔHm cal/g			h'	
10	296.	5	ΔHv cal/g			m	to °K
1	238.	5	25°C			n	
Pressure mm 25°C			30 mm	43.66	5	o	
t _e	1895.3	5	BP	34.96	5	m'	to °K
Density g/ml 20°C	0.8439 ^a	3	t _e	31.55	5	n'	to °K
25	0.8404 ^a	3	t _e (d, e)	31.51	5	o'	
d ₄ 30			ΔHv/T _e	19.70	5	Surface tension dynes/cm. 20°C	
a	0.8579	5	d 330 to	64.35	5	γ	29.21
b	-0.03700	5	e 543 °C	0.0628	5		30
Ref. Index n _D 20°C	1.4547 ^a	3	d' °C				28.25
25	1.4528 ^a	3	e' °C				27.32
30			d _c g/ml			Parachor [P]	
"C"	0.7131	4	v _c ml/g			20°C	
MR (Obs.)	159.663	4	t _c °C			30	
MR (Calc.) (nD-d/2)	159.062	5	P _c mm			40	
Dielectric			PV/RT 25°C			Sugd.	1368.8
A 330 to	7.74039	5	30 mm	1.0000	5	Exp. L. l. %/wt.	
B 553 °C	3003.2	5	BP	0.8946	5	u.	
C	150.	5	t _e	0.8557	5	Dispersion	
A* 330 to	2.67656	5	t _e			Flash Point °C	
B* 543 °C	2914.5	5	ΔHc kcal/m			Fire Point	
K			ΔHf			M. Spec.	
c			ΔFf			Ultra V.	
t _x to °C			Viscosity centistokes			X-Ray Dif.	
t _x °C			η °C			Infrared	
A' to °C			B ^v to °C			Solubility in ⁺	
B' °C			A ^v °C			Acetone	
C' °C			(B ^v) to °C			Carbon tet.	
A'* to °C			(A ^v) °C			Benzene	
B'* °C			c _p liq. °K			Ether	
Ac to °C			c _p vap. °K			n-Heptane	
Bc t _c °C			c _v vap. °K			Ethanol	
Cc °C						Water	
Cryos. A* consts. B*						Water in	
t _e °C	522.96	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluoropentatriacontane			STRUCTURAL FORMULA	
					CH ₂ F(CH ₂) ₃₅ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₃₅ H ₇₁ F	Molecular Weight	510.918	
		Ref.			Ref.	
F.P. °C	81.	3	dt/dP °C/mm			f to
F.P. 100%			25°C			g °K
B.P. °C			BP	0.0733	5	h
760 mm	475.	3	t _e	0.0346	5	f' to
100	379.	5	t _e (d, e)			g' °K
30	335.	5	ΔHm cal/g			h'
10	301.	5	ΔHv cal/g			m to
1	243.	5	25°C			n °K
Pressure mm 25°C			30 mm	42.91	5	o
t _e	1910.9	5	BP	34.32	5	m' to
Density g/ml 20°C			t _e	30.90	5	n' °K
d _t 25	0.8442 ^a	3	t _e (d, e)	30.87	5	o'
d ₄ 30	0.8407 ^a	3	ΔHv/T _e	19.63	5	
a	0.8582	5	d 335 to	63.53	5	Surface tension dynes/cm. 20°C
b	-0.03700	5	e 551 °C	0.0615	5	30
Ref. Index n _D 20°C			d' to			40
25	1.4553 ^a	3	e' °C			29.28
30	1.4534 ^a	3				28.32
"C"	0.7137	4	d c g/ml			27.38
MR (Obs.)	164.298	4	v c ml/g			Parachor [P] 20°C
MR (Calc.) (nD-d/2)	163.680	5	t c °C			30
Dielectric			P c mm			40
A 335 to	7.74827	5	PV/RT 25°C			Sugd. 1407.8
B 561 °C	3037.3	5	30 mm	1.0000	5	Exp. L.l. %/wt. u.
C	149.	5	BP	0.8937	5	Dispersion
A* 335 to	2.69461	5	t _e	0.8542	5	Flash Point °C
B* 551 °C	2948.7	5	t _c			Fire Point
K			ΔHc kcal/m			M Spec.
c			ΔHf			Ultra V.
t _k to			ΔFf			X-Ray Dif.
t _x °C			Viscosity centistokes °C			Infrared
A' to			η			Solubility in +
B' °C						.Acetone
C' °C			B ^v to			Carbon tet.
A* to °C			A ^v °C			Benzene
B* to °C			(B ^v) to			Ether
A _c to			(A ^v) °C			n-Heptane
B _c °C			c _p liq. °K			Ethanol
C _c °C			c _p vap. °K			Water
Cryos. A° const. B°			c _v vap.			Water in
t _e °C	530.94	5				

^a For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 41

NAME		1-Fluorohexatriacontane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₃₄ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₆ H ₇₃ F	Molecular Weight	524.944		
		Ref.			Ref.		
F. P. °C	80.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0738	5	h	
760 mm	482.	3	t _e	0.0347	5	f'	to
100	386.	5	t _e 30 mm	1.1274	5	g'	°K
30	341.	5	ΔHm cal/g			h'	
10	307.	5	ΔHv cal/g			m	to
1	248.	5	25°C			n	°K
Pressure mm 25°C			30 mm	42.21	5	o	
t _e	1925.7	5	BP	33.69	5	m'	to
Density g/ml 20°C	0.8445 ^a	3	t _e	30.26	5	n'	°K
d ^t 25	0.8410 ^a	3	t _e (d, e)	30.25	5	o'	
d ^t 30			ΔHv/T _e	19.56	5	Surface tension dynes/cm. 20°C	
a	0.8585	5	d 341 to	62.86	5	γ	29.35
b	-0.03700	5	e 559	0.0605	5		30
Ref. Index			d'				40
n _D 20°C	1.4559 ^a	3	e'			Parachor [P]	
25	1.4540 ^a	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.7144	4	t _c °C			40	
MR (Obs.)	168.941	4	P _c mm			Sugd.	1446.8
MR (Calc.)	168.298	5	PV/RT			Exp. L. l. %/wt.	
(nD-d/2)			25°C			u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 341 to	7.75201	5	BP	0.8925	5	Flash Point °C	
B 562 °C	3066.4	5	t _e	0.8523	5	Fire Point	
C	148.	5	t _e			M. Spec.	
A* 341 to	2.70899	5	ΔHc kcal/m			Ultra V.	
B* 559 °C	2978.6	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
c			Viscosity centistokes			Solubility in ⁺	
t _k to			η			Acetone	
t _x °C						Carbon tet.	
A' to						Benzene	
B' °C						Ether	
C'						n-Heptane	
A'* to			B ^v to			Ethanol	
B'* °C			A ^v °C			Water	
Ac to			(B ^v) to			Water in	
Bc t _c °C			(A ^v) °C				
Cc			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	538.90	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluoroheptatriacontane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₃₅ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₇ H ₇₅ F	Molecular Weight	538.970		
		Ref.			Ref.	Ref.	
F.P. °C	84.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C	489.	3	BP	0.0744	5	h	
760 mm	392.	5	t _e	0.0347	5	f'	to
100	347.	5	t _e (d, e)	29.69	5	g'	°K
30	312.	5	ΔHm cal/g	1.1368	5	h'	
10	253.	5	ΔHv cal/g			m	to
1			25°C			n	°K
Pressure mm	1941.1	5	30 mm	41.56	5	o	
t _e			BP	33.12	5	m'	to
Density g/ml	0.8447 ^a	3	t _e	29.69	5	n'	°K
20°C	0.8413 ^a	3	t _e (d, e)	29.68	5	o'	
d ^t 25			ΔHv/T _e	19.51	5	Surface tension dynes/cm. 20°C	
d ⁴ 30			d 347 to	62.18	5	30	29.40
a	0.8583	5	e 567 to	0.0594	5	40	28.47
b	-0.03680	5	d' to			40	27.55
Ref. Index			e' °C			Parachor [P]	
n _D 20°C	1.4564 ^a	3	d c g/ml			20°C	
25	1.4545 ^a	3	v c ml/g			30	
30			t c °C			40	
"C"	0.7149	4	P c mm			Sugd.	1485.8
MR (Obs.)	173.578	4	PV/RT			Exp. L. l. %/wt.	
MR (Calc.)	172.916	5	25°C			u.	
(n _D -d/2)			30 mm	1.0000	5	Dispersion	
Dielectric			BP	0.8915	5	Flash Point °C	
A 347 to	7.75569	5	t _e	0.8508	5	Fire Point	
B 577 °C	3095.5	5	t _c			M Spec.	
C	146.	5	ΔHc kcal/m			Ultra V.	
A* 347 to	2.72250	5	ΔHf			X-Ray Dif.	
B* 567 °C	3008.1	5	ΔFf			Infrared	
K			Viscosity centistokes			Solubility in +	
c			η °C			Acetone	
t _k to						Carbon tet.	
t _x °C						Benzene	
A' to			B ^v to			Ether	
B' °C			A ^v °C			n-Heptane	
C'			(B ^v) to			Ethanol	
A'* to			(A ^v) °C			Water	
B'* °C			c _p liq. °K			Water in	
Ac to			c _p vap. °K				
Bc °C			c _v vap.				
Cc °C							
Cryos. A* consts. B*							
t _e °C	546.88	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 43

NAME		1-Fluorooctatriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{F}(\text{CH}_2)_{36}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{38}\text{H}_{77}\text{F}$	Molecular Weight 552.996				
		Ref.					Ref.
F. P. °C	82.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0749	5	h	
760 mm	495.	3	t _e	0.0347	5	f'	to
100	397.	5	t _e (d, e)	29.04	5	g'	°K
30	352.	5	ΔHm cal/g			h'	
10	317.	5				m	to
1	257.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			30 mm	40.86	5	o	
t _e	1954.0	5	BP	32.51	5	m'	to
Density g/ml 20°C	0.8450 ^a	3	t _e	29.04	5	n'	°K
25	0.8415 ^a	3	t _e (d, e)	29.07	5	o'	
d ₄ ^t 30			ΔHv/T _e	19.42	5	Surface tension dynes/cm. 20°C	
a	0.8590	5	d 352 to	61.44	5	30	29.47
b	-0.03700	5	e' 574 °C	0.0584	5	40	28.51
Ref. Index			d' °C			40	27.57
n _D 20°C	1.4569 ^a	3	e' °C			Parachor [P]	
25	1.4550 ^a	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.7154	4	t _c °C			40	
MR (Obs.)	178.200	4	P _c mm			Sugd.	1524.8
MR (Calc.)	177.534	5	PV/RT			Exp. L. l. %/wt.	
(nD-d/2)			25°C			u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 352 to	7.76105	5	BP	0.8905	5	Flash Point °C	
B 584 °C	3123.4	5	t _e	0.8493	5	Fire Point	
C 145.		5	t _e			M. Spec.	
A* 352 to	2.73786	5	ΔHc kcal/m			Ultra V.	
B* 574 °C	3036.4	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
c			Viscosity centistokes			Solubility in [†]	
t _k to			η °C			Acetone	
t _x to						Carbon tet.	
A' to						Benzene	
B' to						Ether	
C' to						n-Heptane	
A'* to			B ^v to			Ethanol	
B'* °C			A ^v to			Water	
Ac to			(B ^v) to			Water in	
Bc to			(A ^v) °C				
Cc t _c °C			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _g °C	553.71	5					

^a For undercooled liquid below normal F. P.[†] grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Fluorononatriacontane			STRUCTURAL FORMULA		
					CH ₂ F(CH ₂) ₃₇ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₉ H ₇₉ F	Molecular Weight	567.022		
		Ref.			Ref.		
F.P. °C	86.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	to
B.P. °C			BP	0.0755	5	h	to
760 mm	502.	3	t _e	0.0348	5	f'	to
100	403.	5	30 mm	1.1548	5	g'	to
30	358.	5	ΔHm cal/g			h'	to
10	322.	5	ΔHv cal/g			m	to
1	262.	5	25°C			n	*K
Pressure mm 25°C			30 mm	40.25	5	o	to
t _e	1969.4	5	BP	31.99	5	m'	to
Density g/ml 20°C	0.8452 ^a	3	t _e (d, e)	28.54	5	n'	*K
25	0.8418 ^a	3	ΔHv/T _e	28.57	5	o'	to
d ₄ ^t 30				19.38	5	Surface tension dynes/cm. 20°C	
a	0.8588	5	d 358 to	60.77	5	30	29.52
b	-0.03680	5	e 582 °C	0.0573	5	30	28.58
Ref. Index n _D 20°C	1.4574 ^a	3	d' °C			40	27.67
25	1.4555 ^a	3	e' °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.7160	4	v _c ml/g			40	
MR (Obs.)	182.849	4	t _c °C			Sugd.	1563.8
MR (Calc.) (nD-d/2)	182.152	5	P _c mm			Exp. L.l. %/wt. u. Dispersion	
Dielectric			PV/RT 25°C	1.0000	5	Flash Point °C	
A 358 to	7.76853	5	30 mm	0.8896	5	Fire Point	
B 522 °C	3157.5	5	BP	0.8478	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	144.	5	t _e			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A* 358 to	2.75446	5	ΔHc kcal/m				
B* 582 °C	3070.8	5	ΔHf				
K			ΔFf				
c			Viscosity centistokes				
t _x °C			η °C				
A' °C			B ^v to °C				
B' °C			A ^v °C				
C' °C			(B ^v)				
A ¹ * to			(A ^v)				
B ¹ * °C			c _p liq. °				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A ¹ const. B ¹							
t _e °C	561.70	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 45

NAME		1-Fluorotetracontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{F}(\text{CH}_2)_{38}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{40}\text{H}_{81}\text{F}$	Molecular Weight 581.048				
		Ref.					Ref.
F. P. °C	85.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0760	5	h	
760 mm	508.	3	t _e	0.0348	5	f'	to
100	409.	5	30 mm	1.1634	5	g'	°K
30	363.	5	ΔHm cal/g			h'	
10	327.	5				m	to
1	267.	5	ΔHv cal/g			n	°K
Pressure mm			25°C			o	
25°C			30 mm	39.61	5		
t _e	1984.3	5	BP	31.46	5	m'	to
Density g/ml			t _e	27.97	5	n'	°K
20°C	0.8455 ^a	3	t _e (d, e)	28.06	5	o'	
t	0.8420 ^a	3	ΔHv/T _e	19.31	5		
d ₄							
30			d 363 to	59.98	5	Surface tension dynes/cm. 20°C	
a	0.8595	5	e 589	0.0561	5	γ	29.59
b	-0.03700	5	d'				30
Ref. Index			e'				40
n _D							27.68
20°C	1.4579 ^a	3	d _c g/ml			Parachor [F]	
25	1.4560 ^a	3	v _c ml/g				20°C
30			t _c °C				30
"C"	0.7165	4	P _c mm				40
MR (Obs.)	187.482	4					Sugd. 1602.8
MR (Calc.)	186.770	5	PV/RT			Exp. L. l. %/wt. u.	
(nD-d/2)			25°C			Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 363 to	7.77763	5	BP	0.8894	5	Fire Point	
B 599 °C	3190.3	5	t _e	0.8473	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
C	144.	5	t _c			Solubility in ⁺	
A* 363 to	2.77125	5	ΔHc kcal/m			Acetone	
B* 589 °C	3103.1	5	ΔHf			Carbon tet.	
K			ΔFf			Benzene	
t _k to			Viscosity centistokes			Ether	
t _x °C			η			n-Heptane	
A' to						Ethanol	
B' °C			B ^v to			Water	
C' °C			A ^v °C			Water in	
A* to			(B ^v) to				
B* °C			(A ^v) °C				
Ac to			c _p liq. °K				
Bc °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	568.61	5					

^aFor undercooled liquid below normal F.P.⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Difluoromethane			STRUCTURAL FORMULA		
					CH ₂ F ₂		
Mole % Pur.	Ref. 3	Molecular Formula	CH ₂ F ₂	Molecular Weight	52.026		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0040	5	g	°K
B. P. °C			BP	0.0279	5	h	
760 mm	-51.6	3	t _e	0.0342	5	f'	to
100	-86.9	5				g'	°K
30	-102.5	5	30 mm	0.3897	5	h'	
10	-114.3	5	ΔHm cal/g			m	to
1	-133.8	5	ΔHv cal/g			n	°K
Pressure mm 25°C	10215.1	5	25°C	69.41	5	o	
t _e	587.2	5	30 mm	95.10	5		
Density g/ml 20°C	0.909 ^a	3	BP	85.48	5	m'	to
25	0.896 ^a	3	t _e	86.51	5	n'	°K
d ₄ ^t			t _e (d, e)	86.49	5	o'	
			ΔHv/T _e	20.82	5		
a	0.9760	5	d	-103 to	5	Surface tension dynes/cm. 20°C	
b	-0.00188	5	e	-37 °C	5	30	5.46
Ref. Index n _D 20°C	1.19 ^a	3	d'	to		40	4.67
25	1.19 ^a	3	e'	°C			3.92
30			d				
"C"	0.2879	4	e				
MR (Obs.)	6.972	4	d				
MR (Calc.) (nD-d/2)	6.826	5	e				
Dielectric			d				
A -103 to	6.9180	3	e				
B -27°C	797.0	3	d				
C	249.0	3	e				
A* -103 to	1.2184	5	d				
B* -37°C	740.0	5	e				
K			d				
c			e				
t _k to			d				
t _x °C			e				
A' to			d				
B' °C			e				
C'			d				
A'*	to		e				
B'*	°C		d				
Ac to			e				
Bc °C			d				
Cc °C			e				
Cryos. A' const. B'			d				
t _e °C	-56.92	5	e				

^a For the liquid at saturation pressure ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 47

NAME	1, 1-Difluoroethane			STRUCTURAL FORMULA	
	CHF ₂ CH ₃				
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₄ F ₂	Molecular Weight 66.052		
		Ref.			Ref.
F. P. °C	-117.	3	dt/dP °C/mm		
F. P. 100%			25°C	0.0078	5
B. P. °C			BP	0.0302	5
760 mm	-24.7	3	t _e	0.0337	5
100	-63.1	5	30 mm	0.4272	5
30	-80.1	5	ΔHm cal/g		
10	-93.1	5	ΔHv cal/g		
1	-114.6	5	25°C	69.05	5
Pressure mm 25°C	4437.1	5	30 mm	87.45	5
t _e	662.3	5	BP	78.03	5
Density g/ml 20°C	0.95 ^a	3	t _e	78.52	5
t 25	0.95 ^a	3	t _e (d, e)	78.55	
d ₄ 30			ΔHv/T _e	21.14	5
a	0.9562	5	d -80 to	73.83	5
b	0.03446	5	e -8 to	0.1700	5
Ref. Index n _D 20°C	1.26 ^a	3	d' to		
25	1.26 ^a	3	e' to		
30			d _c g/ml		
"C"	0.3726	4	v _c ml/g		
MR (Obs.)	11.388	4	t _c °C		
MR (Calc.)	11.444	5	P _c mm		
Dielectric			PV/RT		
A -80 to	7.030	3	25°C	0.9083	5
B 2 °C	910.0	3	30 mm	1.0000	5
C	244.0	3	BP	0.9679	5
A* -80 to	1.393	5	t _e	0.9702	5
B* -8 °C	848.4	5	t _c		
K			ΔHc kcal/m		
t _k to			ΔHf		
t _x °C			ΔFf		
A' to			Viscosity centistokes		
B' °C			η °C		
C' °C			B ^v to		
A'* to			A ^v °C		
B'* °C			(B ^v) to		
Ac to			(A ^v) °C		
Bc t _c °C			c _p liq. °K		
Cc t _c °C			c _p vap. °K		
Cryos. A°			c _v vap.		
const. B°					
t _e °C	-27.79	5			
^a For the liquid at saturation pressure			⁺ grams/100 grams solvent		
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		1, 1-Difluoropropane			STRUCTURAL FORMULA				
					CHF ₂ CH ₂ CH ₃				
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₆ F ₂	Molecular Weight	80.078				
		Ref.			Ref.				
F. P. °C				dt/dP °C/mm			f to		
F. P. 100%				25°C	0.0208	5	g °K		
B. P. °C				BP	0.0338	5	h to		
760 mm	7.5	3		t _e	0.0341	5	f' to		
100	-35.0	5		30 mm	0.4787	5	g' °K		
30	-54.1	5		ΔHm cal/g			h' to		
10	-68.6	5		ΔHv cal/g			m to		
1	-92.7	5		25°C	70.47	5	n °K		
Pressure mm 25°C	1410.2	5		30 mm	82.92	5	o to		
t _e	752.0	5		BP	74.44	5	m' to		
Density g/ml 20°C	0.94 ^a	3		t _e	73.21	5	n' to		
d ^t 25	0.94 ^a	3		t _e (d, e)	74.40	5	o' °K		
d ^t 30				ΔHv/T _e	20.87	5			
a	0.9416	5		d -54 to	75.47	5	Surface tension dynes/cm. 20°C		
b	0.03193	5		e 28 °C	0.1377	5	γ	14.92	5
Ref. Index n _D 20°C	1.30 ^a	3		d' to			30	14.78	5
25	1.30 ^a	3		e' °C			40	14.57	5
30				d c g/ml			Parachor [P]		
"C"	0.4318	4		v c ml/g			20°C		
MR (Obs.)	15.930	4		t c °C			30		
MR (Calc.)	16.062	5		P c mm			40		
Dielectric				PV/RT			Sugd.	168.4	5
A -54 to	7.039	3		25°C	0.9445	5	Exp. L. l. %/wt. u.		
B 38 °C	1023.	3		30 mm	1.0000	5	Dispersion		
C	238.	3		BP	0.9823	5	Flash Point °C		
A* -54 to	1.444	5		t _e	0.9623	5	Fire Point		
B* 28 °C	956.	5		t _c			M Spec. Ultra V. X-Ray Dif. Infrared		
K				ΔHc kcal/m			Solubility in +		
t _k to				ΔHf			Acetone		
t _x °C				ΔFf			Carbon tet.		
A' to				Viscosity centistokes			Benzene		
B' °C				η °C			Ether		
C'				B ^v to			n-Heptane		
A'* to				A ^v °C			Ethanol		
B'* °C				(B ^v) to			Water		
Ac to				(A ^v) °C			Water in		
Bc t _c °C				c _p liq. °K					
Cc				c _p vap. °K					
Cryos. A* consts. B*				c _v vap.					
t _e °C	7.75	5							
^a For the liquid at saturation pressure				⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

TABLE I. FLUOROALKANES

No. 49

NAME		1, 1-Difluorobutane			STRUCTURAL FORMULA			
					CHF ₂ (CH ₂) ₂ CH ₃			
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₈ F ₂	Molecular Weight 94.104					
		Ref.			Ref.			
F. P. °C			dt/dP °C/mm		f	to		
F. P. 100%			25°C	0.0602	g	°K		
B. P. °C			BP	0.0372	h			
760 mm	41.	3	t _e	0.0343	g'	to		
100	-6.	5	30 mm	0.5282	h'	°K		
30	-27.	5	ΔHm cal/g		m	to		
10	-43.	5	ΔHv cal/g		n	°K		
1	-70.	5	25°C	72.60	o			
Pressure mm 25°C	416.4	5	30 mm	80.46				
t _e	841.9	5	BP	70.27	m'	to		
Density g/ml 20°C	0.92	3	t _e (d, e)	69.80	n'	°K		
t 25	0.92	3	ΔHv/T _e	69.83	o'			
d ₄ 30				20.71				
a	0.9203	5	d -27 to	76.38		Surface tension dynes/cm. 20°C	16.77	5
b	0.0475	5	e 64 °C	0.1490		30	16.71	5
Ref. Index n _D 20°C	1.32	3	d'			40	16.61	5
25	1.32	3	e'			Parachor [P] 20°C		
30			d _c g/ml			30		
"C"	0.4692	4	v _c ml/g			40		
MR (Obs.)	20.291	4	t _c °C			Sugd.	207.4	5
MR (Calc.) (nD-d/2)	20.680	5	P _c mm			Exp. L. l. %/wt. u.		
Dielectric			PV/RT 25°C	0.9713	5	Dispersion		
A -27 to	7.057	3	30 mm	1.0000	5	Flash Point °C		
B 74 °C	1136.	3	BP	0.9577	5	Fire Point		
C	231.	3	t _e	0.9543	5	M. Spec. Ultra V.		
A* -27 to	1.497	5	t _c			X-Ray Dif.		
B* 64 °C	1065.	5	ΔHc kcal/m			Infrared		
K			ΔHf			Solubility in +		
c			ΔFf			Acetone		
t _k to			Viscosity centistokes			Carbon tet.		
t _x °C			η °C			Benzene		
A' to						Ether		
B' °C			B ^v to			n-Heptane		
C' °C			A ^v °C			Ethanol		
A'* to			(B ^v) to			Water		
B'* °C			(A ^v) °C			Water in		
Ac to			c _p liq. °K					
Bc t _c °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	43.95	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1, 1-Difluoropentane			STRUCTURAL FORMULA		
					CHF ₂ (CH ₂) ₃ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₀ F ₂	Molecular Weight	108.130		
		Ref.			Ref.	Ref.	
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	0.1589	5	g	°K
B. P. °C	69.	3	BP	0.0399	5	h	
760 mm	18.	5	t _e	0.0344	5	f'	to
100	-5.	5	30 mm	0.5698	5	g'	°K
30	-22.	5	ΔHm cal/g			h'	
10	-51.	5	ΔHv cal/g			m	to
1			25°C	73.32	5	n	°K
Pressure mm 25°C	138.3	5	30 mm	77.50	5	o	
t _e	917.4	5	BP	67.25	5	m'	to
Density g/ml 20°C	0.90	3	t _e	66.44	5	n'	°K
d ^t 25	0.90	3	t _e (d, e)	66.44	5	o'	
d ₄ 30			ΔHv/T _e	20.64	5	Surface tension dynes/cm. 20°C	
a	0.9000	5	d -5 to	76.86	5	30	17.64
b	0.0432	5	e 95 °C	0.1393	5	40	17.61
Ref. Index			d' to				17.56
n _D 20°C	1.34	3	e' °C			Parachor [P]	
25	1.34	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.5080	4	t _c °C			40	
MR (Obs.)	25.184	4	P _c mm			Sugd.	246.4
MR (Calc.)	25.298	5	PV/RT			Exp. L. l. %/wt. u.	
(n _D -d/2)			25°C	0.9872	5	Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A -5 to	7.101	3	BP	0.9532	5	Fire Point	
B 105 °C	1245.	3	t _e	0.9476	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	226.	3	t _c			Solubility in +	
A* -5 to	1.573	5	ΔHc kcal/m			Acetone	
B* 95 °C	1170.	5	ΔHf			Carbon tet.	
K			ΔFf			Benzene	
c			Viscosity centistokes			Ether	
t _k to			η °C			n-Heptane	
t _x °C			B ^v to			Ethanol	
A' to			A ^v °C			Water	
B' °C			(B ^v) to			Water in	
C' °C			(A ^v) °C				
A* to			c _p liq. °K				
B* °C			c _p vap. °K				
Ac to			c _v vap.				
Bc t _c °C							
Cc °C							
Cryos. A ^o consts. B ^o							
t _e °C	74.84	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 51

NAME		1, 1-Difluorohexane			STRUCTURAL FORMULA		
					CHF ₂ (CH ₂) ₄ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₆ H ₁₂ F ₂	Molecular Weight 122.156				
		Ref.		Ref.			Ref.
F.P. °C			dt/dP °C/mm		f	to	
F.P. 100%			25°C		g	to °K	
B.P. °C			BP	0.4230	5		
760 mm	95.	3	t _e	0.0422	5		
100	41.	5	t _e (d, e)	0.0343	5	f'	to °K
30	17.	5	ΔHm cal/g	0.6061	5	g'	to °K
10	-1.	5				h'	
1	-32.	5	ΔHv cal/g			m	to °K
Pressure mm 25°C	45.92	5	25°C	74.22	5	n	
t _e	987.3	5	30 mm	75.31	5	o	
Density g/ml 20°C	0.90	3	BP	65.05	5	m'	to °K
d _t 25	0.90	3	t _e	63.90	5	n'	to °K
d ₄ 30			t _e (d, e)	63.92	5	o'	
			ΔHv/T _e	20.72	5		
a	0.9000	5	d 17 to °C	77.54	5	Surface tension dynes/cm. 20°C 19.53 5	
b	0.0413	5	d' 124 to °C	0.1315	5	30	19.51 5
Ref. Index n _D 20°C	1.36	3	e'			40	19.49 5
25	1.36	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.5364	4	t _c °C			40	
MR (Obs.)	29.955	4	P _c mm			Sugd.	285.4 5
MR (Calc.) (nD-d/2)	29.916	5	PV/RT			Exp. L.l. %/wt. u.	
Dielectric			25°C	0.9973	5	Dispersion	
A 17 to °C	7.162	3	30 mm	1.0000	5	Flash Point °C	
B 134 °C	1353.	3	BP	0.9504	5	Fire Point	
C	221.	3	t _e	0.9417	5	M. Spec. Ultra V.	
A* 17 to °C	1.664	5	t _c			X-Ray Dif.	
B* 124 °C	1275.	5	ΔHc kcal/m			Infrared	
K			ΔHf			Solubility in ⁺	
c			ΔFf			Acetone	
t _k to °C			Viscosity centistokes η °C			Carbon tet.	
t _x to °C						Benzene	
A' to °C						Ether	
B' to °C						n-Heptane	
C' to °C						Ethanol	
A* to °C						Water	
B* to °C						Water in	
Ac to °C							
Bc t _c to °C							
Cc t _c to °C							
Cryos. A° const. B°							
t _e °C	103.65	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1-Difluoroheptane			STRUCTURAL FORMULA		
					CHF ₂ (CH ₂) ₅ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₇ H ₁₄ F ₂	Molecular Weight	136.182		
		Ref.			Ref.	Ref.	
F. P. °C	-82.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	1.158	5	g	°K
B. P. °C		3	BP	0.0442	5	h	
760 mm	119.7	5	t _e	0.0341	5	f'	to
100	63.1	5	t _e 30 mm	0.6391	5	g'	°K
30	37.7	5	ΔHm cal/g			h'	
10	18.3	5	ΔHv cal/g			m	to
1	-14.2	5	25°C	75.21	5	n	°K
Pressure mm 25°C	14.94	5	30 mm	73.53	5	o	
t _e	1052.5	5	BP	63.09	5	m'	to
Density g/ml 20°C	0.8959	3	t _e	61.72	5	n'	°K
d ₄ ^t 25	0.8910	3	t _e (d, e)	61.66	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.80	5	Surface tension dynes/cm. 20°C	
a	0.9155	5	d 38 to	78.33	5	γ	20.74
b	-0.03975	5	e 151 °C	0.1273	5		19.84
Ref. Index n _D 20°C	1.3710	3	d' to				18.96
25	1.3690	3	e' °C			Parachor [P] 20°C	
30			d _c g/ml				30
"C"	0.5544	4	v _c ml/g				40
MR (Obs.)	34.465	4	t _c °C				40
MR (Calc.) (nD-d/2)	34.534	5	P _c mm			Sugd.	324.4
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 38 to	7.224	3	25°C	1.0032	5	Dispersion	
B 161 °C	1458.	3	30 mm	1.0000	5	Flash Point °C	
C	216.	3	BP	0.9458	5	Fire Point	
A* 38 to	1.753	5	t _e	0.9360	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 151 °C	1378.	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			ΔHc kcal/m				
t _x to			ΔHf				
t _x °C			ΔFf				
A' to			Viscosity centistokes				
B' to			η °C				
C' °C			B ^v to				
A' * to			A ^v °C				
B' * °C			(B ^v) to				
Ac to			(A ^v) °C				
Bc t _c °C			c _p liq. °K				
Cc °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	131.00	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 53

NAME		1, 1-Difluorooctane			STRUCTURAL FORMULA		
					CHF ₂ (CH ₂) ₆ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₈ H ₁₆ F ₂	Molecular Weight 150. 208				
		Ref.					Ref.
F. P. °C			dt/dP °C/mm		f	to	
F. P. 100%			25°C	3.073	g	°K	
B. P. °C			BP	0.0459	h		
760 mm	142.	3	t _e	0.0339	f'	to	
100	83.	5	30 mm	0.6691	g'	°K	
30	56.	5	ΔHm cal/g		h'		
10	36.	5	ΔHv cal/g		m	to	
1	2.	5	25°C	75.60	n	°K	
Pressure mm 25°C	5.09	5	30 mm	71.58	o		
t _e	1111.1	5	BP	61.22			
Density g/ml 20°C	0.89	3	t _e	59.69	m'	to	
t	0.89	3	t _e (d, e)	59.56	n'	°K	
d ₄ 30			ΔHv/T _e	20.90	o'		
a	0.8900	5	d 56 to	78.40	Surface tension dynes/cm. 20°C		
b	0.052	5	e 176 °C	0.1210	γ	21.49	5
Ref. Index n _D 20°C	1.38	3	d'		30	21.49	5
25	1.38	3	e'		40	21.48	5
30			d _c g/ml		Parachor [F]		
"C"	0.5709	4	v _c ml/g		20°C		
MR (Obs.)	39.094	4	t _c °C		30		
MR (Calc.)	39.152	5	P _c mm		40		
Dielectric			PV/RT		Sugd.	363.4	5
A 56 to	7.285	3	25°C	1.0060	Exp. L. l. %/wt. u.		
B 186 °C	1559.	3	30 mm	1.0000	Dispersion		
C	212.	3	BP	0.9422	Flash Point °C		
A* 56 to	1.840	5	t _e	0.9311	Fire Point		
B* 176 °C	1476.	5	t _c		M. Spec. Ultra V. X-Ray Dif. Infrared		
K			ΔHc kcal/m		Solubility in ⁺		
t _k to °C			ΔHf		Acetone		
t _x to °C			ΔFf		Carbon tet.		
A' to °C			Viscosity centistokes η °C		Benzene		
B' to °C			B ^v to °C		Ether		
C' to °C			A ^v to °C		n-Heptane		
A'* to °C			(B ^v) to °C		Ethanol		
B'* to °C			(A ^v) °C		Water		
Ac to °C			c _p liq. °K		Water in		
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap. °K				
Cryos. A° const. B°							
t _e °C	155.75	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1-Difluorononane			STRUCTURAL FORMULA		
					CHF ₂ (CH ₂) ₇ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₉ H ₁₈ F ₂	Molecular Weight	164.234		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	8.275	5	g	°K
B. P. °C			BP	0.0475	5	h	
760 mm	163.	3	t _e	0.0337	5	f'	to
100	102.	5	t _e (d, e)	0.6962	5	g'	°K
30	74.	5	ΔHm cal/g			h'	
10	53.	5	ΔHv cal/g			m	to
1	18.	5	25°C	76.09	5	n	°K
			30 mm	69.92	5	o	
Pressure mm 25°C	1.72	5	BP	59.66	5	m'	to
t _e	1165.9	5	t _e	57.90	5	n'	°K
Density g/ml 20°C	0.89	3	t _e (d, e)	57.79	5	o'	
25	0.89	3	ΔHv/T _e	21.03	5	Surface tension dynes/cm. 20°C	
d ₄ ^t 30						30	22.61
a	0.8900	5	d 74 to	78.51	5	40	22.61
b	0.051	5	e 199 °C	0.1157	5		
Ref. Index			d' to			Parachor [P]	
n _D 20°C	1.39	3	e' °C			20°C	
25	1.39	3				30	
30			d			40	
"C"	0.5851	4	v			Sugd.	402.4
MR (Obs.)	43.743	4	c			Exp. L. l. %/wt.	
MR (Calc.)	43.770	5	v _c			u.	
(n _D -d/2)			t _c			Dispersion	
Dielectric			P _c mm			Flash Point °C	
A 74 to	7.347	3	PV/RT			Fire Point	
B 120 °C	1657.	3	25°C	1.0066	5	M Spec.	
C	208.	3	30 mm	1.0000	5	Ultra V.	
A* 74 to	1.926	5	BP	0.9402	5	X-Ray Dif.	
B* 192 °C	1572.	5	t _e	0.9265	5	Infrared	
K			t _c			Solubility in +	
c			ΔHc kcal/m			Acetone	
t _k to			ΔHf			Carbon tet.	
t _x °C			ΔFf			Benzene	
A' to			Viscosity centistokes			Ether	
B' °C			η °C			n-Heptane	
C' °C			B ^v to			Ethanol	
A'*	to		A ^v °C			Water	
B'*	°C		(B ^v) to			Water in	
Ac to			(A ^v) °C				
Bc t _c °C			c _p liq. °K				
Cc °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	179.12	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE I. FLUOROALKANES

No. 55

NAME	1, 1-Difluorodecane			STRUCTURAL FORMULA				
	CHF ₂ (CH ₂) ₈ CH ₃							
Mole % Pur.	Ref. 3	Molecular Formula C ₁₀ H ₂₀ F ₂	Molecular Weight 178.260					
		Ref.		Ref.	Ref.			
F. P. °C			dt/dP °C/mm		f	to		
F. P. 100%			25°C	22.67	5	g	to	°K
B. P. °C			BP	0.0489	5	h		
760 mm	183.	3	t _e	0.0335	5	f'	to	°K
100	120.	5	30 mm	0.7214	5	g'	to	°K
30	91.	5	ΔHm cal/g			h'		
10	69.	5				m	to	°K
1	32.	5	ΔHv cal/g			n	to	°K
Pressure mm 25°C	0.57	5	25°C	76.62	5	o		
t _e	1217.7	5	30 mm	68.44	5	m'	to	°K
Density g/ml 20°C	0.89	3	BP	58.24	5	n'	to	°K
t	0.89	3	t _e	56.29	5	o'	to	°K
d ₄ 30			t _e (d, e)	56.19	5			
a	0.8900	5	ΔHv/T _e	21.15	5			
b			d 91 to °C	78.61	5	Surface tension dynes/cm. 20°C		
Ref. Index n _D 20°C	1.39	3	e 221 to °C	0.1113	5	γ	23.59	5
25	1.39	3	d'			30	23.59	5
30			e'			40	23.58	5
"C"	0.5851	4	d _c g/ml			Parachor [P]		
MR (Obs.)	47.479	4	v _c ml/g			20°C		
MR (Calc.)	48.388	5	t _c °C			30		
(nD-d/2)			P _c mm			40		
Dielectric			PV/RT 25°C	1.0057	5	Sugd.	441.4	5
A 91 to °C	7.405	3	30 mm	1.0000	5	Exp. L. l. %/wt. u.		
B 231 to °C	1751.	3	BP	0.9382	5	Dispersion		
C 204.		3	t _e	0.9223	5	Flash Point °C		
A* 91 to °C	2.007	5	t _c			Fire Point		
B* 221 to °C	1665.	5	ΔHc kcal/m			M. Spec. Ultra V.		
K			ΔHf			X-Ray Dif.		
t _k to °C			ΔFf			Infrared		
t _x to °C			Viscosity centistokes			Solubility in +		
A' to °C			η °C			Acetone		
B' to °C			B ^v to °C			Carbon tet.		
C' to °C			A ^v to °C			Benzene		
A* to °C			(B ^v) to °C			Ether		
B* to °C			(A ^v) °C			n-Heptane		
Ac to °C			c _p liq. °K			Ethanol		
Bc to °C			c _p vap. °K			Water		
Cc to °C			c _v vap.			Water in		
Cryos. A°								
const. B°								
t _e °C	201.37	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		2, 2-Difluoropropane		STRUCTURAL FORMULA	
				$\text{CH}_3\text{CF}_2\text{CH}_3$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_3\text{H}_6\text{F}_2$	Molecular Weight	80.078
		Ref.			Ref.
F. P. °C	-104.8	3	dt/dP °C/mm		
F. P. 100%			25°C	0.0163	5
B. P. °C			BP	0.0333	5
760 mm	-0.4	3	t_e	0.0344	5
100	-42.9	5	30 mm	0.4747	5
30	-61.8	5	$\Delta\text{Hm cal/g}$		
10	-76.2	5	$\Delta\text{Hv cal/g}$		
1	-100.1	5	25°C	66.46	5
Pressure mm 25°C	1887.1	5	30 mm	77.84	5
t_e	729.3	5	BP	70.01	5
Density g/ml 20°C	0.9205 ^a	3	t_e	70.16	5
25	0.9130 ^a	3	t_e (d, e)	70.15	5
d ₄ ^t 30			$\Delta\text{Hv}/T_e$	20.68	5
a	0.9530	5	d -62 to	69.96	5
b	-0.00125	5	e 19 °C	0.1276	5
Ref. Index n _D			d'		
20°C	1.2904 ^a	3	e'		
25	1.2880 ^a	3	d g/ml		
30			v _c ml/g		
"C"	0.4275	4	t _c °C		
MR (Obs.)	15.787	4	P _c mm		
MR (Calc.) (n _D -d/2)	16.062	5	PV/RT		
Dielectric			25°C	0.9373	5
A -62 to	7.09487	5	30 mm	1.0000	5
B 29 °C	1035.0	5	BP	0.9637	5
C	246.	5	t_e	0.9647	5
A* -62 to	1.49970	5	t_c		
B* 19 °C	965.2	5	$\Delta\text{Hc kcal/m}$		
K			ΔHf		
c			ΔFf		
t _x to			Viscosity centistokes		
t _x °C			η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C'			(B ^v) to		
A' * to			(A ^v) °C		
B' * °C			c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc °C					
Cryos. A° const. B°					
t _e °C	-1.44	5			

^a For the liquid at saturation pressure	⁺ grams/100 grams solvent
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula	
SOURCE: MCA	
PURIFICATION: MCA	
LITERATURE REFERENCES: 3 MCA	

TABLE I. FLUOROALKANES

No. 57

NAME		2, 2-Difluorobutane			STRUCTURAL FORMULA		
					CH ₃ CF ₂ CH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₄ H ₈ F ₂	Molecular Weight	94.104		
		Ref.			Ref.		Ref.
F. P. °C	-117.5	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C	0.0429	5	h	
760 mm	30.9	3	BP	0.0360	5	f'	to
100	-14.9	5	t _e	0.0340	5	g'	°K
30	-35.3	5	30 mm	0.5114	5	h'	
10	-50.8	5	ΔHm cal/g			m	to
1	-76.6	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C	69.03	5	o	
t _e	609.5	5	30 mm	77.85	5	m'	to
	814.6	5	BP	68.17	5	n'	°K
Density g/ml 20°C			t _e	67.89	5	o'	
d ₄ ²⁵	0.9016	3	t _e (d, e)	67.89	5		
d ₄ ³⁰	0.8956	3	ΔHv/T _e	20.88	5		
a	0.9261	5	d -35 to	72.69	5	Surface tension dynes/cm. 20°C	
b	-0.00109	5	e 53 °C	0.1463	5	γ	15.41 5
Ref. Index n _D 20°C	1.3138	3	d'			30	14.52 5
25	1.3111	3	e'			40	13.63 5
30			d _c g/ml			Parachor [P]	
"C"	0.4699	4	v _c ml/g			20°C	
MR (Obs.)	20.339	4	t _c °C			30	
MR (Calc.) (nD-d/2)	20.680	5	P _c mm			40	
Dielectric			PV/RT 25°C	0.9643	5	Sugd.	207.4 5
A -35 to	7.07337	5	30 mm	1.0000	5	Exp. L. l. %/wt. u.	
B 63 °C	1106.4	5	BP	0.9588	5	Dispersion	
C	233.	5	t _e	0.9570	5	Flash Point °C	
A* -35 to	1.52354	5	t _c			Fire Point	
B* 53 °C	1036.8	5	ΔHc kcal/m			M. Spec. Ultra V.	
K			ΔHf			X-Ray Dif.	
t _k to			ΔFf			Infrared	
t _x °C			Viscosity centistokes			Solubility in ⁺	
A' to			η			Acetone	
B' °C						Carbon tet.	
C' °C						Benzene	
A* to			B _v to			Ether	
B* °C			A _v °C			n-Heptane	
Ac to			(B _v) to			Ethanol	
B _c °C			(A _v) °C			Water	
C _c °C			c _p liq. °K			Water in	
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	32.81	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2, 2-Difluoropentane			STRUCTURAL FORMULA		
					CH ₃ CF ₂ (CH ₂) ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₀ F ₂	Molecular Weight	108.130		
F. P. °C	-98.1	Ref.	3	dt/dP °C/mm		f	to
F. P. 100%				25°C	0.1148	g	°K
B. P. °C	59.7	3		BP	0.0384	h	
760 mm	10.6	5		t _e	0.0338	f'	to
100	-11.3	5		30 mm	0.5516	g'	°K
30	-28.1	5				h'	
10	-56.0	5		ΔHm cal/g		m	to
1				25°C	71.10	n	°K
Pressure mm 25°C	196.5	5		30 mm	76.13	o	
t _e	893.0	5		BP	66.33	m'	to
Density g/ml 20°C	0.8932	3		t _e	65.68	n'	°K
d ₄ ^t 25	0.8877	3		t _e (d, e)	65.68	o'	
d ₄ ^t 30				ΔHv/T _e	21.04		
a	0.9152	5		d -11 to	74.57	Surface tension dynes/cm. 20°C	
b	-0.00106	5		e 84 °C	0.1379	γ	17.09
Ref. Index n _D 20°C	1.3351	3		d' to		30	16.22
25	1.3331	3		e' °C		40	15.36
30				d c g/ml		Parachor [P] 20°C	
"C"	0.5049	4		v c ml/g		30	
MR (Obs.)	25.044	4		t c °C		40	
MR (Calc.)	25.298	5		P c mm		Sugd.	246.4
(n _D -d/2)				PV/RT		Exp. L. l. %/wt. u.	
Dielectric				25°C	0.9830	Dispersion	
A -11 to	7.16426	5		30 mm	1.0000	Flash Point °C	
B 94 °C	1232.4	5		BP	0.9550	Fire Point	
C	228.	5		t _e	0.9506	M Spec. Ultra V. X-Ray Dif. Infrared	
A* -11 to	1.64406	5		t _c		Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 84 °C	1158.4	5		ΔHc kcal/m			
K				ΔHf			
c				ΔFf			
t _x to				Viscosity centistokes			
t _x °C				η °C			
A' to				B ^v to			
B' °C				A ^v °C			
C' °C				(B ^v) to			
A'*	to			(A ^v) °C			
B'*	°C			c _p liq. °K			
Ac to				c _p vap. °K			
Bc t _c °C				c _v vap.			
Cc °C							
Cryos. A° const. B°							
t _e °C	64.48	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE I. FLUOROALKANES

No. 59

NAME		3, 3-Difluoropentane			STRUCTURAL FORMULA		
					CH ₃ CH ₂ CF ₂ CH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₁₀ F ₂	Molecular Weight 108.130				
		Ref.		Ref.		Ref.	
F. P. °C	-94.0	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	0.1173	g	°K	
B. P. °C			BP	0.0384	h		
760 mm	60.3	3	t _e	0.0338	f'	to	
100	11.2	5	30 mm	0.5525	g'	°K	
30	-10.8	5	ΔHm cal/g		h'		
10	-27.6	5	ΔHv cal/g		m	to	
1	-55.6	5	25°C	71.33	n	°K	
Pressure mm 25°C	191.7	5	30 mm	76.29	o		
t _e	894.5	5	BP	66.48			
Density g/ml 20°C	0.9023	3	t _e	65.82	m'	to	
t	0.8968	3	t _e (d, e)	65.81	n'	°K	
d ₄			ΔHv/T _e	21.04	o'		
a	0.9243	5	d -11 to	74.80	Surface tension dynes/cm. 20°C		
b	-0.00106	5	e 85	0.1380	γ	17.80	
Ref. Index n _D 20°C	1.3380	3	d'		30	16.91	
25	1.3360	3	e'		40	16.02	
30			d _c g/ml		Parachor [P]		
"C"	0.5039	4	v _c ml/g		20°C		
MR (Obs.)	24.986	4	t _c °C		30		
MR (Calc.)	25.298	5	P _c mm		40		
Dielectric			PV/RT		Sugd.	246.4	
A -11 to	7.16765	5	25°C	0.9833	Exp. L. l. %/wt. u.		
B 95 °C	1235.9	5	30 mm	1.0000	Dispersion		
C	228.	5	BP	0.9548	Flash Point °C		
A* -11 to	1.64700	5	t _e	0.9503	Fire Point		
B* 85 °C	1161.9	5	t _c		M. Spec. Ultra V.		
K			ΔHc kcal/m		X-Ray Dif.		
t _k to			ΔHf		Infrared		
t _x °C			ΔFf		Solubility in ⁺		
A' to			Viscosity centistokes		Acetone		
B' °C			η		Carbon tet.		
C' °C					Benzene		
A* to			B ^v to		Ether		
B* °C			A ^v °C		n-Heptane		
Ac to			(B ^v) to		Ethanol		
Bc °C			(A ^v) °C		Water		
Cc °C			c _p liq. °K		Water in		
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	65.14	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1, 1-Trifluorobutane			STRUCTURAL FORMULA		
					CF ₃ (CH ₂) ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₇ F ₃	Molecular Weight	112.096		
		Ref.			Ref.		
F. P. °C	-114.8	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0274	5	h	
760 mm	16.7	3	t _e	0.0348	5	f'	to
100	-27.5	5	t _e (d, e)	0.0342	5	g'	°K
30	-47.1	5	30 mm	0.4921	5	h'	
10	-62.1	5	ΔHm cal/g			m	to
1	-86.8	5	ΔHv cal/g			n	°K
Pressure mm 25°C	1030.1	5	25°C	52.89	5	o	
t _e	775.7	5	30 mm	61.33	5	m'	to
Density g/ml 20°C	1.0144 ^a	3	BP	53.87	5	n'	°K
d ₄ ^t 25	1.0077 ^a	3	t _e	53.81	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.77	5	Surface tension dynes/cm. 20°C	
a	1.0426	5	d -47 to	55.82	5	γ	14.28
b	-0.00114	5	e 37 °C	0.1167	5		30 13.41
Ref. Index n _D 20°C	1.2921 ^a	3	d' to				40 12.52
25	1.2901 ^a	3	e' °C			Parachor [P]	
30			d c g/ml			20°C	
"C"	0.3901	4	v c ml/g			30	
MR (Obs.)	20.162	4	t c °C			40	
MR (Calc.) (n _D -d/2)	20.672	5	P c mm			Sugd.	216.0
Dielectric			PV/RT 25°C	0.9524	5	Exp. L. l. %/wt.	
A -47 to	7.03302	5	30 mm	1.0000	5	u.	
B 47 °C	1049.3	5	BP	0.9607	5	Dispersion	
C	236.	5	t _e	0.9601	5	Flash Point °C	
A* -47 to	1.57486	5	t _c			Fire Point	
B* 37 °C	981.5	5	ΔHc kcal/m			M Spec.	
K			ΔHf			Ultra V.	
c			ΔFf			X-Ray Dif.	
t _x to			Viscosity centistokes			Infrared	
t _x °C			η			Solubility in +	
A' to			B ^v to			Acetone	
B' °C			A ^v °C			Carbon tet.	
C' °C			(B ^v) to			Benzene	
A'* to			(A ^v) °C			Ether	
B'* °C			c _p liq. °K			n-Heptane	
Ac to			c _p vap. °K			Ethanol	
Bc t _c °C			t _e °C			Water	
Cc °C						Water in	
Cryos. A° const. B°							
t _e °C	17.24	5					
^a For the liquid at saturation pressure			⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 1

NAME		Chloromethane			STRUCTURAL FORMULA		
					CH ₃ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	CH ₃ Cl	Molecular Weight	50.491		
		Ref.			Ref.		
F. P. °C	-97.73	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0081	5	g	*K
B. P. °C			BP	0.0305	5	h	
760 mm	-24.22	3	t _e	0.0339	5	f'	to
100	-62.91	5	t _e (d, e)	0.4292	5	g'	*K
30	-80.03	5	ΔH _m cal/g			h'	
10	-93.05	5	ΔH _v cal/g			m	to
1	-114.58	5	25°C	90.23	5	n	*K
Pressure mm 25°C	4311.4	5	30 mm	113.99	5	o	
t _e	663.4	5	BP	101.53	5	m'	to
Density g/ml 20°C	0.9159 ^a	3	t _e	102.25	5	n'	*K
d ^t 25	0.9065 ^a	3	t _e (d, e)	102.23	5	o'	
d ^d 30			ΔH _v /T _e	21.00	5	Surface tension dynes/cm. 20°C	
a	0.9582	5	d -80 to	96.13	5	γ	15.31
b	-0.00155	5	e -7 °C	0.2232	5		13.85
Ref. Index			d'				40
n _D 20°C	1.3389 ^a	3	e'			Parachor [P]	
25	1.3362 ^a	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.4977	4	t _c °C			40	
MR (Obs.)	11.521	4	P _c mm			Sugd.	110.4
MR (Calc.) (n _D -d/2)	11.685	5	PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C	0.9083	5	u.	
A -80 to	6.99445	3	30 mm	1.0000	5	Dispersion	
B 3 °C	902.451	3	BP	0.9667	5	Flash Point °C	
C	243.60	3	t _e	0.9699	5	Fire Point	
A* -80 to	1.24136	5	t _c			M. Spec.	
B* -7 °C	841.02	5	ΔH _c kcal/m			Ultra V.	
K			ΔH _f			X-Ray Dif.	
c			ΔF _f			Infrared	
t _k to			Viscosity centistokes			Solubility in ⁺	
t _x °C			η			Acetone	
A' to						Carbon tet.	
B' °C						Benzene	
C' °C						Ether	
A'* to			B ^v to			n-Heptane	
B'* °C			A ^v °C			Ethanol	
Ac _l to			(B ^v) to			Water	
Bc _l to			(A ^v) °C			Water in	
Cc _l to			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	-27.33	5					

^a For liquid at saturation pressure⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Chloroethane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂)Cl		
Mole % Pur.	Ref.	Molecular Formula C ₂ H ₅ Cl	Molecular Weight 64.517				
	Ref.			Ref.			
F.P. °C	-136.4	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C	0.0245	5	g	
B.P. °C			BP	0.0350	5	h	
760 mm	+12.27	3	t _e	0.0349	5	f'	to
100	-32.03	5	30 mm	0.4896	5	g'	
30	-51.59	5	ΔHm cal/g			h'	
10	-66.43	5	ΔHv cal/g			m	to
i	-90.93	5	25°C	87.91	5	n	*K
Pressure mm 25°C	1198.8	5	30 mm	102.92	5	o	
t _e	762.8	5	BP	90.39	5	m'	to
Density g/ml 20°C	0.8978 ^a	3	t _e (d, e)	90.37	5	n'	*K
t ₂₅	0.8909 ^a	3	ΔHv/T _e	20.42	5	o'	
d ₄ 30			d -52 to	92.80	5	Surface tension dynes/cm. 20°C	
a	0.9265	5	e 32 °C	0.1962	5	30	18.37
b	-0.00125	4	d' to			40	17.15
Ref. Index n _D 20°C	1.3676 ^a	3	e' to °C				15.93
25	1.3654 ^a	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.5484	4	t _c °C			40	
MR (Obs.)	16.160	4	P _c mm			Sugd.	149.5
MR (Calc.) (nD-d/2)	16.303	5	PV/RT 25°C	0.9473	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A -52 to	6.94914	3	BP	0.9603	5	Flash Point °C	
B 42 °C	1012.771	3	t _e	0.9602	5	Fire Point	
C	236.67	3	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* -52 to	1.25816	5	ΔHc kcal/m			Solubility in +	
B* 32 °C	946.10	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes °C			Benzene	
t _k to						Ether	
t _x °C			B ^v to			n-Heptane	
A' °C			A ^v °C			Ethanol	
B' °C			(B ^v)			Water	
C' °C			(A ^v)			Water in	
A* to °C			c _p liq. °				
B* to °C			c _p vap. °K				
Ac to °C			c _v vap.				
Bc t _c °C							
Cc t _c °C							
Cryos. A° const. B°							
t _e °C	12.37	5					
^a For liquid at saturation pressure				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 3

NAME		1-Chloropropane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₇ Cl	Molecular Weight 78.543				
		Ref.			Ref.		
F. P. °C	-122.8	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0731	5	g	°K
B. P. °C			BP	0.0391	5	h	
760 mm	46.60	3	t _e	0.0356	5	f'	to
100	-2.84	5	t _e (d, e)	0.5456	5	g'	°K
30	-24.64	5	ΔHm cal/g			h'	
10	-41.18	5	ΔHv cal/g			m	to
1	-68.45	5	25°C	86.66	5	n	°K
Pressure mm 25°C	345.1	5	30 mm	95.44	5	o	
t _e	855.8	5	BP	82.91	5	m'	to
Density g/ml 20°C	0.8909	3	t _e	82.30	5	n'	°K
d ^t 25	0.8850	3	t _e	82.28	5	o'	
d ^t 30			ΔHv/T _e	19.99	5	Surface tension dynes/cm. 20°C	
a	0.9147	5	d -25 to	91.11	5	γ	20.74
b	-0.00113	5	e 70 °C	0.1759	5	30	19.61
Ref. Index			d' to			40	18.49
n _D 20°C	1.3879	3	e' °C			Parachor [P]	
25	1.3858	3	d _s g/ml			20°C	
30			v _c ml/g			30	
"C"	0.5815	4	t _c °C			40	
MR (Obs.)	20.799	4	P _c mm			Sugd.	188.4
MR (Calc.) (nD-d/2)	20.921	5	PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C	0.9737	5	u.	
A -25 to	6.93111	3	30 mm	1.0000	5	Dispersion	
B 80 °C	1121.123	3	BP	0.9548	5	Flash Point °C	
C	230.20	3	t _e	0.9514	5	Fire Point	
A* -25 to	1.28887	5	t _c			M. Spec.	
B* 70 °C	1049.75	5	ΔHc kcal/m			Ultra V.	
K			ΔHf			X-Ray Dif.	
c			ΔFf			Infrared	
t _k to			Viscosity centistokes			Solubility in ⁺	
t _x °C			η			Acetone	
A' to						Carbon tet.	
B' °C			B ^v to			Benzene	
C'			A ^v °C			Ether	
A'* to			(B ^v) to			n-Heptane	
B'* °C			(A ^v) °C			Ethanol	
Ac to			c _p liq. °K			Water	
Bc t _c °C			c _p vap. °K			Water in	
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	50.17	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

No. 4

NAME		1-Chlorobutane		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₃ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₉ Cl	Molecular Weight	92.569
		Ref.			Ref.
F. P. °C	-123.1	3	dt/dP °C/mm		
F. P. 100%			25°C	0.2143	5
B. P. °C			BP	0.0426	5
760 mm	78.44	3	t _e	0.0360	5
100	24.47	5	30 mm	0.5959	5
30	0.67	5	ΔHm cal/g		
10	-17.39	5	ΔHv cal/g		
1	-47.18	5	25°C	86.03	5
Pressure mm 25°C	102.4	5	30 mm	90.03	5
t _e	941.3	5	BP	77.50	5
Density g/ml 20°C	0.8862	3	t _e	76.41	5
d ₄ ^t 25	0.8809	3	t _e (d, e)	76.36	5
d ₄ ^t 30			ΔHv/T _e	19.72	5
a	0.9074	5	d l to	90.13	5
b	-0.00104	5	e 106 °C	0.1610	5
Ref. Index n _D 20°C	1.4021	3	d' to		
25	1.4001	3	e' to		
30			d _c g/ml		
"C"	0.6048	4	v _c ml/g		
MR (Obs.)	25.440	4	t _c °C		
MR (Calc.)	25.539	5	P _c mm		
Dielectric			PV/RT 25°C	0.9903	5
A 1 to	6.93790	3	30 mm	1.0000	5
B 116 °C	1227.433	3	BP	0.9497	5
C	224.10	3	t _e	0.9433	5
A* 1 to	1.33677	5	t _c		
B* 106 °C	1152.09	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _x to			Viscosity centistokes		
t _x °C			η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C' °C			(B ^v)		
A'* to			(A ^v)		
B'* °C			c _p liq. °		
Ac to			c _p vap. °K		
Bc °C			c _v vap.		
Cc °C					
Cryos. A° const. B°					
t _e °C	85.53	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE II. CHLOROALKANES

No. 5

NAME		1-Chloropentane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₄ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	C ₅ H ₁₁ Cl	Molecular Weight	106.595		
F. P. °C	-99.0	Ref.	3	dt/dP °C/mm		f	to
F. P. 100%				25°C		g	°
B. P. °C				BP	0.6219	5	
760 mm	107.76		3	t _e	0.0456	5	
100	49.89		5	30 mm	0.0362	5	ft
30	24.33		5	ΔHm cal/g	0.6404	5	to
10	4.91		5				g'
1	-27.16		5				h'
Pressure mm 25°C	31.07		5	ΔHv cal/g	85.75	5	m
t _e	1019.5		5	25°C	85.85	5	n
Density g/ml 20°C	0.8818		3	30 mm	73.40	5	o
d ^t 25	0.8769		3	BP	71.92	5	m'
d ^t 30				t _e	71.83	5	n'
				t _e (d, e)	19.58	5	o'
				ΔHv/T _e			
a	0.9014		5	d 24 to	89.48	5	Surface tension
b	-0.03972		5	e 138 °C	0.1493	5	dynes/cm. 20°C
Ref. Index				d' to			30
n _D 20°C	1.4120		3	e' °C			40
25	1.4100		3				23.57
30							22.53
"C"	0.6219		4				21.52
MR (Obs.)	30.079		4	d _c g/ml			Parachor [P]
MR (Calc.)	30.157		5	v _c ml/g			20°C
Dielectric				t _c °C			30
A 24to	6.96617		3	P _c mm			40
B 148°C	1332.890		3	PV/RT	0.9998	5	Sugd. 266.4
C	218.50		3	25°C	1.0000	5	
A*	1.40099		5	30 mm	0.9454	5	Exp. L. l. %/wt.
B*	1254.08		5	BP	0.9361	5	u.
K				t _e			Dispersion
t _k to				t _c			Flash Point °C
t _x °C				ΔHc kcal/m			Fire Point
A' to				ΔHf			M. Spec.
B' °C				ΔFf			Ultra V.
C'				Viscosity			X-Ray Dif.
A'*	to			centistokes			Infrared
B'*	°C			η			Solubility in ⁺
Ac to							Acetone
Bc t _c °C				B ^v to			Carbon tet.
Cc °C				A ^v °C			Benzene
				(B ^v)			Ether
				(A ^v)			n-Heptane
				c _p liq. °			Ethanol
				c _p vap. °K			Water
				c _v vap.			Water in
t _e °C	118.28		5				
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

No. 6

NAME		1-Chlorohexane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₅ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₆ H ₁₃ Cl	Molecular Weight 120.621				
F. P. °C	-94.0	3	dt/dP °C/mm			f to	
F. P. 100%			25°C	1.784	5	g °	
B. P. °C			BP	0.0481	5	h	
760 mm	134.50	3	t _e	0.0363	5	ft --- to	
100	73.35	5	30 mm	0.6792	5	g' °	
30	46.26	5	ΔHm cal/g			h'	
10	25.65	5	ΔHv cal/g			m to	
1	-8.44	5	25°C	85.63	5	n °K	
Pressure mm 25°C	9.63	5	30 mm	82.47	5	o	
t _e	1090.0	5	BP	70.12	5	m' to	
Density g/ml 20°C	0.8785	3	t _e (d, e)	68.33	5	n' °K	
d ₄ ^t 25	0.8739	3	ΔHv/T _e	68.20	5	o'	
d ₄ ^t 30			d 46 to	88.95	5	Surface tension dynes/cm. 20°C	
a	0.8969	5	e 168 °C	0.1400	5	30	24.47
b	-0.03917	5	d' to			40	23.46
Ref. Index n _D 20°C	1.4196	3	e' °C				22.47
25	1.4177	3	d _c g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.6351	4	t _c °C			30	
MR (Obs.)	34.717	4	P _c mm			40	305.4
MR (Calc.)	34.775	5	PV/RT			Sugd.	5
Dielectric			25°C	1.0043	5	Exp. L. l. %/wt. u.	
A 46 to	7.0115	3	30 mm	1.0000	5	Dispersion	
B 178 °C	1437.05	3	BP	0.9414	5	Flash Point °C	
C	213.4	3	t _e	0.9298	5	Fire Point	
A* 46 to	1.4791	5	t _c			M Spec. Ultra V.	
B* 168 °C	1355.37	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
c			ΔFf			Solubility in +	
t _k to			Viscosity centistokes			Acetone	
t _x °C			η °C			Carbon tet.	
A' to			B ^v to			Benzene	
B' °C			A ^v °C			Ether	
C' °C			(B ^v)			n-Heptane	
A'* to			(A ^v)			Ethanol	
B'* °C			c _p liq. °			Water	
Ac to			c _p vap. °K			Water in	
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	148.21	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 7

NAME		1-Chloroheptane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₆ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₇ H ₁₅ Cl	Molecular Weight	134.647		
		Ref.			Ref.		
F. P. °C	-69.5	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	5.095	5	g	*K
B. P. °C			BP	0.0502	5	h	
760 mm	159.1	3	t _e	0.0362	5	f'	to
100	95.1	5	30 mm	0.7137	5	g'	*K
30	66.7	5	ΔHm cal/g			h'	
10	45.0	5	ΔHv cal/g			m	to
1	9.1	5	25°C	85.54	5	n	*K
Pressure mm 25°C	3.03	5	30 mm	79.59	5	o	
t _e	1154.1	5	BP	67.37	5	m'	to
Density g/ml 20°C	0.8758	3	t _e	65.33	5	n'	*K
25	0.8715	3	t _e (d, e)	65.16	5	o'	
d ^t 25			ΔHv/T _e	19.59	5	Surface tension dynes/cm. 20°C	
d ⁴ 30						γ	25.18
a	0.8930	5	d 67 to	88.41	5		5
b	-0.03859	5	e 196 °C	0.1322	5		24.20
Ref. Index n _D 20°C	1.4256	3	d' to				23.25
25	1.4237	3	e' °C			Parachor [P]	
30			d _c g/ml				20°C
"C"	0.6457	4	v _c ml/g				30
MR (Obs.)	39.360	4	t _c °C				40
MR (Calc.)	39.393	5	P _c mm				Sugd. 344.4
Dielectric			PV/RT			Exp. L. l. %/wt.	
A 67 to	7.0650	3	25°C	1.0056	5	u.	
B 206 °C	1539.35	3	30 mm	1.0000	5	Dispersion	
C	208.8	3	BP	0.9379	5	Flash Point °C	
A* 67 to	1.5628	5	t _e	0.9240	5	Fire Point	
B* 196 °C	1455.27	5	t _c			M. Spec. Ultra V.	
K			ΔHc kcal/m			X-Ray Dif.	
c			ΔHf			Infrared	
t _k to			ΔFf			Solubility in +	
t _x °C			Viscosity centistokes			Acetone	
A' to			η			Carbon tet.	
B' °C						Benzene	
C'						Ether	
A* to			B ^v to			n-Heptane	
B* °C			A ^v °C			Ethanol	
Ac to			(B ^v) to			Water	
Bc t _c °C			(A ^v) °C			Water in	
Cc t _c °C			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	175.77	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Chlorooctane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₇ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₈ H ₁₇ Cl		Molecular Weight	148.673	
		Ref.				Ref.	
F. P. °C	-57.8	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	14.68	5	g	°
B. P. °C			BP	0.0520	5	h	°
760 mm	182.0	3	t _e	0.0360	5	f'	to
100	115.6	5	30 mm	0.7444	5	g'	°
30	85.9	5	ΔHm cal/g			h'	°
10	63.3	5				m	to
1	25.7	5	ΔHv cal/g			n	°K
Pressure mm 25°C	0.95	5	25°C	85.60	5	o	°K
t _e	1213.5	5	30 mm	77.15	5		
Density g/ml 20°C	0.8737	3	BP	65.06	5	m'	to
25	0.8695	3	t _e (d, e)	62.81	5	n'	°K
d ₄ ^t			ΔHv/T _e	19.68	5	o'	°K
a	0.8905	5	d 86 to	87.97	5	Surface tension dynes/cm. 20°C	
b	-0.03840	5	e 221 °C	0.1259	5	y	25.77
Ref. Index n _D 20°C	1.4305	3	d'			30	24.79
25	1.4286	3	e'			40	23.84
30						Parachor [P] 20°C	
"C"	0.6542	4	d _c g/ml			30	
MR (Obs.)	44.003	4	v _c ml/g			40	
MR (Calc.)	44.011	5	t _c °C			Sugd.	383.4
Dielectric			P _c mm			Exp. L. l. %/wt. u.	
A 86 to	7.1231	3	PV/RT			Dispersion	
B 231 °C	1639.20	3	25°C	1.0045	5	Flash Point °C	
C	204.2	3	30 mm	1.0000	5	Fire Point	
A* 86 to	1.6485	5	BP	0.9349	5	M Spec. Ultra V.	
B* 221 °C	1553.06	5	t _e	0.9190	5	X-Ray Dif.	
K			t _c			Infrared	
c			ΔHc kcal/m			Solubility in +	
t _x to			ΔHf			Acetone	
t _x °C			ΔFf			Carbon tet.	
A' to			Viscosity centistokes			Benzene	
B' °C			η °C			Ether	
C' °C			B ^v to			n-Heptane	
A'* to °C			A ^v °C			Ethanol	
B'* to °C			(B ^v)			Water	
Ac to °C			(A ^v)			Water in	
Bc t _c °C			c _p liq. °				
Cc °C			c _p vap. °K				
Cryos. A* const. B*			c _v vap.				
t _e °C	201.44	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

NAME		1-Chlorononane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₈ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₉ H ₁₉ Cl	Molecular Weight 162.699				
		Ref.		Ref.			Ref.
F. P. °C	-39.4	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	42.29	g	to	
B. P. °C			BP	0.0537	h	to	
760 mm	203.4	3	t _e	0.0358	f'	to	
100	134.7	5	30 mm	0.7727	g'	to	
30	104.0	5	ΔHm cal/g		h'	to	
10	80.5	5	ΔHv cal/g		m	to	
1	41.4	5	25°C	85.60	n	to	
Pressure mm 25°C	0.30	5	30 mm	74.93	o	to	
t _e	1268.5	5	BP	63.00	m'	to	
Density g/ml 20°C	0.8720	3	t _e	60.57	n'	to	
d _t 25	0.8679	3	t _e (d, e)	60.36	o'	to	
d ₄ 30			ΔHv/T _e	19.76			
a	0.8884	5	d 104	87.42	Surface tension dynes/cm. 20°C		
b	-0.03820	5	e 245 °C	0.1200	5	26.27	5
Ref. Index n _D 20°C	1.4345	3	d'		5	30	5
25	1.4327	3	e'			40	5
30			d _c g/ml		Parachor [P] 20°C		
"C"	0.6612	4	v _c ml/g		30		
MR (Obs.)	48.638	4	t _c °C		40		
MR (Calc.)	48.629	5	P _c mm		Sugd.	422.4	5
(nD-d/2)			PV/RT		Exp. L. l. %/wt. u.		
Dielectric			25°C	1.0020	5	Dispersion	
A 104 to	7.1802	3	30 mm	1.0000	5	Flash Point °C	
B 255 °C	1736.11	3	BP	0.9323	5	Fire Point	
C	200.4	3	t _e	0.9144	5	M. Spec. Ultra V.	
A* 104 to	1.7313	5	t _c		X-Ray Dif. Infrared		
B* 245 °C	1648.19	5	ΔHc kcal/m		Solubility in ⁺		
K			ΔHf		Acetone		
c			ΔFf		Carbon tet.		
t _k to			Viscosity centistokes		Benzene		
t _x °C			η		Ether		
A' to					n-Heptane		
B' °C			B ^v to		Ethanol		
C'			A ^v °C		Water		
A** to			(B ^v) to		Water in		
B** °C			(A ^v) °C				
Ac to			c _p liq. °K				
Bc °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	225.44	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Chlorodecane		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₉ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₁₀ H ₂₁ Cl	Molecular Weight	176.725
			Ref.		
F. P. °C	-31.3	3	dt/dP °C/mm		
F. P. 100%			25°C	121.9	5
B. P. °C	223.4	3	BP	0.0551	5
760 mm	152.8	3	t _e	0.0355	5
100	121.1	3	30 mm	0.7983	5
30	96.8	3	ΔHm cal/g		
10	56.2	3	ΔHv cal/g		
1			25°C	85.67	5
Pressure mm 25°C	0.10	5	30 mm	72.94	5
t _e	1319.0	5	BP	61.13	5
Density g/ml 20°C	0.8705	3	t _e	58.56	5
d ₄ ^t 25	0.8666	3	t _e (d, e)	58.32	5
d ₄ ^t 30			ΔHv/T _e	19.86	5
a	0.8861	5	d 121 to	86.90	5
b	-0.03780	5	e 268 °C	0.1153	5
Ref. Index n _D 20°C	1.4379	3	d' to		
25	1.4360	3	e' °C		
30			v _c g/ml		
"C"	0.6673	4	t _c ml/g		
MR (Obs.)	53.283	4	t _c °C		
MR (Calc.) (n _D -d/2)	53.247	5	P _c mm		
Dielectric			PV/RT		
A 121 to	7.2372	3	25°C	0.9989	5
B 278°C	1829.68	3	30 mm	1.0000	5
C	196.6	3	BP	0.9294	5
A* 121 to	1.8130	5	t _e	0.9100	5
B* 268°C	1740.46	5	t _c		
K			ΔHc kcal/m		
c			ΔHf		
t _x to			ΔFf		
t _x °C			Viscosity centistokes		
A' to			η °C		
B' to			B ^v to		
C' to			A ^v °C		
A ^{1*} to			(B ^v)		
B ^{1*} °C			(A ^v)		
A _c to			c _p liq. °K		
B _c to			c _p vap. °K		
C _c t _c °C			c _v vap.		
Cryos. A° const. B°					
t _e °C	247.82	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE II. CHLOROALKANES

No. 11

NAME		1-Chloroundecane				STRUCTURAL FORMULA				
						$\text{CH}_3(\text{CH}_2)_{10}\text{Cl}$				
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{11}\text{H}_{23}\text{Cl}$	Molecular Weight	190.751					
		Ref.			Ref.	Ref.				
F.P. °C	-16.9	3	dt/dP			f		to		
F.P. 100%			°C/mm			g		°K		
B.P. °C			25°C	351.1	5	h				
760 mm	242.2	3	BP	0.0564	5	f'		to		
100	169.8	5	t _e	0.0353	5	g'		°K		
30	137.1	5	30 mm	0.8219	5	h'				
10	112.1	5	ΔHm cal/g			m		to		
1	70.3	5	ΔHv cal/g			n		°K		
Pressure mm	0.03	5	25°C	85.74	5	o				
t _e	1366.0	5	30 mm	71.10	5	m'		to		
Density g/ml	0.8693	3	BP	59.42	5	n'		°K		
20°C	0.8654	3	t _e	56.71	5	o'				
t			t _e (d, e)	56.46	5	Surface tension dynes/cm. 20°C				
d ₄	30		ΔHv/T _e	19.96	5	27.04	5			
a	0.8849	5	d	137	to	30	5			
b	-0.03780	5	e	289	to	40	5			
Ref. Index			d'		to	Parachor [F] 20°C				
n _D			e'		to	30				
20°C	1.4408	3	d _c g/ml			40				
25	1.4389	3	v _c ml/g			Sugd. 500.4 5				
30			t _c °C							
"C"	0.6724	4	P _c mm							
MR (Obs.)	57.922	4	PV/RT			Exp. L. l. %/wt. u.				
MR (Calc.)	57.865	5	25°C	0.9954	5	Dispersion				
(n _D -d/2)			30 mm	1.0000	5	Flash Point °C				
Dielectric			BP	0.9268	5	Fire Point				
A	137	3	t _e	0.9058	5	M. Spec. Ultra V. X-Ray Dif. Infrared				
B	292	3	t _c			Solubility in ⁺				
C	193.0	3	ΔHc kcal/m			Acetone				
A*	137 to	5	ΔHf			Carbon tet.				
B*	289 °C	5	ΔFf			Benzene				
K			Viscosity centistokes			Ether				
c			η			n-Heptane				
t _k						Ethanol				
t _x						Water				
A'						Water in				
B'			B ^v to							
C'			A ^v °C							
A'*			(B ^v) to							
B'*			(A ^v) °C							
Ac			c _p liq. °K							
Bc			c _p vap. °K							
Cc			c _v vap.							
Cryos. A°										
const. B°										
t _e °C	268.86	5								
* grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		1-Chlorododecane		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₁₁ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₁₂ H ₂₅ Cl	Molecular Weight	204.777
			Ref.		
F.P. °C	-9.3				
F.P. 100%					
B.P. °C					
760 mm	259.9			977.1	5
100	185.7			0.0577	5
30	152.1			0.0352	5
10	126.4			0.8449	5
1	83.3				
Pressure mm 25°C	0.01				
t _e	1410.0				
Density g/ml 20°C	0.8682				
d ₄ ^t 25	0.8644				
d ₄ ^t 30					
"a"	0.8834				
"b"	-0.03760				
Ref. Index n _D 20°C	1.4433				
25	1.4414				
30					
"C"	0.6768				
MR (Obs.)	62.567				
MR (Calc.) (n _D -d/2)	62.483				
Dielectric					
A 152 to	7.3394				
B 319 °C	2005.72				
C	190.0				
A* 152 to	1.9602				
B* 309 °C	1914.40				
K					
c					
t _x to					
t _x °C					
A' to					
B' °C					
C'					
A' * to					
B' * °C					
Ac to					
Bc t _c °C					
Cc					
Cryos. A' consts. B'					
t _e °C	288.67				
dt/dP °C/mm 25°C					
BP					
t _e 30 mm					
ΔHm cal/g					
ΔHv cal/g 25°C					
30 mm					
BP					
t _e					
t _e (d, e)					
ΔHv/T _e					
d 152 to					
e 309 °C					
d' to					
e' °C					
d _c g/ml					
v _c ml/g					
t _c °C					
P c mm					
PV/RT 25°C					
30 mm					
BP					
t _e					
t _c					
ΔHc kcal/m					
ΔHf					
ΔFf					
Viscosity centistokes γ °C					
B ^v to					
A ^v °C					
(B ^v)					
(A ^v)					
c _p liq. °					
c _p vap. °K					
c _v vap.					
f to					
g °					
h					
f' to					
g' °					
h'					
m to					
n °K					
o					
m' to					
n' °K					
o'					
Surface tension dynes/cm. 20°C					
30					
40					
Parachor [P] 20°C					
30					
40					
Sugd.	539.4				
Exp. L. l. %/wt. u. Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in					
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE II. CHLOROALKANES

No. 13

NAME		1-Chlorotridecane			STRUCTURAL FORMULA				
					CH ₃ (CH ₂) ₁₂ Cl				
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₃ H ₂₇ Cl	Molecular Weight	218.803				
		Ref.			Ref.				Ref.
F. P. °C	+0.7	3	dt/dP °C/mm			f		to	
F. P. 100%			25°C	2957.	5	g		°K	
B. P. °C	277.	3	BP	0.0587	5	h			
760 mm	201.	5	t _e	0.0349	5	f'		to	
100	167.	5	30 mm	0.8642	5	g'		°K	
30	141.	5	ΔHm cal/g			h'			
10	96.	5	ΔHv cal/g			m		to	
1			25°C	86.06	5	n		°K	
Pressure mm 25°C	1452.2	5	30 mm	67.86	5	o			
t _e			BP	56.34	5	m'		to	
Density g/ml 20°C	0.8673	3	t _e	53.49	5	n'		°K	
25	0.8636	3	t _e (d, e)	53.12	5	o'			
d ₄ ^t 30			ΔHv/T _e	20.15	5	Surface tension dynes/cm. 20°C			
a	0.8821	5	d 167 to	85.37	5	27.63			
b	-0.03740	5	e 328 °C	0.1048	5	30			
Ref. Index n _D 20°C	1.4454	3	d' to			40			
25	1.4436	3	e' °C			26.70			
30			d _c g/ml			25.79			
"C"	0.6805	4	v _c ml/g			Parachor [P]			
MR (Obs.)	67.197	4	t _c °C			20°C			
MR (Calc.)	67.101	5	P _c mm			30			
(nD-d/2)			PV/RT 25°C	0.9871	5	40			
Dielectric			30 mm	1.0000	5	Sugd. 578.4			
A 167 to	7.391	3	BP	0.9208	5	Exp. L. l. %/wt.			
B 338 °C	2087.9	3	t _e	0.8986	5	u.			
C 186.	186.	3	t _c			Dispersion			
A* 167 to	2.033	5	ΔHc kcal/m			Flash Point °C			
B* 328 °C	1996.2	5	ΔHf			Fire Point			
K			ΔFf			M. Spec. Ultra V. X-Ray Dif. Infrared			
t _k to °C			Viscosity centistokes η °C			Solubility in ⁺			
t _x to °C			B ^v to °C			Acetone			
A' to °C			A ^v to °C			Carbon tet.			
B' to °C			(B ^v) to °C			Benzene			
C' to °C			(A ^v) to °C			Ether			
A'* to °C			c _p liq: °K			n-Heptane			
B'* to °C			c _p vap. °K			Ethanol			
Ac to °C			c _v vap.			Water			
Bc to °C						Water in			
Cc to °C									
Cryos. A° const. B°									
t _e °C	307.71	5							
* grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

NAME		1-Chlorotetradecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₃ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₁₄ H ₂₉ Cl	Molecular Weight	232.829		
		Ref.			Ref.		
F. P. °C	4.9	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°
B. P. °C			BP	0.0597	5	h	---
760 mm	292.	3	t _e	0.0348	5	f'	to
100	215.	5	30 mm	0.8837	5	g'	°
30	180.	5	ΔHm cal/g			h'	
10	153.	5	ΔHv cal/g			m	to
1	107.	5	25°C			n	*K
Pressure mm 25°C			30 mm	65.98	5	o	
t _e	1488.1	5	BP	54.48	5	m'	to
Density g/ml 20°C	0.8665	3	t _e	51.78	5	n'	*K
d ₄ ^t 25	0.8628	3	t _e (d, e)	51.18	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.18	5	Surface tension dynes/cm. 20°C	
a	0.8813	5	d 180 to	84.36	5	y	27.87
b	-0.03740	5	e 344 °C	0.1023	5	30	26.93
Ref. Index n _D 20°C	1.4473	3	d' to			40	26.02
25	1.4455	3	e' °C			Parachor [P] 20°C	
30			d _v g/ml			30	
"C"	0.6839	4	t _c ml/g			40	
MR (Obs.)	71.835	4	t _c °C			Sugd.	617.4
MR (Calc.) (nD-d/2)	71.719	5	P _c mm			Exp. L. l. %/wt. u. Dispersion	
Dielectric			PV/RT 25°C	1.0000	5	Flash Point °C	
A 180 to	7.434	3	30 mm	0.9145	5	Fire Point	
B 354 °C	2166.1	3	BP	0.8952	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	184.	3	t _e			Solubility in +	
A* 180 to	2.096	5	t _c			Acetone	
B* 344 °C	2073.7	5	ΔHc kcal/m			Carbon tet.	
K			ΔHf			Benzene	
c			ΔFf			Ether	
t _x to			Viscosity centistokes			n-Heptane	
t _x °C			η °C			Ethanol	
A' to			B ^v to			Water	
B' °C			A ^v °C			Water in	
C'			(B ^v)				
A'* to			(A ^v)				
B'* °C			c _p liq. °				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	324.31	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 15

NAME		1-Chloropentadecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₄ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₁₅ H ₃₁ Cl	Molecular Weight 246.855			Ref.	Ref.
F. P. °C	14.7	3					
F. P. 100%							
B. P. °C							
760 mm	308.	3		dt/dP °C/mm			
100	229.	5		25°C			
30	194.	5		BP	0.0607	5	
10	166.	5		t _e	0.0346	5	
1	120.	5		30 mm	0.9019	5	
Pressure mm 25°C				ΔHm cal/g			
t _e	1526.8	5		ΔHv cal/g			
Density g/ml 20°C				25°C			
t	0.8658	3		30 mm	64.80	5	
d ₄ 30	0.8621	3		BP	53.38	5	
				t _e	50.51	5	
				t _e (d, e)	49.96	5	
				ΔHv/T _e	20.26	5	
a	0.8806	5		d 194 to	84.13	5	
b	-0.03740	5		d' 362 °C	0.0998	5	
Ref. Index				e' to °C			
n _D 20°C	1.4490	3		d _c g/ml			
25	1.4472	3		v _c ml/g			
30				t _c °C			
"C"	0.6869	4		P _c mm			
MR (Obs.)	76.475	4		PV/RT			
MR (Calc.)	76.337	5		25°C			
(nD-d/2)				30 mm	1.0000	5	
Dielectric				BP	0.9135	5	
A 194 to	7.474	3		t _e	0.8917	5	
B 372 °C	2240.5	3		t _c			
C	180.	3		ΔHc kcal/m			
A* 194 to	2.155	5		ΔHf			
B* 362 °C	2148.2	5		ΔFf			
K				Viscosity centistokes			
t _k to °C				η			
t _x to °C							
A' to °C				B ^v to °C			
B' to °C				A ^v to °C			
C' to °C				(B ^v) to °C			
A* to °C				(A ^v) °C			
B* to °C				c _p liq. °K			
Ac to °C				c _p vap. °K			
Bc to °C				c _v vap.			
Cc to °C							
Cryos. A°							
const. B°							
t _e °C	342.23	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Chlorohexadecane			STRUCTURAL FORMULA	
					CH ₃ (CH ₂) ₁₅ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₁₆ H ₃₃ Cl	Molecular Weight	260.881	
F. P. °C	17.9	3	dt/dP °C/mm			f to
F. P. 100%			25°C			g
B. P. °C			BP	0.0617	5	h
760 mm	322.	3	t _e	0.0346	5	f' to
100	242.	5	30 mm	0.9206	5	g' °
30	205.	5	ΔHm cal/g			h'
10	177.	5	ΔHv cal/g			m to
1	130.	5	25°C			n °K
Pressure mm 25°C			30 mm	63.14	5	o
t _e	1560.2	5	BP	51.88	5	m' to
Density g/ml 20°C	0.8652	3	t _e	48.99	5	n' °K
d ₄ ²⁵	0.8615	3	t _e (d, e)	48.40	5	o'
d ₄ ³⁰			ΔHv/T _e	20.25	5	
a	0.8800	5	d 205 to	82.98	5	Surface tension dynes/cm. 20°C
b	-0.03740	5	e 378 °C	0.0966	5	30
Ref. Index n _D 20°C			e' °C			40
25	1.4505	3				28.29
30	1.4487	3				27.33
"C"	0.6895	4	d _c g/ml			26.40
MR (Obs.)	81.110	4	v _c ml/g			
MR (Calc.) (nD-d/2)	80.955	5	t _c °C			
Dielectric			P _c mm			Parachor [P] 20°C
A 205 to	7.506	3	PV/RT 25°C			30
B 388 °C	2311.4	3	30 mm	1.0000	5	40
C	178.	3	BP	0.9106	5	Sugd. 695.4
A* 205 to	2.206	5	t _e	0.8886	5	Exp. L. l. %/wt. u.
B* 378 °C	2218.6	5	t _c			Dispersion
K			ΔHc kcal/m			Flash Point °C
c			ΔHf			Fire Point
t _x to			ΔFf			M Spec. Ultra V. X-Ray Dif. Infrared
t _x °C			Viscosity centistokes °C			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
A' to			B ^v to			
B' °C			A ^v °C			
C' °C			(B ^v)			
A'° to			(A ^v)			
B'° °C			c _p liq. °			
Ac to			c _p vap. °K			
Bc °C			c _v vap.			
Cc °C						
Cryos. A° const. B°						
t _e °C	357.94	5				

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 17

NAME		1-Chloroheptadecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₆ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	¹⁷ C ₁₇ ¹ H ₃₅ ¹ Cl	Molecular Weight	274.907		
		Ref.			Ref.	Ref.	
F. P. °C	26.2	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0625	5	h	
760 mm	335.	3	t _e	0.0344	5	f'	to
100	254.	3	t _e (d, e)	0.9359	5	g'	°K
30	217.	3	ΔHm cal/g			h'	
10	189.	3	ΔHv cal/g			m	to
1	140.	5	25°C			n	°K
Pressure mm 25°C			30 mm	61.87	5	o	
t _e	1592.5	5	BP	51.19	5	m'	to
Density g/ml 20°C	0.8646 ^b	3	t _e	47.76	5	n'	°K
25	0.8610 ^b	3	t _e (d, e)	47.74	5	o'	
d ₄ 30			ΔHv/T _e	20.32	5	Surface tension dynes/cm. 20°C	
a	0.8790	5	d 217 to	81.56	5	28.46	5
b	-0.03720	5	e 393 °C	0.0907	5	30	5
Ref. Index n _D 20°C	1.4519 ^b	3	d' to			40	5
25	1.4500 ^b	3	e' °C			Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.6920	4	v _c ml/g			30	
MR (Obs.)	85.760	4	t _c °C			40	
MR (Calc.)	85.573	5	P _c mm			Sugd.	734.4 5
(nD-d/2)			PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 217 to	7.543	3	BP	0.9187	5	Flash Point °C	
B 403 °C	2378.8	3	t _e	0.8858	5	Fire Point	
C	175.	3	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 217 to	2.260	5	ΔHc kcal/m			Solubility in ⁺	
B* 393 °C	2286.1	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to			η °C			Ether	
t _x °C			B ^v to			n-Heptane	
A' to			A ^v °C			Ethanol	
B' °C			(B ^v) to			Water	
C' °C			(A ^v) °C			Water in	
A'* to			c _p liq. °K				
B'* °C			c _p vap. °K				
Ac to			c _v vap.				
Bc t _c °C							
Cc °C							
Cryos. A°							
const. B°							
t _e °C	372.99	5					

^b For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorooctadecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₇ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₁₈ H ₃₇ Cl	Molecular Weight	288.933		
		Ref.			Ref.		
F. P. °C	28.6	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°
B. P. °C			BP	0.0634	5	h	---
760 mm	348.	3	t _e	0.0344	5	f'	to
100	265.	3	t _e 30 mm	0.9519	5	g'	°
30	228.	3	ΔHm cal/g			h'	
10	199.	3	ΔHv cal/g			m	to
1	150.	5	25°C			n	°K
Pressure mm 25°C			30 mm	60.43	5	o	
t _e	1622.0	5	BP	49.46	5	m'	to
Density g/ml 20°C	0.8641 ^b	3	t _e	46.44	5	n'	°K
d ₄ ^t 25	0.8605 ^b	3	t _e (d, e)	45.90	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.32	5	Surface tension dynes/cm. 20°C	
a	0.8785	5	d 228 to	81.21	5	γ	28.62
b	-0.03720	5	e 407 °C	0.0912	5		27.68
Ref. Index n _D 20°C	1.4531 ^b	3	d' to				26.76
25	1.4513 ^b	3	e' °C			Parachor [P]	
30			d g/ml			20°C	
"C"	0.6941	4	v _c ml/g			30	
MR (Obs.)	90.395	4	t _c °C			40	
MR (Calc.)	90.191	5	P _c mm			Sugd.	773.4
(n _D -d/2)			PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C			Dispersion	
A 228 to	7.573	3	30 mm	1.0000	5	Flash Point °C	
B 1417 °C	2443.5	3	BP	0.9075	5	Fire Point	
C	173.	3	t _e	0.8830	5	M Spec.	
A* 228 to	2.308	5	t _c			Ultra V.	
B* 407 °C	2350.7	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
c			ΔFf			Solubility in +	
t _k to			Viscosity centistokes			Acetone	
t _x °C			η °C			Carbon tet.	
A' to			B ^v to			Benzene	
B' °C			A ^v °C			Ether	
C'			(B ^v)			n-Heptane	
A'* to			(A ^v)			Ethanol	
B'* °C			c _p liq. °			Water	
Ac to			c _p vap. °K			Water in	
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A' consts. B'							
t _e °C	387.06	5					
			^b For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 19

NAME		1-Chloronadecane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₈ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₁₉ H ₃₉ Cl	Molecular Weight	302.959		
		Ref.			Ref.		
F. P. °C	35.7	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0643	5	h	
760 mm	361.	3	t _e	0.0343	5	f'	to
100	277.	3	t _e (d, e)	0.9676	5	g'	°K
30	239.	3	ΔHm cal/g			h'	
10	210.	3	ΔHv cal/g			m	to
1	160.	5	25°C			n	°K
Pressure mm 25°C			30 mm	59.30	5	o	
t _e	1653.0	5	BP	48.60	5	m'	to
Density g/ml 20°C	0.8636 ^b	3	t _e	45.34	5	n'	°K
25	0.8601 ^b	3	t _e (d, e)	45.01	5	o'	
d ₄ 30			ΔHv/T _e	20.35	5	Surface tension dynes/cm. 20°C	
a	0.8776	5	d 239 to	80.33	5	γ	28.76
b	-0.03700	5	e 422 °C	0.0879	5		30 27.84
Ref. Index n _D 20°C	1.4542 ^b	3	d'				40 26.94
25	1.4524 ^b	3	e'			Parachor [P] 20°C	
30			d _c g/ml				30
"C"	0.6961	4	v _c ml/g				40
MR (Obs.)	95.037	4	t _c °C				Sugd. 812.4
MR (Calc.) (nD-d/2)	94.809	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 239 to	7.600	3	30 mm	1.0000	5	Flash Point °C	
B 432 °C	2505.7	3	BP	0.9097	5	Fire Point	
C	170.	3	t _e	0.8802	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 239 to	2.351	5	t _c			Solubility in ⁺	
B* 422 °C	2413.2	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
t _k to °C			ΔFf			Benzene	
t _x to °C			Viscosity centistokes			Ether	
A' to °C			η °C			n-Heptane	
B' to °C			B ^v to °C			Ethanol	
C' to °C			A ^v to °C			Water	
A'* to °C			(B ^v) to °C			Water in	
B'* to °C			(A ^v) °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	401.85	5					

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chloroeicosane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₉ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₄₁ Cl	Molecular Weight	316.985		
		Ref.			Ref.		
F. P. °C	37.6	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°
B. P. °C			BP	0.0652	5	h	to
760 mm	373.	3	t _e	0.0343	5	f'	to
100	288.	3				g'	°
30	249.	3	30 mm	0.9832	5	h'	
10	219.	3					
1	169.	5	ΔHm cal/g				
Pressure mm 25°C			ΔHv cal/g			m	to
t _e	1681.4	5	25°C			n	°K
Density g/ml 20°C	0.8632 ^b	3	30 mm	58.03	5	o	
d ^t ₄	0.8597 ^b	3	BP	47.51	5		
			t _e	44.17	5	m'	to
			t _e (d, e)	43.90	5	n'	°K
			ΔHv/T _e	20.33	5	o'	
a	0.8772	5	d 249 to	79.26	5	Surface tension dynes/cm. 20°C	
b	-0.03700	5	e 435 °C	0.0851	5	30	28.90
			d'			40	27.97
			e'			40	27.07
Ref. Index n _D 20°C	1.4552 ^b	3	d			Parachor [P]	
25	1.4534 ^b	3	v			20°C	
30			c			30	
"C"	0.6979	4	t			40	
MR (Obs.)	99.672	4	c			Sugd.	851.4
MR (Calc.)	99.427	5	P				5
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 249 to	7.624	3	25°C			Dispersion	
B 445 °C	2566.1	3	30 mm	1.0000	5	Flash Point °C	
C	168.	3	BP	0.9090	5	Fire Point	
			t _e	0.8777	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 249 to	2.390	5				Solubility in +	
B* 435 °C	2473.5	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k to			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' to						Ethanol	
B' °C			B ^v to			Water	
C'			A ^v °C			Water in	
A'* to °C			(B ^v)				
B'* to °C			(A ^v)				
Ac to			c _p liq. °				
Bc to			c _p vap. °K				
Cc t _c °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	415.43	5					
^b For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 21

NAME		1-Chloroheneicosane			STRUCTURAL FORMULA	
					CH ₃ (CH ₂) ₁₉ CH ₂ Cl	
Mole % Pur.	Ref. 3	Molecular Formula	C ₂₁ H ₄₃ Cl	Molecular Weight	331.011	
		Ref.				Ref.
F. P. °C	44.	3	dt/dP °C/mm			f to
F. P. 100%			25°C			g °K
B. P. °C			BP	0.0753	5	h
760 mm	384.	3	t _e	0.0400	5	f' to
100	288.	5	30 mm	1.0681	5	g' °K
30	246.	5	ΔHm cal/g			h'
10	213.	5				m to
1	159.	5	ΔHv cal/g			n °K
Pressure mm 25°C			25°C			o
t _e	1706.8	5	30 mm	50.40	5	
Density g/ml 20°C	0.8628 ^a	3	BP	40.44	5	m' to
t ₂₅	0.8593 ^a	3	t _e (d, e)	37.20	5	n' °K
d ₄ ^t 30			t _e	36.81	5	o'
			ΔHv/T _e	17.40	5	
a	0.8768	5	d 246 to	68.07	5	Surface tension dynes/cm. 20°C
b	-0.03700	5	e 455 °C	0.0719	5	γ
Ref. Index n _D 20°C			d' to			30 29.01 5
25	1.4561 ^a	3	e' °C			40 28.08 5
30	1.4543 ^a	3				27.18 5
"C"	0.6995	4	d _c g/ml			Parachor [P] 20°C
MR (Obs.)	104.308	4	v _c ml/g			30
MR (Calc.) (nD-d/2)	104.045	5	t _c °C			40
Dielectric			P _c mm			Sugd. 890.4 5
A 246 to	7.05589	5	PV/RT 25°C			Exp. L.l. %/wt. u.
B 465 °C	2296.3	5	30 mm	1.0000	5	Dispersion
C	166.	5	BP	0.9027	5	Flash Point °C
A* 246 to	1.83439	5	t _e	0.8668	5	Fire Point
B* 455 °C	2201.0	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared
K			ΔHc kcal/m			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
c			ΔHf			
t _x to			ΔFf			
t _x °C			Viscosity centistokes η °C			
A' to						
B' °C			B ^v to			
C' °C			A ^v °C			
A'* to			(B ^v) to			
B'* °C			(A ^v) °C			
Ac to			c _p liq. °K			
Bc t _c °C			c _p vap. °K			
Cc °C			c _v vap.			
Cryos. A* const. B*						
t _e °C	434.54	5				

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorodocosane		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₂₀ CH ₂ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₂₂ H ₄₅ Cl	Molecular Weight	345.037
F.P. °C	45.	Ref.	3	dt/dP °C/mm	Ref.
F.P. 100%				25°C	
B.P. °C	395.		3	BP	0.0765
760 mm	298.		5	t _e	0.0401
100	254.		5	30 mm	1.0852
30	221.		5	ΔHm cal/g	
10	167.		5	ΔHv cal/g	
1				25°C	
Pressure mm 25°C				30 mm	49.22
t _e	1732.2		5	BP	39.40
Density g/ml 20°C	0.8624 ^a		3	t _e	36.14
d ₄ ^t 25	0.8590 ^a		3	t _e (d, e)	35.75
d ₄ ^t 30				ΔHv/T _e	17.31
a	0.8760		5	d 254 to	66.98
b	-0.03680		5	e 467 °C	0.0698
Ref. Index n _D 20°C	1.4570 ^a		3	d'	
25	1.4551 ^a		3	e'	
30				d v c g/ml	
"C"	0.7011		4	v c ml/g	
MR (Obs.)	108.964		4	t _c °C	
MR (Calc.)	108.663		5	P c mm	
Dielectric				PV/RT 25°C	
A 254 to	7.05866		5	30 mm	1.0000
B 477 °C	2335.4		5	BP	0.9010
C	164.		5	t _e	0.8641
A* 254 to	1.85145		5	t _c	
B* 467 °C	2240.1		5	ΔHc kcal/m	
K				ΔHf	
c				ΔFf	
t _k to				Viscosity centistokes	
t _x °C				γ °C	
A' to				B ^v to	
B' °C				A ^v °C	
C' °C				(B ^v) to	
A ^{1*} to				(A ^v) °C	
B ^{1*} °C				c _p liq. °K	
Ac to				c _p vap. °K	
Bc t _c °C				c _v vap.	
Cc °C					
Cryos. A ^o const. B ^o					
t _e °C	447.35		5		

^a For undercooled liquid below normal F.P.		⁺ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula			
SOURCE: MCA			
PURIFICATION: MCA			
LITERATURE REFERENCES: 3 MCA			

TABLE II. CHLOROALKANES

No. 23

NAME		1-Chlorotricosane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂₁ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₃ H ₄₇ Cl	Molecular Weight 359.063				
		Ref.		Ref.		Ref.	
F.P. °C	51.	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C		g	°K	
B.P. °C			BP	0.0775	5		
760 mm	405.	3	t _e	0.0403	5		
100	306.	5	30 mm	1.1006	5		
30	262.	5	ΔHm cal/g				
10	229.	5	ΔHv cal/g				
1	174.	5	25°C				
Pressure mm 25°C			30 mm	48.06	5		
t _e	1754.7	5	BP	38.37	5		
Density g/ml 20°C	0.8621 ^a	3	t _e	35.08	5		
25	0.8586 ^a	3	t _e (d, e)	34.70	5		
d ₄ 30			ΔHv/T _e	17.20	5		
a	0.8761	5	d 262 to	65.90	5		
b	-0.03700	5	e 479 °C	0.0680	5		
Ref. Index			d' to				
n _D 20°C	1.4578 ^a	3	e' °C				
25	1.4559 ^a	3	d _c g/ml				
30			v _c ml/g				
"C"	0.7025	4	t _c °C				
MR (Obs.)	113.604	4	P _c mm				
MR (Calc.)	113.281	5	PV/RT				
(nD-d/2)			25°C				
Dielectric			30 mm	1.0000	5		
A 262 to	7.05971	5	BP	0.8993	5		
B 489 °C	2369.4	5	t _e	0.8614	5		
C	162.	5	t _c				
A* 262 to	1.86691	5	ΔHc kcal/m				
B* 479 °C	2274.3	5	ΔHf				
K			ΔFf				
t _k to			Viscosity centistokes				
t _x °C			η				
A' to							
B' °C			B ^v to				
C' °C			A ^v °C				
A'* to			(B ^v) to				
B'* °C			(A ^v) °C				
Ac t _c °C			c _p liq. °K				
Bc t _c °C			c _p vap. °K				
Cc t _c °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	459.00	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorotetracosane			STRUCTURAL FORMULA			
Mole % Pur.		Ref. 3	Molecular Formula $C_{24}H_{49}Cl$	Molecular Weight 373.089	$CH_3(CH_2)_{22}CH_2Cl$			
F. P. °C	52.	3	dt/dP °C/mm 25°C		Ref.	Ref.		
F. P. 100%			BP	0.0786	5	f to		
B. P. °C			t_e	0.0404	5	g °K		
760 mm	415.	3	30 mm	1.1160	5	h to		
100	315.	5				f' to		
30	270.	5	ΔH_m cal/g			g' °K		
10	237.	5				h'		
1	180.	5	ΔH_v cal/g 25°C			m to		
Pressure mm 25°C			30 mm	46.99	5	n °K		
t_e	1777.7	5	BP	37.43	5	o		
Density g/ml 20°C	0.8618 ^a	3	t_e (d, e)	34.13	5	m' to		
25	0.8584 ^a	3	$\Delta H_v/T_e$	33.74	5	n' °K		
d ₄ ^t 30				17.12	5	o'		
a	0.8754	5	d 270 to	64.88	5	Surface tension dynes/cm. 20°C		
b	-0.03680	5	e 491 °C	0.0661	5	30	29.32	5
Ref. Index n _D 20°C	1.4585 ^a	3	d' to			40	28.41	5
25	1.4566 ^a	3	e' °C				27.51	5
30			d _c g/ml			Parachor [P] 20°C		
"C"	0.7038	4	v _c ml/g			30		
MR (Obs.)	118.238	4	t _c °C			40		
MR (Calc.) (nD-d/2)	117.899	5	P _c mm			Sugd.	1007.4	5
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.		
A 270 to	7.06072	5	30 mm	1.0000	5	Dispersion		
B 501 °C	2403.5	5	BP	0.8978	5	Flash Point °C		
C	160.	5	t_e	0.8590	5	Fire Point		
A* 270 to	1.88129	5	ΔH_c kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared		
B* 491 °C	2308.3	5	ΔH_f			Solubility in +		
K			ΔF_f			Acetone		
t_x to			Viscosity centistokes °C			Carbon tet.		
t_x °C			η			Benzene		
A' to			B ^v to			Ether		
B' °C			A ^v °C			n-Heptane		
C' °C			(B ^v) to			Ethanol		
A'* to			(A ^v) °C			Water		
B'* °C			c _p liq. °K			Water in		
Ac to			c _p vap. °K					
Bc t _c °C			c _v vap.					
Cc °C								
Cryos. A* const. B*								
t_e °C	470.68	5						
* For undercooled liquid below normal F. P.			† grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

TABLE II. CHLOROALKANES

No. 25

NAME		1-Chloropentacosane			STRUCTURAL FORMULA	
					CH ₃ (CH ₂) ₂₃ CH ₂ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₂₅ H ₅₁ Cl	Molecular Weight	387.115	
		Ref.			Ref.	Ref.
F. P. °C	57.	3	dt/dP °C/mm			f to °K
F. P. 100%			25°C BP	0.0797	5	g to °K
B. P. °C			t _e	0.0406	5	h to °K
760 mm	425.	3	30 mm	1.1314	5	f' to °K
100	324.	5				g' to °K
30	278.	5				h'
10	244.	5				m to °K
1	187.	5				n to °K
						o to °K
Pressure mm 25°C			ΔHv cal/g			m' to °K
t _e	1800.6	5	25°C			n' to °K
Density g/ml 20°C	0.8615 ^a	3	30 mm	46.00	5	o
d _t 25	0.8581 ^a	3	BP	36.55	5	m' to °K
d ₄ 30		3	t _e	33.23	5	n' to °K
			t _e (d, e)	32.85	5	o'
			ΔHv/T _e	17.03	5	
a	0.8751	5	d 278 to	63.95	5	Surface tension dynes/cm. 20°C
b	-0.03680	5	e 502 °C	0.0645	5	30
			d' to °C			40
Ref. Index n _D 20°C	1.4592 ^a	3	e' to °C			29.41
25	1.4573 ^a	3				28.49
30			d _c g/ml			27.59
			v _c ml/g			
"C"	0.7050	4	t _c °C			Parachor [P] 20°C
MR (Obs.)	122.888	4	P _c mm			30
MR (Calc.) (nD-d/2)	122.517	5				40
						Sugd. 1046.4
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.
A 278 to	7.06172	5	30 mm	1.0000	5	Dispersion
B 512 °C	2437.5	5	BP	0.8963	5	Flash Point °C
C 158.		5	t _e	0.8566	5	Fire Point
			t _c			
A* 278 to	1.89512	5				M. Spec. Ultra V.
B* 502 °C	2342.4	5				X-Ray Dif.
K						Infrared
c			Viscosity centistokes			Solubility in ⁺
t _k to °C			η °C			Acetone
t _x to °C						Carbon tet.
A' to °C						Benzene
B' to °C						Ether
C' to °C						n-Heptane
						Ethanol
A'* to °C						Water
B'* to °C						Water in
Ac to °C						
Bc to °C						
Cc to °C						
Cryos. A° const. B°						
t _e °C	482.38	5				

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorohexacosane		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₂₄ CH ₂ Cl	
Mole % Pur.	Ref.	Molecular Formula	C ₂₆ H ₅₃ Cl	Molecular Weight	401.141
F. P. °C	58.	3			
F. P. 100%					
B. P. °C					
760 mm	434.	3		0.0806	5
100	331.	5		0.0407	5
30	286.	5		1.1460	5
10	251.	5			
1	193.	5			
Pressure mm 25°C					
t _e	1820.8	5			
Density g/ml 20°C	0.8613 ^a	3			
d ₄ ^t 25	0.8578 ^a	3			
d ₄ ^t 30					
a	0.8753	5			
b	-0.03700	5			
Ref. Index n _D 20°C	1.4598 ^a	3			
25	1.4579 ^a	3			
30					
"C"	0.7061	4			
MR (Obs.)	127.513	4			
MR (Calc.) (n _D -d/2)	127.135	5			
Dielectric					
A 286 to	7.06850	5			
B 523 °C	2474.9	5			
C	157.	5			
A* 286 to	1.91444	5			
B* 513 °C	2379.7	5			
K					
c					
t _x to					
t _x °C					
A' to					
B' °C					
C'					
A'*	to				
B'*	°C				
Ac to					
Bc t _c °C					
Cc					
Cryos. A' consts. B'					
t _e °C	492.89	5			
dt/dP °C/mm 25°C					
BP					
t _e 30 mm					
ΔHm cal/g					
ΔHv cal/g 25°C					
30 mm					
BP					
t _e					
t _e (d, e)					
ΔHv/T _e					
d 286 to	62.86	5			
e 513 °C	0.0626	5			
d' to					
e' °C					
d v c g/ml					
v c ml/g					
t _c °C					
P _c mm					
PV/RT 25°C					
30 mm					
BP					
t _e					
t _c					
ΔHc kcal/m					
ΔHf					
ΔFf					
Viscosity centistokes					
η °C					
B ^v to					
A ^v °C					
(B ^v) to					
(A ^v) °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f to					
g °K					
h					
f' to					
g' °K					
h'					
m to					
n °K					
o					
m' to					
n' °K					
o'					
Surface tension dynes/cm. 20°C					
γ 30	29.50	5			
40	28.55	5			
40	27.63	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1085.4	5			
Exp. L. l. %/wt. u. Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in					

^a For undercooled liquid below normal F. P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 27

NAME		1-Chloroheptacosane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂₅ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₇ H ₅₅ Cl	Molecular Weight 415.167				
		Ref.			Ref.		Ref.
F. P. °C	62.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0816	5	h	
760 mm	443.	3	t _e	0.0408	5	f'	to
100	339.	5	t _e 30 mm	1.1597	5	g'	°K
30	293.	5	ΔHm cal/g			h'	
10	258.	5	ΔHv cal/g			m	to
1	199.	5	25°C			n	°K
Pressure mm 25°C			30 mm	44.05	5	o	
t _e	1841.4	5	BP	34.87	5	m'	to
Density g/ml 20°C	0.8610 ^a	3	t _e	31.54	5	n'	°K
25	0.8576 ^a	3	t _e (d, e)	31.18	5	o'	
d ₄ 30			ΔHv/T _e	16.86	5	Surface tension dynes/cm. 20°C	
a	0.8746	5	d 293 to	61.96	5	γ	29.57
b	-0.03680	5	e 523 °C	0.0611	5		30 28.64
Ref. Index n _D 20°C	1.4604 ^a	3	e' to °C				40 27.74
25	1.4585 ^a	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g				30
"C"	0.7072	4	t _c °C				40
MR (Obs.)	132.166	4	P _c mm			Sugd. 1124.4	
MR (Calc.) (nD-d/2)	131.753	5	PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 293 to	7.06782	5	BP	0.8936	5	Flash Point °C	
B 533 °C	2503.8	5	t _e	0.8523	5	Fire Point	
C	155.	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 293 to	1.92587	5	ΔHc kcal/m			Solubility in ⁺	
B* 523 °C	2408.7	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
t _k to °C			Viscosity centistokes η °C			Benzene	
t _x to °C						Ether	
A' to °C			B ^v to °C			n-Heptane	
B' to °C			A ^v to °C			Ethanol	
C'			(B ^v) to °C			Water	
A'* to °C			(A ^v) to °C			Water in	
B'* to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* const. B*							
t _e °C	503.44	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorooctacosane		STRUCTURAL FORMULA		
				CH ₃ (CH ₂) ₂₆ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₂₈ H ₅₇ Cl	Molecular Weight	429.193	
		Ref.		Ref.		
F. P. °C	63.	3	dt/dP °C/mm		f to °K	
F. P. 100%			25°C		g °K	
B. P. °C			BP	0.0826	5	h to °K
760 mm	452.	3	t _e	0.0410	5	f' to °K
100	347.	5	t _e	1.1733	5	g' to °K
30	300.	5	30 mm			h' to °K
10	264.	5	ΔHm cal/g			m to °K
1	205.	5	ΔHv cal/g			n to °K
Pressure mm 25°C			25°C			o to °K
t _e	1861.3	5	30 mm	43.20	5	m' to °K
Density g/ml 20°C	0.8608 ^a	3	BP	34.11	5	n' to °K
d ^t 25	0.8574 ^a	3	t _e	30.75	5	o' to °K
d ₄ 30			t _e (d, e)	30.40	5	Surface tension dynes/cm. 20°C
			ΔHv/T _e	16.77	5	γ 30 29.64 5
a	0.8744	5	d 300 to °C	61.16	5	γ 40 28.72 5
b	-0.03680	5	e 534 to °C	0.0598	5	γ 40 27.81 5
Ref. Index n _D 20°C	1.4609 ^a	3	d' °C			Parachor [P] 20°C
25	1.4591 ^a	3	e' °C			30
30			d _c g/ml			40
"C"	0.7081	4	v _c ml/g			Sugd. 1163.4 5
MR (Obs.)	136.791	4	t _c °C			Exp. L. l. %/wt. u.
MR (Calc.) (nD-d/2)	136.371	5	P _c mm			Dispersion
Dielectric			PV/RT 25°C	1.0000	5	Flash Point °C
A 300 to °C	7.06715	5	30 mm	0.8921	5	Fire Point
B 544 °C	2532.7	5	BP	0.8499	5	M Spec. Ultra V. X-Ray Dif. Infrared
C	153.	5	t _e			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
A* 300 to °C	1.93737	5	t _e			
B* 534 °C	2438.0	5	ΔHc kcal/m			
K			ΔHf			
t _k to °C			ΔFf			
t _x to °C			Viscosity centistokes η °C			
A' to °C			B ^v to °C			
B' to °C			A ^v to °C			
C'			(B ^v) to °C			
A'*	to °C		(A ^v) to °C			
B'*	to °C		c _p liq. °K			
Ac to °C			c _p vap. °K			
Bc to °C			c _v vap.			
Cc to °C						
Cryos. A* const. B*						
t _e °C	513.98	5				

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 29

NAME		1-Chlorononacosane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_{27}\text{CH}_2\text{Cl}$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{29}\text{H}_{59}\text{Cl}$	Molecular Weight 443.219				
		Ref.		Ref.		Ref.	
F.P. °C	67.	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C		g	°K	
B.P. °C			BP	0.0834	5	h	
760 mm	460.	3	t _e	0.0411	5	f'	
100	354.	5	30 mm	1.1862	5	g'	
30	306.	5	ΔHm cal/g			h'	
10	270.	5	ΔHv cal/g			m	
1	211.	5	25°C			n	
Pressure mm			30 mm	42.30	5	o	
25°C			BP	33.35	5	m'	
t _e	1879.2	5	t _e	30.00	5	n'	
Density g/ml			t _e (d, e)	29.66	5	o'	
20°C	0.8606 ^a	3	ΔHv/T _e	16.69	5		
25	0.8572 ^a	3	d 306 to	60.17	5	Surface tension	
d ₄ 30			e 543 to	0.0583	5	dynes/cm. 20°C	
a	0.8742	5	d'			30	
b	-0.03680	5	e'			40	
Ref. Index						29.71	
n _D 20°C	1.4614 ^a	3				28.78	
25	1.4596 ^a	3				27.88	
30						5	
"C"	0.7090	4				Parachor [P]	
MR (Obs.)	141.426	4				20°C	
MR (Calc.)	140.989	5				30	
(nD-d/2)						40	
Dielectric						Sugd. 1202.4	
A 306 to	7.07213	5				5	
B 553 °C	2565.1	5				Exp. L. l. %/wt.	
C	152.	5				u.	
A* 306 to	1.95381	5				Dispersion	
B* 543 °C	2470.2	5				Flash Point °C	
K						Fire Point	
t _k to						M. Spec.	
t _x °C						Ultra V.	
A' to						X-Ray Dif.	
B' °C						Infrared	
C' °C						Solubility in ⁺	
A* to						Acetone	
B* °C						Carbon tet.	
Ac to						Benzene	
Bc t _c °C						Ether	
Cc °C						n-Heptane	
Cryos. A°						Ethanol	
const. B°						Water	
t _e °C	523.35	5				Water in	

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorotriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂₈ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₃₀ H ₆₁ Cl	Molecular Weight	457.245		
		Ref.			Ref.		
F.P. °C	67.	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C			g	to °K
B.P. °C			BP	0.0843	5	h	to °K
760 mm	468.	3	t _e	0.0412	5	f'	to °K
100	361.	5	t _e (d, e)			g'	to °K
30	313.	5	ΔHm cal/g			h'	to °K
10	277.	5	ΔHv cal/g			m	to °K
1	216.	5	25°C			n	to °K
Pressure mm 25°C			30 mm	41.50	5	o	to °K
t _e	1896.9	5	BP	32.64	5	m'	to °K
Density g/ml 20°C	0.8604 ^a	3	t _e	29.27	5	n'	to °K
d ^t 25	0.8570 ^a	3	ΔHv/T _e	28.94	5	o'	to °K
d ^t 30				16.61	5	Surface tension dynes/cm. 20°C	
a	0.8740	5	d 313 to	59.38	5	30	29.78
b	-0.03680	5	e 553 °C	0.0571	5	40	28.84
Ref. Index n _D 20°C			e' to °C			40	27.94
25	1.4619 ^a	3	d _c g/ml			Parachor [P]	
30	1.4600 ^a	3	v _c ml/g			20°C	
"C"	0.7098	4	t _c °C			30	
MR (Obs.)	146.072	4	P _c mm			40	
MR (Calc.) (n _D -d/2)	145.607	5	PV/RT 25°C			Sugd.	1241.4
Dielectric			30 mm	1.0000	5	Exp. L. l. %/wt. u.	
A 313 to	7.06993	5	BP	0.8897	5	Dispersion	
B 563 °C	2588.9	5	t _e	0.8460	5	Flash Point °C	
C	150.	5	t _c			Fire Point	
A* 313 to	1.96318	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 553 °C	2494.4	5	ΔHf			Solubility in +	
K			ΔFf			Acetone	
c			Viscosity centistokes			Carbon tet.	
t _k to °C			η °C			Benzene	
t _x to °C						Ether	
A' to °C						n-Heptane	
B' to °C			B ^v to °C			Ethanol	
C' to °C			A ^v to °C			Water	
A'* to °C			(B ^v) _l to °C			Water in	
B'* to °C			(A ^v) _l to °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	532.74	5					

^a For undercooled liquid below normal F.P. † grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 31

NAME		1-Chlorohentriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂₉ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₁ H ₆₃ Cl	Molecular Weight	471.271		
		Ref.			Ref.		Ref.
F. P. °C	71.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C			h	
760 mm	476.	3	BP	0.0852	5	f'	to
100	368.	5	t _e	0.0413	5	g'	°K
30	319.	5	30 mm	1.2110	5	h'	
10	282.	5	ΔHm cal/g			m	to
1	222.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1914.6	5	30 mm	40.71	5	m'	to
Density g/ml 20°C			BP	31.97	5	n'	°K
d ₄ ^t 25	0.8602 ^a	3	t _e (d, e)	28.60	5	o'	
d ₄ ^t 30	0.8568 ^a	3	ΔHv/T _e	16.53	5	Surface tension dynes/cm. 20°C	
a	0.8738	5	d 319 to	58.52	5	γ	29.83
b	-0.03680	5	e 562 °C	0.0558	5		30 28.90
Ref. Index n _D 20°C			d' °C				40 27.99
25	1.4624 ^a	3	d _c g/ml			Parachor [P] 20°C	
30	1.4605 ^a	3	v _c ml/g				30
"C"	0.7107	4	t _c °C				40
MR (Obs.)	150.728	4	P _c mm			Sugd. 1280.4	
MR (Calc.) (nD-d/2)	150.225	5	PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 319 to	7.07478	5	BP	0.8885	5	Flash Point °C	
B 572 °C	2621.2	5	t _e	0.8441	5	Fire Point	
C 149.	149.	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 319 to	1.97876	5	ΔHc kcal/m			Solubility in ⁺	
B* 562 °C	2526.8	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to			η			Ether	
t _x °C						n-Heptane	
A' to			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C' °C			(B ^v) to			Water in	
A** to			(A ^v) °C				
B** °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	542.12	5					
^a For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Chlorodotriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₀ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₃₂ H ₆₅ Cl	Molecular Weight	485.297		
		Ref.			Ref.		
F. P. °C	71.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0860	5	h	
760 mm	484.	3	t _e	0.0415	5	f'	to
100	374.	5	t _e (d, e)			g'	°K
30	326.	5	ΔHm cal/g			h'	
10	289.	5	ΔHv cal/g			m	to
1	227.	5	25°C			n	°K
Pressure mm			30 mm	40.00	5	o	
25°C			BP	31.34	5	m'	to
t _e	1932.1	5	t _e	27.94	5	n'	°K
Density g/ml			t _e (d, e)	27.64	5	o'	
20°C	0.8600 ^a	3	ΔHv/T _e	16.44	5	Surface tension dynes/cm. 20°C	
25	0.8566 ^a	3				30	29.89
d ₄ ^t 30						40	28.95
a	0.8736	5	d 326 to °C	57.84	5	40	28.04
b	-0.03680	5	e 572 to °C	0.0548	5	γ	
Ref. Index			d' to °C				
n _D 20°C	1.4628 ^a	3	e' to °C			Parachor [P]	
25	1.4609 ^a	3				20°C	
30			d _c g/ml			30	
"C"	0.7115	4	v _c ml/g			40	
MR (Obs.)	155.365	4	t _c °C			Sugd.	1319.4
MR (Calc.)	154.843	5	P _c mm				
(n _D -d/2)			PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C			u.	
A 326 to °C	7.07261	5	30 mm	1.0000	5	Dispersion	
B 582 to °C	2645.0	5	BP	0.8873	5	Flash Point °C	
C	147.	5	t _e	0.8421	5	Fire Point	
A* 326 to °C	1.98744	5	t _c			M Spec.	
B* 572 to °C	2551.0	5	ΔHc kcal/m			Ultra V.	
K			ΔHf			X-Ray Dif.	
c			ΔFf			Infrared	
t _k to °C			Viscosity centistokes			Solubility in +	
t _x to °C			η °C			Acetone	
A' to °C						Carbon tet.	
B' to °C			B ^v to °C			Benzene	
C' to °C			A ^v to °C			Ether	
A'* to °C			(B ^v) to °C			n-Heptane	
B'* to °C			(A ^v) to °C			Ethanol	
Ac to °C			c _p liq. °K			Water	
Bc to °C			c _p vap. °K			Water in	
Cc to °C			c _v vap.				
Cryos. A* const.							
B*							
t ₀ °C	551.53	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 33

NAME		1-Chlorotritriacontane			STRUCTURAL FORMULA			
					CH ₃ (CH ₂) ₃₁ CH ₂ Cl			
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₃ H ₆₇ Cl	Molecular Weight	499.323			
		Ref.				Ref.		
F. P. °C	75.	3	dt/dP			f	to	
F. P. 100%			°C/mm			g	°K	
B. P. °C			25°C			h		
760 mm	491.	3	BP	0.0868	5	f'	to	
100	380.	5	t _e	0.0416	5	g'	°K	
30	331.	5	30 mm	1.2341	5	h'		
10	294.	5	ΔHm cal/g			m	to	
1	232.	5	ΔHv cal/g			n	°K	
Pressure mm 25°C			25°C			o		
t _e	1947.8	5	30 mm	39.25	5	m'	to	
Density g/ml 20°C			BP	30.70	5	n'	°K	
t _e	0.8599 ^a	3	t _e	27.31	5	o'		
d ₄ ^t	0.8565 ^a	3	t _e (d, e)	27.03	5			
d ₄ ³⁰			ΔHv/T _e	16.37	5			
a	0.8735	5	d 331 to	56.98	5	Surface tension dynes/cm. 20°C		29.95
b	-0.03680	5	e 580 °C	0.0535	5	γ	30	29.01
Ref. Index n _D 25°C	1.4632 ^a	3	d' to °C				40	28.10
25	1.4613 ^a	3	e' to °C			Parachor [P] 20°C		
30			d g/ml				30	
"C"	0.7121	4	v _c ml/g				40	
MR (Obs.)	159.993	4	t _c °C				Sugd.	1358.4
MR (Calc.)	159.461	5	P _c mm			Exp. L. l. %/wt. u.		
(nD-d/2)			PV/RT 25°C			Dispersion		
Dielectric			30 mm	1.0000	5	Flash Point °C		
A 331 to	7.07589	5	BP	0.8863	5	Fire Point		
B 590 °C	2672.3	5	t _e	0.8405	5	M. Spec. Ultra V.		
C 146.		5	t _c			X-Ray Dif.		
A* 331 to	2.00097	5	ΔHc kcal/m			Infrared		
B* 580 °C	2578.2	5	ΔHf			Solubility in ⁺		
K			ΔFf			Acetone		
c			Viscosity centistokes			Carbon tet.		
t _k to °C			η			Benzene		
t _x to °C						Ether		
A' to °C			B ^v to °C			n-Heptane		
B' to °C			A ^v to °C			Ethanol		
C' to °C			(B ^v) to °C			Water		
A** to °C			(A ^v) to °C			Water in		
B** to °C			c _p liq. °K					
A _c to °C			c _p vap. °K					
B _c to °C			c _v vap.					
C _c to °C								
Cryos. A° const. B°								
t _e °C	559.76	5						
^a For undercooled liquid below normal F. P.						⁺ grams/100 grams solvent		
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Chlorotetratriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₂ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₃₄ H ₆₉ Cl	Molecular Weight	513.349		
		Ref.			Ref.	Ref.	
F. P. °C	75.	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C BP	0.0875	5	g	to °K
B. P. °C	498.	3	t _e	0.0417	5	h	
760 mm	387.	5				f'	to °K
100	337.	5				g'	to °K
30	299.	5				h'	
10	236.	5					
1			ΔHm cal/g				
Pressure mm 25°C			ΔHv cal/g			m	to °K
t _e	1962.4	5	25°C			n	to °K
			30 mm BP	38.57	5	o	
Density g/ml 20°C	0.8597 ^a	3	t _e	30.09	5		
d ^t 25	0.8563 ^a	3	t _e (d, e)	26.69	5	m'	to °K
d ₄ 30			ΔHv/T _e	26.41	5	n'	to °K
				16.29	5	o'	
a	0.8733	5	d 337 to	56.31	5	Surface tension dynes/cm. 20°C	
b	-0.03680	5	e 588 °C	0.0526	5	γ	29.99 5
			d' to °C				30 29.06 5
			e' to °C				40 28.14 5
Ref. Index n _D 20°C	1.4636 ^a	3	d c g/ml			Parachor [P]	
25	1.4617 ^a	3	v c ml/g				20°C
30			t c °C				30
"C"	0.7129	4	P c mm				40
MR (Obs.)	164.648	4	PV/RT			Sugd.	1397.4 5
MR (Calc.)	164.079	5	25°C			Exp. L. l. %/wt. u.	
(n _D -d/2)			30 mm BP	1.0000	5	Dispersion	
			t _e	0.8850	5	Flash Point °C	
Dielectric			t _c	0.8386	5	Fire Point	
A 337 to	7.07230	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
B 598 °C	2690.9	5	ΔHf			Solubility in +	
C	144.	5	ΔFf			Acetone	
A* 337 to	2.00826	5	Viscosity centistokes			Carbon tet.	
B* 588 °C	2597.6	5	η °C			Benzene	
K						Ether	
c			B ^v to °C			n-Heptane	
t _k to °C			A ^v to °C			Ethanol	
t _x to °C			(B ^v) to °C			Water	
A' to °C			(A ^v) to °C			Water in	
B' to °C			c _p liq. °K				
C'			c _p vap. °K				
A'* to °C			c _v vap.				
B'* to °C							
Ac to °C							
Bc to °C							
Cc to °C							
Cryos. A°							
consts. B°							
t _e °C	567.98	5					
^a For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 35

NAME		1-Chloropentatriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₃ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₃₅ H ₇₁ Cl	Molecular Weight 527.375				
		Ref.		Ref.			Ref.
F. P. °C	78.	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°K	
B. P. °C			BP	0.0883	5	h	
760 mm	505.	3	t _e	0.0418	5	f'	to
100	393.	5	30 mm	1.2555	5	g'	°K
30	343.	5	ΔHm cal/g			h'	
10	304.	5				m	to
1	241.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1977.9	5	30 mm	37.90	5		
Density g/ml 20°C			BP	29.54	5	m'	to
t 25	0.8595 ^a	3	t _e	26.15	5	n'	°K
t 30	0.8562 ^a	3	t _e (d, e)	25.87	5	o'	
t _d 30			ΔHv/T _e	16.24	5		
a	0.8727	5	d 343 to	55.53	5	Surface tension dynes/cm. 20°C	
b	-0.03660	5	e 596 °C	0.0515	5	γ	30.03
Ref. Index n _D 20°C	1.4639 ^a	3	d'			30	29.12
25	1.4621 ^a	3	e'			40	28.23
30						Parachor [P]	
"C"	0.7135	4	d _c g/ml			20°C	
MR (Obs.)	169.280	4	v _c ml/g			30	
MR (Calc.)	168.697	5	t _c °C			40	
(nD-d/2)			P _c mm			Sugd.	1436.4
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A 343	7.07553	5	30 mm	1.0000	5	Dispersion	
B 606 °C	2718.2	5	BP	0.8841	5	Flash Point °C	
C	143.	5	t _e	0.8370	5	Fire Point	
A* 343 to	2.02114	5	t _c			M. Spec. Ultra V.	
B* 596 °C	2624.8	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
t _k to			ΔFf			Solubility in ⁺	
t _x °C			Viscosity centistokes			Acetone	
A' to			η °C			Carbon tet.	
B' °C			B ^v to			Benzene	
C' °C			A ^v °C			Ether	
A* to			(B ^v) to			n-Heptane	
B* °C			(A ^v) °C			Ethanol	
Ac to			c _p liq. °K			Water	
Bc t _c °C			c _p vap. °K			Water in	
Cc t _c °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	576.22	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorohexatriacontane			STRUCTURAL FORMULA		
Mole % Pur.		Ref. 3	Molecular Formula C ₃₆ H ₇₃ Cl	Molecular Weight 541.401	CH ₃ (CH ₂) ₃₄ CH ₂ Cl		
		Ref.			Ref.		
F. P. °C	78.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	*K
B. P. °C			BP	0.0890	5	h	
760 mm	512.	3	t _e	0.0419	5	f'	to
100	399.	5	t _e (d, e)			g'	*K
30	348.	5	ΔHm cal/g			h'	
10	310.	5	ΔHv cal/g			m	to
1	246.	5	25°C			n	*K
Pressure mm 25°C			30 mm	37.26	5	o	
t _e	1992.7	5	BP	28.99	5	m'	to
Density g/ml 20°C	0.8594 ^a	3	t _e	25.60	5	n'	*K
d ^t 25	0.8561 ^a	3	ΔHv/T _e	25.34	5	o'	
d ^t 30				16.16	5	Surface tension dynes/cm. 20°C	
a	0.8726	5	d 348 to	54.82	5	30	30.08
b	-0.03660	5	e 604 °C	0.0505	5	30	29.17
Ref. Index n _D 20°C			d' to			40	28.28
25	1.4643 ^a	3	e' °C			Parachor [P]	
30	1.4624 ^a	3	d _c g/ml			20°C	
"C"	0.7141	4	v _c ml/g			30	
MR (Obs.)	173.931	4	t _c °C			40	
MR (Calc.) (n _D -d/2)	173.315	5	P _c mm			Sugd.	1475.4
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 348 to	7.07871	5	25°C			Dispersion	
B 614 °C	2745.4	5	30 mm	1.0000	5	Flash Point °C	
C	142.	5	BP	0.8829	5	Fire Point	
A* 348 to	2.03419	5	t _e	0.8351	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 604 °C	2652.4	5	t _c			Solubility in +	
K			ΔHc kcal/m			Acetone	
c			ΔHf			Carbon tet.	
t _k to			ΔFf			Benzene	
t _x °C			Viscosity centistokes			Ether	
A' to			η °C			n-Heptane	
B' °C			B _v to			Ethanol	
C'			A _v °C			Water	
A'* to			(B _v) to			Water in	
B'* °C			(A _v) °C				
Ac to			c _p liq. °K				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	584.44	5					
^a For undercooled liquid below normal F. P.			⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 37

NAME		1-Chloroheptatriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₅ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₇ H ₇₅ Cl	Molecular Weight	555.427		
		Ref.			Ref.		
F. P. °C	81.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C			h	
760 mm	519.	3	BP	0.0898	5	f'	to
100	405.	5	t _e	0.0420	5	g'	°K
30	354.	5	30 mm	1.2768	5	h'	
10	315.	5	ΔHm cal/g			m	to
1	251.	5				n	°K
Pressure mm 25°C			ΔHv cal/g			o	
t _e	2007.9	5	25°C			m'	to
Density g/ml 20°C			30 mm	36.68	5	n'	°K
25	0.8593 ^a	3	BP	28.47	5	o'	
d ₄ 30	0.8559 ^a	3	t _e	25.03	5	Surface tension dynes/cm. 20°C	
			t _e (d, e)	24.80	5	γ	30
			ΔHv/T _e	16.06	5		40
a	0.8729	5	d 354 to	54.28	5		30.13
b	-0.03680	5	e 613 °C	0.0497	5		29.19
Ref. Index n _D 20°C			d'				28.27
25	1.4646 ^a	3	e'				
30	1.4627 ^a	3	d _c g/ml			Parachor [P] 20°C	
"C"	0.7147	4	v _c ml/g				30
MR (Obs.)	178.557	4	t _c °C				40
MR (Calc.)	177.933	5	P _c mm				Sugd. 1514.4
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A 354 to	7.07519	5	30 mm	1.0000	5	Dispersion	
B 623 °C	2764.1	5	BP	0.8819	5	Flash Point °C	
C	140.	5	t _e	0.8335	5	Fire Point	
A* 354 to	2.04023	5	t _c			M. Spec. Ultra V.	
B* 613 °C	2671.5	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
t _k to			ΔFf			Solubility in ⁺	
t _x °C			Viscosity centistokes η °C			Acetone	
A' to						Carbon tet.	
B' °C			B ^v to			Benzene	
C'			A ^v °C			Ether	
A** to			(B ^v) to			n-Heptane	
B** °C			(A ^v) °C			Ethanol	
Ac to			c _p liq. °K			Water	
Bc °C			c _p vap. °K			Water in	
Cc °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	592.70	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorooctatriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₆ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₃₈ H ₇₇ Cl	Molecular Weight	569.453		
F. P. °C	81.						
F. P. 100%							
B. P. °C							
760 mm	525.	3		0.0904	5		
100	410.	5		0.0421	5		
30	359.	5		1.2863	5		
10	319.	5					
1	255.	5					
Pressure mm 25°C							
t _e	2020.6	5					
Density g/ml 20°C							
d ₄ ^t 25	0.8591 ^a	3		36.06	5		
d ₄ ^t 30	0.8558 ^a	3		27.95	5		
				24.54	5		
				24.31	5		
				16.01	5		
"a"	0.8723	5		53.54	5		
"b"	-0.03660	5		0.0487	5		
Ref. Index n _D 20°C							
25	1.4649 ^a	3					
30	1.4630 ^a	3					
"C"	0.7153	4					
MR (Obs.)	183.211	4					
MR (Calc.) (n _D -d/2)	182.551	5					
Dielectric							
A 359 to	7.07693	5					
B 630 °C	2786.2	5					
C	139.	5					
A* 359 to	2.05147	5					
B* 620 °C	2693.9	5					
K							
t _k to							
t _x °C							
A' to							
B' °C							
C'							
A'* to							
B'* °C							
Ac to							
Bc °C							
Cc t _c -							
Cryos. A* const. B*							
t _e °C	599.76	5					
dt/dP °C/mm 25°C							
BP				0.0904	5		
t _e 30 mm				0.0421	5		
				1.2863	5		
ΔHm cal/g							
ΔHv cal/g 25°C							
30 mm				36.06	5		
BP				27.95	5		
t _e (d, e)				24.54	5		
				24.31	5		
ΔHv/T _e				16.01	5		
d 359 to				53.54	5		
e 620 °C				0.0487	5		
d' to							
e' °C							
d _c g/ml							
v _c ml/g							
t _c °C							
P _c mm							
PV/RT 25°C							
30 mm				1.0000	5		
BP				0.8809	5		
t _e				0.8320	5		
t _c							
ΔHc kcal/m							
ΔHf							
ΔFf							
Viscosity centistokes							
η °C							
B ^v to							
A ^v °C							
(B ^v) to							
(A ^v) °C							
c _p liq. °K							
c _p vap. °K							
c _v vap.							
f to							
g °K							
h to							
f' °K							
g' to							
h' °K							
m to							
n °K							
o to							
m' °K							
n' to							
o' °K							
Surface tension dynes/cm. 20°C							
γ 30				30.16	5		
40				29.25	5		
40				28.35	5		
Parachor [P] 20°C							
30							
40							
Sugd. 1553.4							
Exp. L. l. %/wt. u.							
Dispersion							
Flash Point °C							
Fire Point							
M Spec. Ultra V. X-Ray Dif. Infrared							
Solubility in +							
Acetone							
Carbon tet.							
Benzene							
Ether							
n-Heptane							
Ethanol							
Water							
Water in							
* For undercooled liquid below normal F. P.				† grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 39

NAME		1-Chlorononatriacontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₇ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₉ H ₇₉ Cl	Molecular Weight	583.479		
		Ref.			Ref.		
F. P. °C	84.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0911	5	h	
760 mm	531.	3	t _e	0.0422	5	f'	to
100	415.	5	30 mm	1.2957	5	g'	°K
30	363.	5	ΔHm cal/g			h'	
10	324.	5				m	to
1	259.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	2034.0	5	30 mm	35.47	5		
Density g/ml 20°C			BP	27.46	5	m'	to
t	0.8590 ^a	3	t _e	24.05	5	n'	°K
d ₄	0.8557 ^a	3	t _e (d, e)	23.83	5	o'	
30			ΔHv/T _e	15.94	5		
a	0.8722	5	d 363 to	52.84	5	Surface tension dynes/cm. 20°C	
b	-0.03660	5	e 627 °C	0.0478	5	f	30.21
Ref. Index			d'			g	29.29
n _D 20°C	1.4652 ^a	3	e'			h	28.39
25	1.4633 ^a	3				Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.7158	4	v _c ml/g			30	
MR (Obs.)	187.849	4	t _c °C			40	
MR (Calc.)	187.169	5	P _c mm			Sugd.	1592.4
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 363 to	7.07864	5	25°C	1.0000	5	Dispersion	
B 637 °C	2808.4	5	30 mm	0.8802	5	Flash Point °C	
C	138.	5	BP	0.8307	5	Fire Point	
A* 363 to	2.06196	5	t _e			M. Spec. Ultra V.	
B* 627 °C	2716.1	5	t _c			X-Ray Dif.	
K			ΔHc kcal/m			Infrared	
t _k to			ΔHf			Solubility in ⁺	
t _x °C			ΔFf			Acetone	
A' to			Viscosity centistokes			Carbon tet.	
B' °C			η			Benzene	
C' °C						Ether	
A'* to			B ^v to			n-Heptane	
B'* °C			A ^v °C			Ethanol	
Ac to			(B ^v) to			Water	
Bc °C			(A ^v) °C			Water in	
Cc °C			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	606.86	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Chlorotetracontane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₃₈ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₄₀ H ₈₁ Cl	Molecular Weight	597.505		
		Ref.			Ref.		
F. P. °C	84.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	*K
B. P. °C			BP	0.0917	5	h	
760 mm	537.	3	t _e	0.0423	5	f'	to
100	420.	5	t _e (d, e)			g'	*K
30	368.	5	ΔHm cal/g			h'	
10	329.	5	ΔHv cal/g			m	to
1	263.	5	25°C			n	*K
Pressure mm 25°C			30 mm	34.91	5	o	
t _e	2046.6	5	BP	26.98	5	m'	to
Density g/ml 20°C			t _e	23.56	5	n'	*K
25	0.8589 ^a	3	t _e (d, e)	23.37	5	o'	
d ^t 25	0.8556 ^a	3	ΔHv/T _e	15.87	5	Surface tension dynes/cm. 20°C	
d ₄ 30						30	30.24
a	0.8721	5	d 368 to °C	52.20	5	40	29.33
b	-0.03660	5	e 634 to °C	0.0470	5	30	28.43
Ref. Index n _D 20°C			d' to °C			40	
25	1.4655 ^a	3	e' to °C			Parachor [P]	
30	1.4636 ^a	3	d _c g/ml			20°C	
"C"	0.7163	4	v _c ml/g			30	
MR (Obs.)	192.494	4	t _c °C			40	
MR (Calc.) (nD-d/2)	191.787	5	P _c mm			Sugd.	1631.4
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A 368 to °C	7.08033	5	30 mm	1.0000	5	Dispersion	
B 644 °C	2830.5	5	BP	0.8792	5	Flash Point °C	
C	137.	5	t _e	0.8292	5	Fire Point	
A* 368 to °C	2.07269	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 634 °C	2738.5	5	ΔHc kcal/m			Solubility in +	
K			ΔHf			Acetone	
c			ΔFf			Carbon tet.	
t _k to °C			Viscosity centistokes			Benzene	
t _x to °C			η °C			Ether	
A' to °C			B ^v to °C			n-Heptane	
B' to °C			A ^v to °C			Ethanol	
C' to °C			(B ^v) to °C			Water	
A'* to °C			(A ^v) to °C			Water in	
B'* to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A° const. B°							
t _e °C	613.93	5					
^a For undercooled liquid below normal F. P.		⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 41

NAME		2-Chloropropane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CHClCH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_3\text{H}_7\text{Cl}$	Molecular Weight 78.543				
		Ref.			Ref.		Ref.
F. P. °C	-117.18	3	dt/dP			f	
F. P. 100%			°C/mm			g	to
B. P. °C			25°C	0.0515	5	h	°K
760 mm	35.74	3	BP	0.0379	5		
100	-12.19	5	t_e	0.0355	5	f'	to
30	-33.31	5	30 mm	0.5285	5	g'	°K
10	-49.32	5	ΔH_m cal/g			h'	
1	-75.72	5	ΔH_v cal/g			m	to
Pressure mm 25°C	515.3	5	25°C	81.73	5	n	°K
t_e	826.4	5	30 mm	91.79	5	o	
Density g/ml 20°C	0.8617	3	BP	79.90	5		
d_4^{25}	0.8563	3	t_e	79.49	5	m'	to
d_4^{30}			t_e (d, e)	79.48	5	n'	°K
			$\Delta H_v/T_e$	20.05	5	o'	
a	0.8837	5	d -33 to	86.05	5	Surface tension dynes/cm. 20°C	
b	-0.00101	5	e 58 °C	0.1722	5	g	18.09
Ref. Index n_D 25°C	1.3777	3	e' to °C				17.13
30	1.3749	3					40 16.17
"C"	0.5863	4	d g/ml			Parachor [F] 20°C	
MR (Obs.)	20.999	4	v_c ml/g				
MR (Calc.) (nD-d/2)	20.921	5	t_c °C				
Dielectric			P_c mm				
A -33 to	6.91997	5	PV/RT			Exp. L. l. %/wt. u.	
B 68 °C	1081.4	5	25°C	0.9664	5	Dispersion	
C 58 °C	232.	5	30 mm	1.0000	5	Flash Point °C	
A* -33 to	1.28917	5	BP	0.9564	5	Fire Point	
B* 58 °C	1011.7	5	t_c	0.9541	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔH_c kcal/m			Solubility in ⁺	
t_k to °C			ΔH_f			Acetone	
t_x to °C			ΔF_f			Carbon tet.	
A' to °C			Viscosity centistokes η °C			Benzene	
B' to °C						Ether	
C' to °C			B^v to °C			n-Heptane	
A'* to °C			A^v to °C			Ethanol	
B'* to °C			(B^v) to °C			Water	
Ac to °C			(A^v) to °C			Water in	
Bc t_c °C			$c_{p \text{ liq.}}$ °K				
Cc t_c °C			$c_{p \text{ vap.}}$ °K				
Cryos. A° const. B°			$c_{v \text{ vap.}}$				
t_e °C	38.17	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Chlorobutane			STRUCTURAL FORMULA				
					CH ₃ CHClCH ₂ CH ₃				
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₉ Cl	Molecular Weight	92.569				
		Ref.			Ref.				
F.P. °C	-131.3	3	dt/dP °C/mm			f	to		
F.P. 100%			25°C	0.1510	5	g			
B.P. °C	68.25	3	BP	0.0414	5	h	to		
760 mm	15.83	5	t _e	0.0358	5	f'	to		
100	-7.29	5	30 mm	0.5791	5	g'			
30	-24.85	5	ΔHm cal/g			h'			
10	-53.81	5	ΔHv cal/g			m	to		
1			25°C	82.14	5	n	*K		
Pressure mm 25°C	151.6	5	30 mm	87.33	5	o			
t _e	914.0	5	BP	75.38	5				
Density g/ml 20°C	0.8732	3	t _e	74.47	5	m'	to		
25	0.8677	3	t _e (d, e)	74.44	5	n'	*K		
d ₄ ^t 30			ΔHv/T _e	19.85	5	o'			
a	0.8952	5	d	-7 to	86.17	5	Surface tension dynes/cm. 20°C	21.11	5
b	-0.00107	5	e	94 °C	0.1582	5	30	20.04	5
Ref. Index n _D 20°C	1.3971	3	e'	to °C			40	18.98	5
25	1.3942	3	d _c g/ml				Parachor [P] 20°C		
30			v _c ml/g				30		
"C"	0.6066	4	t _c °C				40		
MR (Obs.)	25.535	4	P _c mm				Sugd.	227.4	5
MR (Calc.) (n _D -d/2)	25.539	5	PV/RT 25°C	0.9858	5		Exp. L. l. %/wt. u.		
Dielectric			30 mm	1.0000	5		Dispersion		
A -7 to	6.94468	5	BP	0.9513	5		Flash Point °C		
B 104 °C	1195.8	5	t _e	0.9459	5		Fire Point		
C	226.	5	t _c				M Spec. Ultra V. X-Ray Dif. Infrared		
A* -7 to	1.35292	5	ΔHc kcal/m				Solubility in +		
B* 94 °C	1121.7	5	ΔHf				Acetone		
K			ΔFf				Carbon tet.		
c			Viscosity centistokes °C				Benzene		
t _k to °C							Ether		
t _x to °C			B ^v to °C				n-Heptane		
A' to °C			A ^v to °C				Ethanol		
B' to °C			(B ^v)				Water		
C' to °C			(A ^v)				Water in		
A ¹ * to °C			c _p liq. °						
B ¹ * to °C			c _p vap. °K						
Ac to °C			c _v vap.						
Bc to °C									
Cc to °C									
Cryos. A ¹ consts. B ¹									
t _e °C	74.17	5							
+ grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

TABLE II. CHLOROALKANES

No. 43

NAME		2-Chloro-2-methylpropane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CCl}(\text{CH}_3)_2$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_4\text{H}_9\text{Cl}$	Molecular Weight 92.569				
		Ref.			Ref.	Ref.	
F.P. °C	-25.4	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°C
B.P. °C			25°C	0.0829	5	h	
760 mm	50.7	3	BP	0.0396	5		
100	1.3	5	t_e	0.0359	5	f'	to
30	-20.1	5	30 mm	0.5311	5	g'	°C
10	-36.1	5				h'	
1	-62.2	5	ΔHm cal/g			m	to
Pressure mm 25°C			ΔHv cal/g			n	°K
t_e	294.8	5	25°C	75.99	5	o	
	863.8	5	30 mm	86.26	5		
Density g/ml 20°C	0.8420	3	BP	70.79	5	m'	to
d_t	0.8361	3	t_e	70.04	5	o'	°K
d_4			t_e (d, e)	69.94	5	n'	
			ΔHv/ T_e	19.78	5		
a	0.8658	5	d -20 to	81.87	5	Surface tension dynes/cm. 20°C	
b	-0.00113	5	e -75 to	0.2184	5	γ	18.20
Ref. Index			d'				30
n_D			e'				17.14
25	1.3857	3					40
30	1.3828	3	d_c g/ml			Parachor [F]	
"C"	0.6120	4	v_c ml/g				20°C
MR (Obs.)	25.806	4	t_c °C				30
MR (Calc.)	25.539	5	P_c mm				40
(nD-d/2)							Sugd.
Dielectric			PV/RT				227.4
A -20 to	6.62586	5	25°C	0.9754	5	Exp. L.l. %/wt.	
B -85 °C	972.6	5	30 mm	1.0000	5	u.	
C	209.	5	BP	0.9512	5	Dispersion	
A* -20 to	1.08083	5	t_e	0.9472	5	Flash Point °C	
B* 75 °C	913.4	5	t_c			Fire Point	
K			ΔHc kcal/m			M. Spec.	
t_k to			ΔHf			Ultra V.	
t_x °C			ΔFf			X-Ray Dif.	
A' to			Viscosity centistokes			Infrared	
B' °C			η			Solubility in ⁺	
C' °C						Acetone	
A'* to			B ^v to			Carbon tet.	
B'* °C			A ^v °C			Benzene	
Ac to			(B ^v)			Ether	
Bc °C			(A ^v)			n-Heptane	
Cc °C			c_p liq. °C			Ethanol	
Cryos. A°			c_p vap. °K			Water	
const. B°			c_v vap.			Water in	
t_e °C	54.61	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Chloropentane			STRUCTURAL FORMULA			
					CH ₃ CHClCH ₂ CH ₂ CH ₃			
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ Cl	Molecular Weight	106.595			
		Ref.			Ref.			
F. P. °C	-137.	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C		0.4158	5	g	
B. P. °C			BP		0.0445	5	h	to
760 mm	96.86	3	t _e		0.0361	5	f'	to
100	40.49	5	30 mm		0.6239	5	g'	
30	15.59	5	ΔHm cal/g				h'	
10	-3.33	5	ΔHv cal/g				m	to
1	-34.57	5	25°C		81.62	5	n	°K
Pressure mm	48.66	5	30 mm		83.03	5	o	
t _e	990.4	5	BP		71.21	5		
Density g/ml 20°C	0.8698	3	t _e		69.93	5	m'	to
d ₄ ^t 25	0.8646	3	t _e (d, e)		69.87	5	n'	°K
d ₄ ^t 30			ΔHv/T _e		19.66	5	o'	
a	0.8906	5	d	16 to	85.29	5	Surface tension dynes/cm. 20°C	
b	-0.00103	5	e	126 °C	0.1454	5	30	22.31
Ref. Index n _D 25	1.4069	3	e'	to			40	21.24
25	1.4046	3	e''	°C				20.21
30			d	g/ml			Parachor [P] 20°C	
"C"	0.6231	4	e	ml/g			30	
MR (Obs.)	30.161	4	c	°C			40	
MR (Calc.)	30.157	5	P	mm			Sugd.	266.4
Dielectric			PV/RT 25°C		0.9969	5	Exp. L. l. %/wt. u.	
A	16 to	5	30 mm		1.0000	5	Dispersion	
B	136 °C	5	BP		0.9470	5	Flash Point °C	
C	221.	5	t _e		0.9387	5	Fire Point	
A*	16 to	5	ΔHc kcal/m				M Spec. Ultra V. X-Ray Dif. Infrared	
B*	126 °C	5	ΔHf				Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K	1221.1	5	ΔFf					
t _c			Viscosity centistokes °C					
t _x			γ					
A'	to		B ^v to °C					
B'	to		A ^v to °C					
C'	to		(B ^v) to °C					
A'*	to		(A ^v) to °C					
B'*	to		c _p liq. °					
Ac	to		c _p vap. °K					
Bc	to		c _v vap.					
Cc	to							
Cryos. A° const. B°								
t _e °C	106.07	5						
+ grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

TABLE II. CHLOROALKANES

No. 45

NAME		3-Chloropentane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CH}_2\text{CHClCH}_2\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_5\text{H}_{11}\text{Cl}$	Molecular Weight 106.595				
		Ref.		Ref.		Ref.	
F. P. °C	-105.	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°K	
B. P. °C			BP	0.4304	5		
760 mm	97.79	3	t_e	0.0446	5		
100	41.32	5	t_e 30 mm	0.0361	5		
30	16.38	5	$\Delta\text{Hm cal/g}$	0.6245	5		
10	-2.56	5	$\Delta\text{Hv cal/g}$				
1	-33.81	5	25°C	82.08	5		
Pressure mm 25°C	46.77	5	30 mm	83.39	5		
t_e	993.0	5	BP	71.39	5		
Density g/ml 20°C	0.8731	3	t_e	70.09	5		
d_4^{25}	0.8681	3	t_e (d, e)	70.02	5		
d_4^{30}			$\Delta\text{Hv}/T_e$	19.65	5		
a	0.8931	5	d 16 to	85.81	5		
b	-0.03989	5	e 127 °C	0.1474	5		
Ref. Index n_D			d' °C				
20°C	1.4082	3	e' °C				
25	1.4059	3	d_c g/ml				
30			v_c ml/g				
"C"	0.6227	4	t_c °C				
MR (Obs.)	30.132	4	F_c mm				
MR (Calc.) (nD-d/2)	30.157	5	PV/RT				
Dielectric			25°C	0.9972	5		
A 16 to	6.95642	5	30 mm	1.0000	5		
B 137 °C	1295.2	5	BP	0.9469	5		
C	220.	5	t_e	0.9385	5		
A* 16 to	1.40005	5	t_c				
B* 127 °C	1217.8	5	$\Delta\text{Hc kcal/m}$				
K			ΔHf				
t_k to			ΔFf				
t_x °C			Viscosity centistokes				
A' to			η °C				
B' °C			B^v to				
C' °C			A^v °C				
A'* to			(B ^v) to				
B'* °C			(A ^v) °C				
Ac to			c_p liq. °K				
Bc °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A°							
const. B°							
t_e °C	107.11	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Chloro-2-methylbutane			STRUCTURAL FORMULA		
					(CH ₃) ₂ CClCH ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ Cl	Molecular Weight	106.595		
		Ref.			Ref.		
F.P. °C	-73.5	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.2770	5	g	°
B.P. °C	85.6	3	BP	0.0432	5	h	---
760 mm	30.8	5	t _e	0.0360	5	f'	to
100	6.6	5				g'	°
30	-11.8	5	ΔHm cal/g			h'	
10	-42.2	5				m	to
1			ΔHv cal/g			n	*K
Pressure mm 25°C	76.61	5	25°C	77.51	5	o	
t _e	960.4	5	30 mm	80.19	5		
Density g/ml 20°C	0.8653	3	BP	68.93	5		
d _t 25	0.8601	3	t _e (d, e)	67.85	5	m'	to
d ₄ 30			ΔHv/T _e	67.81	5	n'	*K
				19.73	5	o'	
a	0.8861	5	d 7 to	81.13	5	Surface tension dynes/cm. 20°C	
b	-0.00102	5	e 113 °C	0.1425	5	y	21.83 5
Ref. Index n _D 20°C	1.4055	3	d' to			30	20.78 5
25	1.4023	3	e' °C			40	19.75 5
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.6244	4	v _c ml/g			30	
MR (Obs.)	30.226	4	t _c °C			40	
MR (Calc.)	30.157	5	P _c mm			Sugd.	266.4 5
Dielectric			PV/RT 25°C	0.9931	5	Exp. L. l. %/wt. u.	
A 7 to	6.95902	5	30 mm	1.0000	5	Dispersion	
B 123 °C	1258.5	5	BP	0.9487	5	Flash Point °C	
C	223.	5	t _e	0.9415	5	Fire Point	
A* 7 to	1.41251	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 113 °C	1182.2	5	ΔHc kcal/m			Solubility in +	
K			ΔHf			Acetone	
c			ΔFf			Carbon tet.	
t _k --- to			Viscosity centistokes			Benzene	
t _x °C			η °C			Ether	
A' to						n-Heptane	
B' --- °C			B ^v to			Ethanol	
C' --- °C			A ^v --- °C			Water	
A'* to			(B ^v) ---			Water in	
B'* °C			(A ^v) ---				
Ac to			c _p liq. °				
Bc t _c °C			c _p vap. °K				
Cc t _c °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	93.49	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 47

NAME		2-Chloro-3-methylbutane			STRUCTURAL FORMULA		
					CH ₂ ClCH ₂ CH(CH ₃) ₂		
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₁₁ Cl	Molecular Weight 106.595				
		Ref.					Ref.
F.P. °C			dt/dP °C/mm		f	to	
F.P. 100%			25°C	0.3589	g	°K	
B.P. °C			BP	0.0440	h		
760 mm	92.8	3	t _e	0.0361	f'	to	
100	37.0	5	t _e 30 mm	0.6168	g'	°K	
30	12.4	5	ΔHm cal/g		h'		
10	-6.3	5	ΔHv cal/g		m	to	
1	-37.2	5	25°C	80.22	n	°K	
Pressure mm	57.29	5	30 mm	82.12	o		
t _e °C	979.7	5	BP	70.38	m'	to	
Density g/ml	0.862	3	t _e	69.17	n'	°K	
25°C	0.857	3	t _e (d, e)	69.11	o'		
t			ΔHv/T _e	19.68			
d ₄ 30			d 12 to	83.93	Surface tension dynes/cm. 20°C		
a	0.8820	5	e 122 °C	0.1460	y	21.51	5
b	-0.03986	5	d'			30	5
Ref. Index			e'			40	5
n _D 20°C	1.402	3	d _c g/ml		Parachor [P] 20°C		
25	1.400	3	v _c ml/g			30	
30			t _c °C			40	
"C"	0.6216	4	P _c mm		Sugd.	266.4	5
MR (Obs.)	30.111	4	PV/RT		Exp. L.l. %/wt. u.		
MR (Calc.) (nD-d/2)	30.157	5	25°C	0.9957	Dispersion		
Dielectric			30 mm	1.0000	Flash Point °C		
A 12 to	6.95438	5	BP	0.9476	Fire Point		
B 132 °C	1278.3	5	t _e	0.9398	M. Spec. Ultra V. X-Ray Dif. Infrared		
C	221.	5	t _c		Solubility in ⁺		
A* 12 to	1.40222	5	ΔHc kcal/m		Acetone		
B* 122 °C	1201.4	5	ΔHf		Carbon tet.		
K			ΔFf		Benzene		
t _k to			Viscosity centistokes		Ether		
t _x °C			η		n-Heptane		
A' to					Ethanol		
B' °C			B ^v to		Water		
C' °C			A ^v °C		Water in		
A* to			(B ^v) to				
B* °C			(A ^v) °C				
Ac to			c _p liq. °K				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	101.53	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Chloro-2, 2-dimethylpropane			STRUCTURAL FORMULA		
					CH ₂ ClC(CH ₃) ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ Cl	Molecular Weight	106.595		
		3					
F. P. °C	-20.	3		dt/dP °C/mm		f	to
F. P. 100%				25°C	0.2645	g	°
B. P. °C				BP	0.0431	h	---
760 mm	84.3	3		t _e	0.0360	f'	to
100	29.7	5		30 mm	0.6040	g'	°
30	5.6	5		ΔHm cal/g		h'	
10	-12.8	5		ΔHv cal/g		m	to
1	-43.0	5		25°C	77.06	n	*K
Pressure mm 25°C	80.66	5		30 mm	79.90	o	
t _e	957.0	5		BP	68.67		
Density g/ml 20°C	0.8660	3		t _e	67.61	m'	to
d ^t 25	0.8609	3		t _e (d, e)	67.56	n'	*K
d ^t 30				ΔHv/T _e	19.73	o'	
a	0.8864	5		d 6 to	80.69	Surface tension dynes/cm. 20°C	
b	-0.00100	5		e 112 °C	0.1426	30	21.90
Ref. Index n _D 20°C	1.4044	3		d' to		40	20.87
25	1.4021	3		e' °C			19.85
30				d _c g/ml		Parachor [P]	
"C"	0.6223	4		v _c ml/g		20°C	
MR (Obs.)	30.129	4		t _c °C		30	
MR (Calc.)	30.157	5		P _c mm		40	
Dielectric				PV/RT		Sugd.	266.4
A 6 to	6.95488	5		25°C	0.9927	Exp. L. l. %/wt.	
B 122 °C	1252.0	5		30 mm	1.0000	u.	
C	223.	5		BP	0.9489	Dispersion	
A* 6 to	1.40975	5		t _e	0.9419	Flash Point °C	
B* 112 °C	1175.9	5		t _c		Fire Point	
K				ΔHc kcal/m		M Spec.	
c				ΔHf		Ultra V.	
t _x to				ΔFf		X-Ray Dif.	
t _x °C				Viscosity centistokes		Infrared	
A' to				η °C		Solubility in +	
B' °C				B ^v to		Acetone	
C' °C				A ^v °C		Carbon tet.	
A'* to				(B ^v)		Benzene	
B'* °C				(A ^v)		Ether	
A _c to				c _p liq. °		n-Heptane	
B _c °C				c _p vap. °K		Ethanol	
C _c °C				c _v vap.		Water	
Cryos. A°						Water in	
const. B°							
t _e °C	92.04	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 49

NAME		2-Chloro-2, 3-dimethylbutane			STRUCTURAL FORMULA		
					(CH ₃) ₂ CClCH(CH ₃) ₂		
Mole % Pur.	Ref. 3	Molecular Formula C ₆ H ₁₃ Cl	Molecular Weight 120.621				
		Ref.			Ref.		
F. P. °C	-10.4	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°C
B. P. °C			BP	0.7291	5	h	
760 mm	112.0	3	t _e	0.0461	5	f'	to
100	53.6	5	30 mm	0.0363	5	g'	°C
30	27.7	5	ΔHm cal/g	0.6472	5	h'	
10	8.1	5					
1	-24.3	5	ΔHv cal/g			m	to
Pressure mm 25°C	26.04	5	25°C	77.16	5	n	°K
t _e	1030.7	5	30 mm	76.79	5	o	
Density g/ml 20°C	0.8780	3	BP	65.58	5	m'	to
t _e	0.8730	3	t _e	64.19	5	n'	°K
d ^t 25			t _e (d, e)	64.12	5	o'	
d ⁴ 30			ΔHv/T _e	19.54	5		
a	0.8980	5	d 28 to	80.47	5	Surface tension dynes/cm. 20°C	
b	-0.03992	5	e 143 °C	0.1329	5	γ	24.41
Ref. Index n _D 20°C	1.4191	3	d'			30	23.30
25	1.4175	3	e'			40	22.23
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.6348	4	v _c ml/g			30	
MR (Obs.)	34.701	4	t _c °C			40	
MR (Calc.) (nD-d/2)	34.775	5	P _c mm			Sugd.	305.4
Dielectric			PV/RT 25°C	1.0007	5	Exp. L. l. %/wt. u.	
A 28 to	6.97297	5	30 mm	1.0000	5	Dispersion	
B 153 °C	1350.4	5	BP	0.9447	5	Flash Point °C	
C	218.	5	t _e	0.9350	5	Fire Point	
A* 28 to	1.45785	5	t _c			M. Spec. Ultra V.	
B* 143 °C	1271.0	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
c			ΔFf			Solubility in ⁺	
t _k to			Viscosity centistokes			Acetone	
t _x °C			η			Carbon tet.	
A' to						Benzene	
B' °C						Ether	
C'			B ^v to			n-Heptane	
A'* to			A ^v °C			Ethanol	
B'* °C			(B ^v)			Water	
Ac to			(A ^v)			Water in	
Bc t _c °C			c _p liq. °C				
Cc °C			c _p vap. °K				
Cryos. A°			c _v vap.				
consts. B°							
t _e °C	123.03	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Chloro-3, 3-dimethylbutane			STRUCTURAL FORMULA		
					CH ₃ CHClC(CH ₃) ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₆ H ₁₃ Cl	Molecular Weight	120.621		
		Ref.			Ref.	Ref.	
F.P. °C	-0.9	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.7023	5	g	°
B.P. °C	111.	3	BP	0.0460	5	h	---
760 mm	53.	5	t _e	0.0363	5	f'	to
100	27.	5	30 mm	0.6455	5	g'	°
30	7.	5	ΔHm cal/g			h'	
10	-25.	5	ΔHv cal/g			m	to
1			25°C	76.86	5	n	°K
Pressure mm 25°C	27.14	5	30 mm	76.59	5	o	
t _e	1028.1	5	BP	65.41	5	m'	to
Density g/ml 20°C	0.8767	3	t _e	64.03	5	n'	°K
d ₄ ^t 25	0.8717	3	t _e (d, e)	63.96	5	o'	
d ₄ ^t 30			ΔHv/T _e	19.55	5	Surface tension dynes/cm. 20°C	
a	0.8967	5	d 27 to	80.17	5	30	24.26
b	0.03992	5	e 142 to	0.1330	5	40	23.16
Ref. Index n _D 20°C	1.4182	3	d' to			40	22.09
25	1.4162	3	e' to			Parachor [P] 20°C	
30			d c g/ml			30	
"C"	0.6344	4	v c ml/g			40	
MR (Obs.)	34.687	4	t c °C			Sugd.	305.4
MR (Calc.) (n _D -d/2)	34.775	5	P c mm			Exp. L.l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0005	5	Dispersion	
A 27 to	6.97002	5	30 mm	1.0000	5	Flash Point °C	
B 152 °C	1345.4	5	BP	0.9450	5	Fire Point	
C	218.	5	t _e	0.9354	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 27 to	1.45575	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 142 °C	1266.1	5	ΔHc kcal/m				
K			ΔHf				
c			ΔFf				
t _k to			Viscosity centistokes				
t _x to			η °C				
A' to			B ^v to				
B' to			A ^v to				
C' to			(B ^v)				
A'° to			(A ^v)				
B'° to			c _p liq. °				
Ac to			c _p vap. °K				
Bc to			c _v vap.				
Cc to							
Cryos. A° const. B°							
t _e °C	121.91	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 51

NAME	Dichloromethane			STRUCTURAL FORMULA						
					CH ₂ Cl ₂					
Mole % Pur.	Ref. 3	Molecular Formula	CH ₂ Cl ₂	Molecular Weight	84.940					
		Ref.			Ref.					Ref.
F. P. °C	-95.14	3	dt/dP			f		to		
F. P. 100%			°C/mm			g		°K		
B. P. °C			25°C	0.0576	5	h				
760 mm	39.75	3	BP	0.0369	5	f'		to		
100	-7.27	3	t _e	0.0341	5	g'		°K		
30	-28.19	3	30 mm	0.5251	5	h'				
10	-44.14	3	ΔHm cal/g			m		to		
1	-70.59	5	ΔHv cal/g			n		°K		
Pressure mm 25°C	435.8	5	25°C	80.36	5	o				
t _e	838.5	5	30 mm	89.10	5	m'		to		
Density g/ml 20°C	1.3255	3	BP	77.98	5	n'		°K		
t _e	1.3163	3	t _e	77.53	5	o'				
d ₄ 25			t _e (d, e)	77.52	5	Surface tension dynes/cm. 20°C				
d ₄ 30			ΔHv/T _e	20.86	5	γ			28.00	5
a	1.3626	5	d -28 to	84.49	5				30	5
b	-0.00177	5	e 63 °C	0.1637	5				40	5
Ref. Index n _D 20°C	1.4242	3	d' to °C			Parachor [P]				
25	1.4216	3	d _c g/ml							
30			v _c ml/g							
"C"	0.4253	4	t _c °C							
MR (Obs.)	16.359	4	P _c mm			20°C				
MR (Calc.) (n _D -d/2)	16.552	5	PV/RT						147.6	5
Dielectric			25°C	0.9705	5	u.				
A -28	7.0803	3	30 mm	1.0000	5	Dispersion				
B 73 °C	1138.91	3	BP	0.9574	5	Flash Point °C				
C -	231.45	3	t _e			Fire Point				
A* -28	1.4767	5	t _c			M. Spec. Ultra V.				
B* 63 °C	1068.03	5	ΔHc kcal/m			X-Ray Dif.				
K			ΔHf			Infrared				
t _k to °C			ΔFf			Solubility in ⁺				
t _x to °C			Viscosity centistokes			Acetone				
A' to °C			η			Carbon tet.				
B' to °C						Benzene				
C' to °C						Ether				
A* to °C			B ^v to °C			n-Heptane				
B* to °C			A ^v to °C			Ethanol				
Ac to °C			(B ^v) to °C			Water				
Bc to °C			(A ^v) °C			Water in				
Cc to °C			c _p liq. °K							
Cryos. A° const. B°			c _p vap. °K							
t _e °C	42.54	5	c _v vap.							
* grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		1, 1-Dichloroethane		STRUCTURAL FORMULA	
				CH ₃ CHCl ₂	
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₄ Cl ₂	Molecular Weight 98.966		
F. P. °C	-96.98	3			
F. P. 100%					
B. P. °C					
760 mm	57.28	3	dt/dP °C/mm 25°C	0.1043	5
100	6.85	5	BP	0.0397	5
30	-15.45	5	t _e	0.0352	5
10	-32.40	5	30 mm	0.5589	5
1	-60.42	5			
Pressure mm 25°C			ΔHm cal/g		
t _e	227.7	5	ΔHv cal/g 25°C	73.60	5
	885.0	5	30 mm	79.51	5
Density g/ml 20°C			BP	68.99	5
d ₄ ^t 25	1.1757	3	t _e	68.34	5
d ₄ ^t 30	1.1679	3	t _e (d, e)	68.31	5
			ΔHv/T _e	20.18	5
a	1.2070	5	d -15 to	77.28	5
b	-0.00152	5	e 82 °C	0.1447	5
Ref. Index n _D 20°C			d' to		
25	1.4164	3	e' °C		
30	1.4140	3			
"C"	0.4712	4	d _c g/ml		
MR (Obs.)	21.142	4	v _c ml/g		
MR (Calc.) (nD-d/2)	21.170	5	t _c °C		
Dielectric			P _c mm		
A -15 to	6.9853	3	PV/RT 25°C	0.9805	5
B 92 °C	1171.42	3	30 mm	1.0000	5
C	228.12	3	BP	0.9535	5
A* -15 to	1.4322	5	t _e	0.9492	5
B* 82 °C	1098.56	5	t _e		
K			t _e		
c			ΔHc kcal/m		
t _k to			ΔHf		
t _x °C			ΔFf		
A' to			Viscosity centistokes °C		
B' °C			η		
C'					
A* to			B ^v to		
B* °C			A ^v °C		
Ac to			(B ^v) to		
Bc °C			(A ^v) °C		
Cc °C			c _p liq. °K		
Cryos. A°			c _p vap. °K		
consts. B°			c _v vap.		
t _e °C	61.95	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE II. CHLOROALKANES

No. 53

NAME		1, 1-Dichloropropane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CH}_2\text{CHCl}_2$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_3\text{H}_6\text{Cl}_2$	Molecular Weight	112.920		
F. P. °C		Ref.		dt/dP		Ref.	
F. P. 100%				°C/mm			f
B. P. °C				25°C	0.3055	5	g
760 mm	88.1	3		BP	0.0432	5	h
100	33.2	5		t_e	0.0358	5	f'
30	9.0	5		30 mm	0.6081	5	g'
10	-9.5	5		ΔH_m cal/g			h'
1	-40.0	5		ΔH_v cal/g			m
Pressure mm 25°C	68.30	5		25°C	74.52	5	n
t_e	967.4	5		30 mm	76.75	5	o
Density g/ml 20°C	1.1321	3		BP	66.02	5	m'
d ^t 25	1.1260	3		t_e	64.98	5	n'
d ⁴ 30				t_e (d, e)	64.92	5	o'
a	1.1565	5		$\Delta H_v/T_e$	19.86	5	
b	-0.00120	5		d 9 to	77.97	5	Surface tension
Ref. Index				e 116 to	0.1355	5	dynes/cm. 20°C
n _D 20°C	1.4289	3		d'			30
25	1.4266	3		e'			40
30				d _c g/ml			Parachor [P]
"C"	0.5031	4		v _c ml/g			20°C
MR (Obs.)	25.709	4		t_c °C			30
MR (Calc.)	25.788	5		P _c mm			40
Dielectric				PV/RT			Sugd.
A 9 to	6.982	3		25°C	0.9942	5	Exp. L. l. %/wt.
B 126 °C	1273.	3		30 mm	1.0000	5	u.
C	222.3	3		BP	0.9486	5	Dispersion
A* 9 to	1.458	5		t_e	0.9413	5	Flash Point °C
B* 116 °C	1196.	5		t_c			Fire Point
K				ΔH_c kcal/m			M. Spec.
c				ΔH_f			Ultra V.
t _k to				ΔF_f			X-Ray Dif.
t _x °C				Viscosity			Infrared
A' to				centistokes			Solubility in ⁺
B' °C				η			Acetone
C' °C							Carbon tet.
A'* to				B ^v to			Benzene
B'* °C				A ^v °C			Ether
Ac to				(B ^v) to			n-Heptane
Bc °C				(A ^v) °C			Ethanol
Cc °C				c _p liq. °K			Water
Cryos. A°				c _p vap. °K			Water in
const. B°				c _v vap.			
t _e °C	96.24	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1-Dichlorobutane			STRUCTURAL FORMULA	
					CH ₃ (CH ₂) ₂ CHCl ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₈ Cl ₂	Molecular Weight	127.018	
		Ref.			Ref.	Ref.
F. P. °C			dt/dP °C/mm			f to
F. P. 100%			25°C	0.8124	5	g °K
B. P. °C			BP	0.0456	5	h
760 mm	113.8	3	t _e	0.0357	5	f' to
100	55.9	5	t _e (d, e)	0.6449	5	g' °K
30	30.2	5	ΔHm cal/g			h'
10	10.6	5	ΔHv cal/g			m to
1	-21.8	5	25°C	75.09	5	n °K
Pressure mm 25°C	22.83	5	30 mm	74.39	5	o
t _e	1036.0	5	BP	63.73	5	m' to
Density g/ml 20°C	1.086	3	t _e	62.95	5	n' °K
d ^t 25	1.083	3	t _e	62.31	5	o'
d ⁴ 30			ΔHv/T _e	19.90	5	
a	1.0980	5	d 30 to	78.24	5	Surface tension
b	-0.03593	5	e 145 °C	0.1275	5	dynes/cm. 20°C
Ref. Index			d' to			30 25.60
n _D 20°C	1.4355	3	e' °C			40 25.02
25	1.433	3	d c g/ml			Parachor [P]
30			v c ml/g			20°C
"C"	0.5321	4	t c °C			30
MR (Obs.)	30.550	4	P c mm			40
MR (Calc.)	30.406	5	PV/RT			Sugd. 264.6
(n _D -d/2)			25°C	1.0014	5	Exp. L. l. %/wt.
Dielectric			30 mm	1.0000	5	u.
A 30 to	7.035	3	BP	0.9460	5	Dispersion
B 155 °C	1376.	3	t _e	0.9354	5	Flash Point °C
C	217.4	3	t _c			Fire Point
A* 30 to	1.540	5	ΔHc kcal/m			M Spec.
B* 145 °C	1296.	5	ΔHf			Ultra V.
K			ΔFf			X-Ray Dif.
c			Viscosity			Infrared
t _k to			centistokes			Solubility in +
t _x °C			η °C			Acetone
A' to			B ^v to			Carbon tet.
B' °C			A ^v °C			Benzene
C'			(B ^v) to			Ether
A'* to			(A ^v) °C			n-Heptane
B'* °C			c _p liq. °K			Ethanol
Ac to			c _p vap. °K			Water
Bc °C			c _v vap.			Water in
Cc °C						
Cryos. A* const. B*						
t _e °C	124.92	5				

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 55

NAME		1, 1-Dichloropentane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_3\text{CHCl}_2$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_5\text{H}_{10}\text{Cl}_2$	Molecular Weight 141.044				
		Ref.		Ref.		Ref.	
F. P. °C			dt/dP °C/mm		f	to	
F. P. 100%			25°C	2.333	5	°K	
B. P. °C			BP	0.0480	5		
760 mm	139.8	3	t_e	0.0357	5		
100	78.7	5	30 mm	0.6823	5		
30	51.5	5	$\Delta\text{Hm cal/g}$				
10	30.8	5	$\Delta\text{Hv cal/g}$				
1	-3.6	5	25°C	76.01	5		
Pressure mm 25°C	7.10	5	30 mm	72.55	5		
t_e	1104.1	5	BP	61.78	5		
Density g/ml 20°C	1.053	3	t_e	60.13	5		
d_t	1.048	3	t_e (d, e)	60.05	5		
d_4	30		$\Delta\text{Hv}/T_e$	19.86	5		
a	1.0730	5	d 52 to	78.84	5		
b	-0.03997	5	e 174 °C	0.1220	5		
Ref. Index n_D			d' °C				
20°C	1.434	3	e' °C				
25	1.432	3	d_c g/ml				
30			v_c ml/g				
"C"	0.5470	4	t_c °C				
MR (Obs.)	34.882	4	P_c mm				
MR (Calc.) (nD-d/2)	35.024	5	PV/RT				
Dielectric			25°C	1.0051	5		
A 52 to	7.077	3	30 mm	1.0000	5		
B 184 °C	1478.	3	BP	0.9418	5		
C	212.4	3	t_e	0.9291	5		
A* 52 to	1.608	5	t_c				
B* 174 °C	1396.	5	$\Delta\text{Hc kcal/m}$				
K			ΔHf				
t_k to			ΔFf				
t_x °C			Viscosity centistokes				
A' to			η °C				
B' °C			B^v to				
C' °C			A^v °C				
A** to			(B ^v) to				
B** °C			(A ^v) °C				
Ac to			c_p liq. °K				
Bc °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A°							
consts. B°							
t_e °C	153.99	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1, 1-Dichlorohexane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₄ CHCl ₂		
Mole % Pur.	Ref. 3	Molecular Formula	C ₆ H ₁₂ Cl ₂	Molecular Weight	155.070		
		Ref.			Ref.	Ref.	
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	6.667	5	g	°K
B. P. °C			BP	0.0501	5	h	
760 mm	164.	3	t _e	0.0357	5	f'	to
100	100.	5	t _e (d, e)			g'	°K
30	72.	5	ΔHm cal/g			h'	
10	50.	5	ΔHv cal/g			m	to
1	14.	5	25°C	76.68	5	n	°K
Pressure mm 25°C	2.24	5	30 mm	70.79	5	o	
t _e	1167.1	5	BP	59.96	5	m'	to
Density g/ml 20°C	1.029	3	t _e	58.14	5	n'	°K
d ^t 25	1.024	3	t _e	57.96	5	o'	
d ⁴ 30			ΔHv/T _e	19.85	5	Surface tension dynes/cm. 20°C	
a	1.0490	5	d 72 to	79.16	5	30	26.71
b	-0.03999	5	e 20 °C	0.1171	5	40	25.69
Ref. Index n _D 20°C	1.437	3	d' °C			30	24.69
25	1.435	3	e' °C			40	24.69
30			d _c g/ml			Parachor [P]	
"C"	0.5634	4	v _c ml/g			20°C	
MR (Obs.)	39.481	4	t _c °C			30	
MR (Calc.) (n _D -d/2)	39.642	5	P _c mm			40	
Dielectric			PV/RT			Sugd.	342.6
A 72 to	7.123	3	25°C	1.0057	5	Exp. L. l. %/wt. u.	
B 21 °C	1578.	3	30 mm	1.0000	5	Dispersion	
C	208.	3	BP	0.9372	5	Flash Point °C	
A* 72 to	1.678	5	t _e	0.9235	5	Fire Point	
B* 201 °C	1493.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in +	
c			ΔHf			Acetone	
t _k °C			ΔFf			Carbon tet.	
t _x °C			Viscosity centistokes			Benzene	
A' °C			η °C			Ether	
B' °C			B ^v to °C			n-Heptane	
C'			A ^v to °C			Ethanol	
A'* to °C			(B ^v) to °C			Water	
B'* to °C			(A ^v) °C			Water in	
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	181.06	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 57

NAME		1, 1-Dichloroheptane			STRUCTURAL FORMULA		
					$\text{CH}_3(\text{CH}_2)_5\text{CHCl}_2$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_7\text{H}_{14}\text{Cl}_2$	Molecular Weight	169.096		
F. P. °C		Ref.		dt/dP °C/mm		Ref.	
F. P. 100%				25°C	20.11	5	f to
B. P. °C				BP	0.0518	5	g °K
760 mm	187.	3		t_e	0.0355	5	h
100	121.	5		30 mm	0.7462	5	f' to
30	91.	5		ΔH_m cal/g			g' °K
10	68.	5					h'
1	31.	5		ΔH_v cal/g			m to
Pressure mm 25°C	0.67	5		25°C	77.93	5	n °K
t_e	1226.5	5		30 mm	69.60	5	o
Density g/ml 20°C	1.009	3		BP	58.70	5	m' to
d ⁴ 25	1.005	3		t_e	56.67	5	n' °K
d ⁴ 30				t_e (d, e)	56.46	5	o'
				$\Delta H_v/T_e$	19.97	5	
a	1.0250	5		d 91 to	79.93	5	Surface tension dynes/cm. 20°C
b	-0.03800	5		e 227 °C	0.1135	5	30
Ref. Index				d' to			40
n _D 20°C	1.440	3		e' °C			26.88
25	1.438	3					26.04
30				d _c g/ml			25.22
"C"	0.5783	4		v _c ml/g			
MR (Obs.)	44.168	4		t _c °C			Parachor [P]
MR (Calc.) (n _D -d/2)	44.260	5		P _c mm			20°C
Dielectric				PV/RT 25°C	1.0042	5	30
A 91 to	7.181	3		30 mm	1.0000	5	40
B 237 °C	1677.	3		BP	0.9343	5	Sugd.
C	203.	3		t_e	0.9185	5	381.6
A* 91 to	1.759	5		ΔH_c kcal/m			Exp. L. l. %/wt. u.
B* 227 °C	1591.	5		ΔH_f			Dispersion
K				ΔF_f			Flash Point °C
c				Viscosity centistokes			Fire Point
t _k to °C				η			M. Spec. Ultra V. X-Ray Dif. Infrared
t _x to °C							Solubility in +
A' to				B ^v to °C			Acetone
B' to °C				A ^v to °C			Carbon tet.
C' to °C				(B ^v) to °C			Benzene
A'* to °C				(A ^v) to °C			Ether
B'* to °C				c _p liq. °K			n-Heptane
Ac to °C				c _p vap. °K			Ethanol
Bc to °C				c _v vap.			Water
Cc to °C							Water in
Cryos. A°							
const. B°							
t _e °C	206.79	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1-Dichlorooctane		STRUCTURAL FORMULA		
				CH ₃ (CH ₂) ₆ CHCl ₂		
Mole % Pur.	Ref.	Molecular Formula	C ₈ H ₁₆ Cl ₂	Molecular Weight	183.122	
		Ref.			Ref.	
F.P. °C			dt/dP °C/mm		f to	
F.P. 100%			25°C	58.58	5	g °K
B.P. °C			BP	0.0534	5	h
760 mm	208.	3	t _e	0.0353	5	f' to
100	140.	5	30 mm	0.7736	5	g' °K
30	109.	5	ΔHm cal/g			h'
10	85.	5	ΔHv cal/g			m to
1	46.	5	25°C	78.61	5	n °K
Pressure mm 25°C	0.21	5	30 mm	68.20	5	o
t _e	1280.3	5	BP	57.37	5	m' to
Density g/ml 20°C	0.994	3	t _e	55.13	5	n' °K
d ₄ 25	0.990	3	t _e (d, e)	54.93	5	o'
d ₄ 30			ΔHv/T _e	20.05	5	
a	1.0100	5	d 109 to	80.09	5	Surface tension
b	-0.03800	5	e 250 °C	0.1092	5	dynes/cm. 20°C
Ref. Index			d' to			30 27.17 5
n _D 20°C	1.443	3	e' °C			40 26.30 5
25	1.441	3				40 25.46 5
30			d _v g/ml			Parachor [P]
"C"	0.5908	4	v _c ml/g			20°C
MR (Obs.)	48.841	4	t _c °C			30
MR (Calc.)	48.878	5	P _c mm			40
(n _D -d/2)			PV/RT			Sugd. 420.6 5
Dielectric			25°C	1.0015	5	Exp. L. l. %/wt.
A 109 to	7.237	3	30 mm	1.0000	5	u.
B 260 °C	1773.	3	BP	0.9321	5	Dispersion
C	199.	3	t _e	0.9140	5	Flash Point °C
A* 109 to	1.837	5	t _c			Fire Point
B* 250 °C	1685.	5	ΔHc kcal/m			M Spec.
K			ΔHf			Ultra V.
c			ΔFf			X-Ray Dif.
t _k to			Viscosity			Infrared
t _x °C			centistokes			Solubility in +
A' to			η °C			Acetone
B' °C			B ^v to			Carbon tet.
C' °C			A ^v °C			Benzene
A' * to			(B ^v) to			Ether
B' * °C			(A ^v) °C			n-Heptane
Cc to			c _p liq. °K			Ethanol
Bc °C			c _p vap. °K			Water
Cc °C			c _v vap.			Water in
Cryos. A' const. B'						
t _e °C	230.33	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

TABLE II. CHLOROALKANES

No. 59

NAME		1, 1-Dichlorononane			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₇ CHCl ₂		
Mole % Pur.	Ref. 3	Molecular Formula C ₉ H ₁₈ Cl ₂	Molecular Weight 197.148				
		Ref.			Ref.		Ref.
F. P. °C			dt/dP °C/mm		f	to	
F. P. 100%			25°C	164.9	g	°K	
B. P. °C			BP	0.0550	h		
760 mm	228.	3	t _e	0.0352	f'	to	
100	157.	5	30 mm	0.8017	g'	°K	
30	125.	5	ΔHm cal/g		h'		
10	101.	5	ΔHv cal/g		m	to	
1	60.	5	25°C	78.71	n	°K	
Pressure mm 25°C	0.07	5	30 mm	66.58	o		
t _e	1330.6	5	BP	55.82	m'	to	
Density g/ml 20°C	0.982	3	t _e	53.48	n'	°K	
t 25	0.978	3	t _e (d, e)	53.23	o'		
d ₄ 30			ΔHv/T _e	20.05			
a	0.9980	5	d 125 to °C	79.73		Surface tension dynes/cm. 20°C	
b	-0.03800	5	e 273 to °C	0.1048		30	27.47
Ref. Index n _D 20°C	1.445	3	d'			40	26.58
25	1.443	3	e'				25.72
30			d _c g/ml			Parachor [F] 20°C	
"C"	0.6005	4	v _c ml/g			30	
MR (Obs.)	53.433	4	t _c °C			40	
MR (Calc.)	53.496	5	P _c mm			Sugd.	459.6
(n _D -d/2)			PV/RT 25°C	0.9986	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 125 to °C	7.282	3	BP	0.9285	5	Flash Point °C	
B 283 °C	1866.	3	t _e	0.9093	5	Fire Point	
C	196.	3	ΔHc kcal/m			M. Spec. Ultra V.	
A* 125 to °C	1.903	5	ΔHf			X-Ray Dif.	
B* 273 °C	1776.	5	ΔFf			Infrared	
K			Viscosity centistokes η °C			Solubility in ⁺	
t _k to °C			B ^v to °C			Acetone	
t _x to °C			A ^v to °C			Carbon tet.	
A' to °C			(B ^v) to °C			Benzene	
B' to °C			(A ^v) to °C			Ether	
C' to °C			c _p liq. °K			n-Heptane	
A* to °C			c _p vap. °K			Ethanol	
B* to °C			c _v vap.			Water	
Ac to °C						Water in	
Bc to °C							
Cc to °C							
Cryos. A° const. B°							
t _e °C	252.78	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1-Dichlorodecane		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₈ CHCl ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₁₀ H ₂₀ Cl ₂	Molecular Weight	211.174
		Ref.			Ref.
F. P. °C			dt/dP °C/mm		f to °K
F. P. 100%			25°C	495.2	5
B. P. °C			BP	0.0563	5
760 mm	247.	3	t _e	0.0350	5
100	175.	5	30 mm	0.8250	5
30	142.	5	ΔHm cal/g		
10	117.	5	ΔHv cal/g		
1	75.	5	25°C	79.55	5
Pressure mm 25°C	0.02	5	30 mm	65.44	5
t _e	1378.1	5	BP	54.73	5
Density g/ml 20°C	0.972	3	t _e	52.20	5
d ^t 25	0.968	3	t _e (d, e)	51.97	5
d ₄ 30			ΔHv/T _e	20.15	5
a	0.9880	5	d 142 to °C	79.88	5
b	-0.03800	5	e 294 to °C	0.1018	5
Ref. Index n _D 20°C	1.447	3	d' to °C		
25	1.445	3	d _v g/ml		
30			v _c ml/g		
"C"	0.6093	4	t _c °C		
MR (Obs.)	58.048	4	P _c mm		
MR (Calc.)	58.114	5	PV/RT		
(n _D -d/2)			25°C	0.9948	5
Dielectric			30 mm	1.0000	5
A 142 to °C	7.334	3	BP	0.9266	5
B 304 °C	1955.	3	t _e	0.9052	5
C	192.	3	t _c		
A* 142 to °C	1.975	5	ΔHc kcal/m		
B* 294 °C	1865.	5	ΔHf		
K			ΔFf		
c			Viscosity centistokes		
t _k to °C			η °C		
t _x to °C			B ^v to °C		
A' to °C			A ^v to °C		
B' to °C			(B ^v) to °C		
C'			(A ^v) to °C		
A* to °C			c _p liq. °K		
B* to °C			c _p vap. °K		
Ac to °C			c _v vap.		
Bc to °C					
Cc to °C					
Cryos. A* consts. B*					
t _e °C	274.06	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE II. CHLOROALKANES

No. 61

NAME		1, 2-Dichloroethane			STRUCTURAL FORMULA		
					CH ₂ ClCH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₄ Cl ₂	Molecular Weight 98.966				
	Ref.			Ref.			Ref.
F. P. °C	-35.66	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°K	
B. P. °C			BP	0.2568	5		
760 mm	83.47	3	t _e	0.0430	5		
100	28.96	5	30 mm	0.0360	5		
30	4.90	5	ΔHm cal/g				
10	-13.37	5	ΔHv cal/g				
1	-43.52	5	25°C	82.72	5		
Pressure mm 25°C	83.35	5	30 mm	85.86	5		
t _e	954.9	5	BP	73.91	5		
Density g/ml 20°C	1.2531	3	t _e	72.82	5		
t	1.2458	3	t _e (d, e)	72.75	5		
d ₄ 30			ΔHv/T _e	19.78	5		
a	1.2823	5	d 5 to	86.61	5		
b	-0.00144	5	e 111 °C	0.1521	5	Surface tension dynes/cm. 20°C	
Ref. Index			d' to			30	31.13
n _D 20°C	1.4448	3	e' °C			40	29.68
25	1.4421	3	d _c g/ml				28.27
30			v _c ml/g				
"C"	0.4704	4	t _c °C				
MR (Obs.)	21.012	4	P _c mm			Parachor [P]	
MR (Calc.)	21.170	5	PV/RT			20°C	
(nD-d/2)			25°C	0.9924	5	30	
Dielectric			30 mm	1.0000	5	40	
A 5 to	6.95222	5	BP	0.9491	5	Sugd.	186.6
B 121 °C	1247.8	5	t _e	0.9422	5	Exp. L. l. %/wt. u.	
C	223.	5	t _c			Dispersion	
A* 5 to	1.37555	5	ΔHc kcal/m			Flash Point °C	
B* 111 °C	1171.9	5	ΔHf			Fire Point	
K			ΔFf			M. Spec. Ultra V.	
t _k to			Viscosity centistokes			X-Ray Dif.	
t _x °C			η °C			Infrared	
A' to			B ^v to			Solubility in ⁺	
B' °C			A ^v °C			Acetone	
C' °C			(B ^v) to			Carbon tet.	
A'* to			(A ^v) °C			Benzene	
B'* °C			c _p liq. °K			Ether	
Ac to			c _p vap. °K			n-Heptane	
Bc t _c °C			c _v vap.			Ethanol	
Cc °C						Water	
Cryos. A°						Water in	
const. B°							
t _e °C	91.12	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 2-Dichloropropane			STRUCTURAL FORMULA		
					CH ₃ CHClCH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₆ Cl ₂	Molecular Weight	112.992		
		Ref.			Ref.		
F. P. °C	-100.44	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.4085	5	g	°K
B. P. °C			BP	0.0444	5	h	
760 mm	96.37	3	t _e	0.0361	5	f'	to
100	40.07	5	30 mm	0.6230	5	g'	°K
30	15.20	5	ΔHm cal/g			h'	
10	-3.69	5	ΔHv cal/g			m	to
1	-34.89	5	25°C	76.85	5	n	°K
Pressure mm 25°C	49.63	5	30 mm	78.23	5	o	
t _e	989.3	5	BP	67.16	5		
Density g/ml 20°C	1.1560	3	t _e	65.98	5	m'	to
d ^t 25	1.1494	3	t _e (d, e)	65.91	5	n'	°K
d ₄ 30			ΔHv/T _e	19.69	5	o'	
a	1.1824	5	d 15 to	80.30	5	Surface tension dynes/cm. 20°C	
b	-0.00131	5	e 125 °C	0.1364	5	γ	28.36
Ref. Index			e' to °C			30	27.07
n _D 20°C	1.4394	3				40	25.81
25	1.4368	3	d _c g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.5041	4	t _c °C			30	
MR (Obs.)	25.730	4	P _c mm			40	
MR (Calc.)	25.788	5	PV/RT			Sugd.	225.6
(n _D -d/2)			25°C	0.9968	5	Exp. L. l. %/wt.	
Dielectric			30 mm	1.0000	5	u.	
A 15 to	6.96546	5	BP	0.9472	5	Dispersion	
B 135 °C	1296.4	5	t _e	0.9390	5	Flash Point °C	
C	221.	5	t _c			Fire Point	
A* 15 to	1.43463	5	ΔHc kcal/m			M Spec.	
B* 125 °C	1218.6	5	ΔHf			Ultra V.	
K			ΔFf			X-Ray Dif.	
c			Viscosity centistokes			Infrared	
t _k to °C			η °C			Solubility in +	
t _x to °C			B ^v to °C			Acetone	
A' to °C			A ^v to °C			Carbon tet.	
B' to °C			(B ^v) to °C			Benzene	
C' to °C			(A ^v) to °C			Ether	
A'* to °C			c _p liq. °K			n-Heptane	
B'* to °C			c _p vap. °K			Ethanol	
Ac to °C			c _v vap.			Water	
Bc to °C						Water in	
Cc to °C							
Cryos. A°							
const. B°							
t _e °C	105.52	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 63

NAME		1, 3-Dichloropropane			STRUCTURAL FORMULA		
					CH ₂ ClCH ₂ CH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃ H ₆ Cl ₂	Molecular Weight	112.992		
		Ref.			Ref.		Ref.
F. P. °C	-99.5	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	1.004	5	g	°K
B. P. °C			BP	0.0470	5	h	
760 mm	120.4	3	t _e	0.0364	5	f'	to
100	60.8	5	30 mm	0.6599	5	g'	°K
30	34.5	5	ΔHm cal/g			h'	
10	14.5	5	ΔHv cal/g			m	to
1	-18.6	5	25°C	85.49	5	n	°K
Pressure mm 25°C	18.25	5	30 mm	84.06	5	o	
t _e	1052.8	5	BP	71.71	5	m'	to
Density g/ml 20°C	1.1878	3	t _e	70.11	5	n'	°K
t _e	1.1818	3	t _e (d, e)	69.98	5	o'	
d ₄			ΔHv/T _e	19.53	5		
a	1.2118	5	d 34 to	89.00	5	Surface tension dynes/cm. 20°C	
b	-0.00120	5	e 152 to	0.1436	5	γ	31.62
Ref. Index			e' to			30	30.36
n _D 20°C	1.4487	3	d _c g/ml			40	29.13
25	1.4460	3	v _c ml/g			Parachor [P]	
30			t _c °C			20°C	
"C"	0.5004	4	P _c mm			30	
MR (Obs.)	25.500	4	PV/RT	1.0023	5	40	225.6
MR (Calc.)	25.788	5	25°C	1.0000	5	Sugd.	5
(n _D -d/2)			30 mm	0.9434	5	Exp. L. l. %/wt. u.	
Dielectric			BP	0.9329	5	Dispersion	
A 34 to	6.97186	5	t _e			Flash Point °C	
B 162 °C	1376.2	5	t _c			Fire Point	
C	216.	5	ΔHc kcal/m			M. Spec.	
A* 34 to	1.42212	5	ΔHf			Ultra V.	
B* 152 °C	1296.1	5	ΔFf			X-Ray Dif.	
K			Viscosity centistokes			Infrared	
t _k to			η °C			Solubility in +	
t _x °C			B ^v to			Acetone	
A' to			A ^v °C			Carbon tet.	
B' °C			(B ^v) to			Benzene	
C' °C			(A ^v) °C			Ether	
A'* to			c _p liq. °K			n-Heptane	
B'* °C			c _p vap. °K			Ethanol	
Ac to			c _v vap.			Water	
Bc °C						Water in	
Cc °C							
Cryos. A°							
const. B°							
t _e °C	132.46	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2, 2-Dichloropropane			STRUCTURAL FORMULA		
					CH ₃ CCl ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₆ Cl ₂	Molecular Weight 112.992				
			Ref.	Ref.			
F.P. °C	-33.8	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C	0.1565	g	to	°K
B.P. °C			BP	0.0415	h	to	
760 mm	69.3	3	t _e	0.0358	f'	to	
100	16.7	5			g'	to	°K
30	-6.5	5	30 mm	0.5809	h'	to	
10	-24.1	5	ΔHm cal/g		m	to	
1	-53.1	5	25°C	67.64	n	to	°K
Pressure mm 25°C	145.5	5	30 mm	71.76	o	to	
t _e	917.0	5	BP	61.98			
Density g/ml 20°C	1.112	3	t _e	61.23	m'	to	
d ^t 25	1.106	3	t _e (d, e)	61.20	n'	to	°K
d ₄ 30			ΔHv/T _e	19.85	o'	to	
a	1.1360	5	d -6 to	70.93	Surface tension dynes/cm. 20°C		
b	-0.00117	5	e 95 °C	0.1291	30	24.24	5
Ref. Index n _D 20°C	1.4148	3	d' to		40	23.17	5
25	1.4123	3	e' °C			22.12	5
30			d _c g/ml		Parachor [P]		
"C"	0.4963	4	t _c ml/g		20°C		
MR (Obs.)	25.435	4	t _c °C		30		
MR (Calc.) (nD-d/2)	25.788	5	P _c mm		40		
Dielectric			PV/RT		Sugd.	225.6	5
A -6 to	6.94820	5	25°C	0.9864	Exp. L. l. %/wt. u.		
B 105 °C	1201.1	5	30 mm	1.0000	Dispersion		
C	226.	5	BP	0.9514	Flash Point °C		
A* -6 to	1.44146	5	t _e	0.9458	Fire Point		
B* 95 °C	1126.7	5	t _c		M Spec. Ultra V. X-Ray Dif. Infrared		
K			ΔHc kcal/m		Solubility in +		
t _x to			ΔHf		Acetone		
t _x °C			ΔFf		Carbon tet.		
A' to			Viscosity centistokes		Benzene		
B' °C			η °C		Ether		
C' °C			B ^v to		n-Heptane		
A' * to			A ^v °C		Ethanol		
B' * °C			(B ^v) to		Water		
Ac to			(A ^v) °C		Water in		
Bc t _c °C			c _p liq. °K				
Cc °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	75.34	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 65

NAME		1, 4-Dichlorobutane		STRUCTURAL FORMULA	
				CH ₂ ClCH ₂ CH ₂ CH ₂ Cl	
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₈ Cl ₂	Molecular Weight 127.018		
F. P. °C	-37.3	3	dt/dP °C/mm	Ref.	Ref.
F. P. 100%			25°C	3.791	5
B. P. °C			BP	0.0506	5
760 mm	153.9	3	t _e	0.0368	5
100	89.7	5	30 mm	0.7122	5
30	61.3	5	ΔHm cal/g		
10	39.7	5	ΔHv cal/g		
1	4.0	5	25°C	87.18	5
Pressure mm 25°C	4.23	5	30 mm	81.88	5
t _e	1140.4	5	BP	69.36	5
Density g/ml 20°C	1.1408	3	t _e	67.35	5
d ^t 25	1.1353	3	t _e (d, e)	67.15	5
d ^t 30			ΔHv/T _e	19.29	5
a	1.1628	5	d 61 to	90.16	5
b	-0.00110	5	e 190 °C	0.1352	5
Ref. Index n _D 20°C	1.4542	3	e' to °C		
25	1.4518	3	d _c g/ml		
30			v _c ml/g		
"C"	0.5270	4	t _c °C		
MR (Obs.)	30.163	4	P _c mm		
MR (Calc.) (n _D -d/2)	30.406	5	PV/RT		
Dielectric			25°C	1.0052	5
A 61 to	6.99113	5	30 mm	1.0000	5
B 200 °C	1495.7	5	BP	0.9383	5
C	210.	5	t _e	0.9245	5
A* 61 to	1.46729	5	t _c		
B* 190 °C	1412.1	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to °C			Viscosity centistokes		
t _x to °C			η		
A' to °C			B ^v to °C		
B' to °C			A ^v to °C		
C' to °C			(B ^v) to °C		
A* to °C			(A ^v) to °C		
B* to °C			c _p liq. °K		
Ac to °C			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc t _c °C					
Cryos. A° const. B°					
t _e °C	170.20	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		1,5-Dichloropentane			STRUCTURAL FORMULA		
					CH ₂ Cl(CH ₂) ₃ CH ₂ Cl		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₀ Cl ₂	Molecular Weight	141.044		
		Ref.			Ref.	Ref.	
F. P. °C	-72.8	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	11.39	5	g	to °K
B. P. °C	180.	3	BP	0.0534	5	h	to °K
760 mm	112.	5	t _e	0.0371	5	f'	to °K
100	82.	5	t _e (d, e)			g'	to °K
30	59.	5	30 mm	0.7526	5	h'	to °K
10	22.	5	ΔHm cal/g			m	to °K
1			ΔHv cal/g			n	to °K
Pressure mm 25°C	1.27	5	25°C	86.84	5	o	to °K
t _e	1207.6	5	30 mm	78.77	5		
Density g/ml 20°C	1.1006	3	BP	66.30	5	m'	to °K
d ^t 25	1.0956	3	t _e	64.03	5	n'	to °K
d ₄ 30			t _e (d, e)	63.78	5	o'	to °K
			ΔHv/T _e	19.10	5		
a	1.1206	5	d 82 to	89.24	5	Surface tension dynes/cm. 20°C	
b	-0.03999	5	e 220 °C	0.1274	5	30	31.50
			d' °C			40	30.37
Ref. Index n _D 20°C	1.4564	3	e' °C				29.27
25	1.4541	3				Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.5487	4	v _c ml/g			30	
MR (Obs.)	34.862	4	t _c °C			40	
MR (Calc.) (nD-d/2)	35.024	5	P _c mm			Sugd.	303.6
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 82 to	7.00070	5	25°C	1.0042	5	Dispersion	
B 230 °C	1586.2	5	30 mm	1.0000	5	Flash Point °C	
C	205.	5	BP	0.9341	5	Fire Point	
			t _e	0.9178	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 82 to	1.50541	5	t _c			Solubility in +	
B* 220 °C	1500.3	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k °C			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' °C						Ethanol	
B' °C			B ^v to °C			Water	
C'			A ^v to °C			Water in	
A'* to °C			(B ^v) to °C				
B'* to °C			(A ^v) °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	199.76	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 67

NAME		Trichloromethane (Chloroform)			STRUCTURAL FORMULA		
					CHCl ₃		
Mole % Pur.	Ref. 3	Molecular Formula	CHCl ₃	Molecular Weight	119.389		
F. P. °C	-63.49	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.1209	5	g	°K
B. P. °C			BP	0.0407	5	h	
760 mm	61.73	3	t _e	0.0357	5	f'	to
100	10.22	5	30 mm	0.5687	5	g'	°K
30	-12.50	5	ΔHm cal/g			h'	
10	-29.74	5	ΔHv cal/g			m	to
1	-58.17	5	25°C	61.68	5	n	°K
Pressure mm 25°C	194.8	5	30 mm	66.27	5	o	
t _e	896.4	5	BP	57.32	5	m'	to
Density g/ml 20°C	1.4832	3	t _e	56.72	5	n'	°K
d ^t 25	1.4799	3	t _e (d, e)	56.69	5	o'	
d ^t 30			ΔHv/T _e	19.91	5	Surface tension dynes/cm. 20°C	
a	1.4965	5	d -13 to	64.76	5	γ	27.70
b	-0.03613	5	e 87 °C	0.1206	5		30
Ref. Index			d'				40
n _D 20°C	1.4459	3	e'			Parachor [P]	
25	1.4439	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.3984	4	t _c °C			40	
MR (Obs.)	21.461	4	P _c mm			Sugd.	184.8
MR (Calc.) (n _D -d/2)	21.419	5	PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C	0.9825	5	Dispersion	
A -13 to	6.93708	5	30 mm	1.0000	5	Flash Point °C	
B 97 °C	1171.2	5	BP	0.9523	5	Fire Point	
C	227.	5	t _e	0.9474	5	M. Spec. Ultra V.	
A* -13 to	1.46236	5	t _c			X-Ray Dif.	
B* 87 °C	1098.1	5	ΔHc kcal/m			Infrared	
K			ΔHf			Solubility in ⁺	
t _k to			ΔFf			Acetone	
t _x °C			Viscosity centistokes			Carbon tet.	
A' to			η °C			Benzene	
B' °C			B ^v to			Ether	
C' °C			A ^v °C			n-Heptane	
A* to			(B ^v) to			Ethanol	
B* °C			(A ^v) °C			Water	
Ac to			c _p liq. °K			Water in	
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	66.93	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1, 1-Trichloroethane			STRUCTURAL FORMULA		
					CH ₂ CCl ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₃ Cl ₃	Molecular Weight	133.415		
F.P. °C	-30.41	3					
F.P. 100%							
B.P. °C							
760 mm	74.10	3		dt/dP °C/mm			f to °K
100	20.88	5		25°C	0.1848	5	g to °K
30	-2.62	5		BP	0.0420	5	h to °K
10	-20.45	5		t _e	0.0359	5	f' to °K
1	-49.88	5		30 mm	0.5882	5	g' to °K
				ΔHm cal/g			h' to °K
Pressure mm 25°C	120.7	5		ΔHv cal/g			m to °K
t _e	929.9	5		25°C	58.65	5	n to °K
				30 mm	61.76	5	o to °K
Density g/ml 20°C	1.3390	3		BP	53.27	5	
d ^t 25	1.3314	3		t _e	52.58	5	m' to °K
d ₄ 30				t _e (d, e)	52.55	5	n' to °K
				ΔHv/T _e	19.82	5	o' to °K
a	1.3694	5		d -3 to	61.47	5	Surface tension dynes/cm. 20°C
b	-0.00149	5		e 101 °C	0.1107	5	30 25.40 5
Ref. Index n _D 20°C	1.4379	3		e' to °C			40 24.24 5
25	1.4359	3					40 23.09 5
30				d _c g/ml			Parachor [P] 20°C
"C"	0.4338	4		v _c ml/g			30
MR (Obs.)	26.151	4		t _c °C			40
MR (Calc.) (n _D -d/2)	25.837	5		P _c mm			Sugd. 223.8 5
Dielectric				PV/RT			Exp. L. l. %/wt. u.
A -3 to	6.94983	5		25°C	0.9886	5	Dispersion
B 111 °C	1217.0	5		30 mm	1.0000	5	Flash Point °C
C	225.	5		BP	0.9506	5	Fire Point
A* -3 to	1.51094	5		t _e	0.9446	5	M Spec. Ultra V. X-Ray Dif. Infrared
B* 101 °C	1142.1	5		t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
K				ΔHc kcal/m			
c				ΔHf			
t _k to °C				ΔFf			
t _x to °C				Viscosity centistokes			
A' to °C				η °C			
B' to °C				B ^v to °C			
C' to °C				A ^v to °C			
A' * to °C				(B ^v) to °C			
B' * to °C				(A ^v) to °C			
Ac to °C				c _p liq. °K			
Bc to °C				c _p vap. °K			
Cc to °C				c _v vap.			
Cryos. A° const. B°							
t _e °C	80.68	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 69

NAME	1, 1, 2-Trichloroethane			STRUCTURAL FORMULA		
				CH ₂ ClCHCl ₂		
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₃ Cl ₃	Molecular Weight 133.415			
		Ref.		Ref.		Ref.
F. P. °C	-36.59	3	dt/dP °C/mm		f	to
F. P. 100%			25°C	0.7802	g	°K
B. P. °C			BP	0.0463	h	
760 mm	113.77	3	t _e	0.0363	f'	to
100	55.09	5	t _e (d, e)	0.6493	g'	°K
30	29.17	5	ΔHm cal/g		h'	
10	9.48	5	ΔHv cal/g		m	to
1	-23.04	5	25°C	70.40	n	°K
Pressure mm 25°C	24.13	5	30 mm	69.87	o	
t _e	1035.3	5	BP	59.67	m'	to
Density g/ml 20°C	1.4397	3	t _e	58.41	n'	°K
d ^t 25	1.4319	3	t _e (d, e)	58.32	o'	
d ^t 30			ΔHv/T _e	19.57		
a	1.4709	5	d 29 to	73.39	Surface tension dynes/cm. 20°C	
b	-0.00155	5	e 145 °C	0.1206	30	34.01
Ref. Index n _D 25°C	1.4714	3	e' to °C		40	32.55
20	1.4689	3	d _c g/ml			31.13
30			v _c ml/g		Parachor [P] 20°C	
"C"	0.4324	4	t _c °C		30	
MR (Obs.)	25.921	4	P _c mm		40	
MR (Calc.) (n _D -d/2)	25.837	5	PV/RT 25°C	1.0011	Sugd.	223.8
Dielectric			30 mm	1.0000	Exp. L. l. %/wt. u.	
A 29 to	6.96527	5	BP	0.9444	Dispersion	
B 155 °C	1351.0	5	t _e	0.9345	Flash Point °C	
C	217.	5	t _c		Fire Point	
A* 29 to	1.49326	5	ΔHc kcal/m		M. Spec. Ultra V.	
B* 145 °C	1271.8	5	ΔHf		X-Ray Dif.	
K			ΔFf		Infrared	
t _k to °C			Viscosity centistokes		Solubility in †	
t _x to °C			η °C		Acetone	
A' to °C			B ^v to °C		Carbon tet.	
B' to °C			A ^v to °C		Benzene	
C' to °C			(B ^v) to °C		Ether	
A** to °C			(A ^v) to °C		n-Heptane	
B** to °C			c _p liq. °K		Ethanol	
A _c to °C			c _p vap. °K		Water	
B _c to °C			c _v vap.		Water in	
C _c to °C						
Cryos. A° const. B°						
t _e °C	125.01	5				

† grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1, 1, 3-Trichloropropane			STRUCTURAL FORMULA				
					CH ₂ ClCH ₂ CHCl ₂				
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₅ Cl ₃	Molecular Weight 147.441						
F. P. °C	-58.98	3	dt/dP °C/mm						
F. P. 100%			25°C	2.705	5	f to			
B. P. °C			BP	0.0497	5	g °K			
760 mm	145.55	3	t _e	0.0367	5	h			
100	82.49	5	30 mm	0.6987	5	f' to			
30	54.61	5	ΔHm cal/g			g' °K			
10	33.42	5	ΔHv cal/g			h'			
1	-1.59	5	25°C	72.76	5	m to			
Pressure mm 25°C	6.12	5	30 mm	69.07	5	n °K			
t _e	1118.5	5	BP	58.57	5	o			
Density g/ml 20°C	1.3557	3	t _e	56.97	5	m' to			
d ^t 25	1.3544	3	t _e (d, e)	56.81	5	n' °K			
d ₄ 30			ΔHv/T _e	19.36	5	o'			
a	1.3609	5	d 55 to	75.37	5	Surface tension dynes/cm. 20°C			
b	-0.03258	5	e 181 °C	0.1155	5	30	34.09	5	
Ref. Index n _D 20°C	1.4718	3	d' to			40	33.83	5	
25	1.4698	3	e' °C				33.56	5	
30			d _c g/ml			Parachor [P]			
"C"	0.4596	4	t _c ml/g			20°C			
MR (Obs.)	30.443	4	t _c °C			30			
MR (Calc.) (nD-d/2)	30.255	5	P _c mm			40			
Dielectric			PV/RT			Sugd.	262.8	5	
A 55 to	6.98064	5	25°C	1.0050	5	Exp. L. l. %/wt. u.			
B 191 °C	1461.8	5	30 mm	1.0000	5	Dispersion			
C	211.	5	BP	0.9395	5	Flash Point °C			
A* 55 to	1.52815	5	t _e	0.9265	5	Fire Point			
B* 181 °C	1379.3	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared			
K			ΔHc kcal/m			Solubility in +			
c			ΔHf			Acetone			
t _k to			ΔFf			Carbon tet.			
t _x °C			Viscosity centistokes			Benzene			
A' °C			η °C			Ether			
B' °C			B ^v to			n-Heptane			
C' °C			A ^v °C			Ethanol			
A' * to			(B ^v) to			Water			
B' * °C			(A ^v) °C			Water in			
Ac to			c _p liq. °K						
Bc °C			c _p vap. °K						
Cc °C			c _v vap.						
Cryos. A°									
const. B°									
t _e °C	160.77	5							
+ grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

TABLE II. CHLOROALKANES

No. 71

NAME		1, 2, 3-Trichloropropane			STRUCTURAL FORMULA		
					CH ₂ ClCHClCH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₅ Cl ₃	Molecular Weight 147.441				
		Ref.		Ref.	Ref.		
F. P. °C	-14.7	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	4.290	5	g	°K
B. P. °C	156.85	3	BP	0.0509	5	h	
760 mm	92.23	5	t _e	0.0369	5	f'	to
100	63.65	5	30 mm	0.7163	5	g'	°K
30	41.92	5				h'	
10	6.01	5	ΔHm cal/g			m	to
1						n	°K
Pressure mm 25°C	3.69	5	ΔHv cal/g	76.08	5	o	
t _e	1148.0	5	25°C	71.13	5		
			30 mm	60.18	5	m'	to
Density g/ml 25°C	1.3888	3	BP	58.40	5	n'	°K
t	1.3832	3	t _e (d, e)	58.22	5	o'	
d ₄ 30			ΔHv/T _e	19.28	5		
a	1.4112	5	d _e 64 to	78.61	5	Surface tension dynes/cm. 20°C	
b	-0.00112	5	d _e 194 to	0.1175	5	γ	37.55
			d _e to				30
Ref. Index n _D 20°C	1.4832	3	d _e to				40
25	1.4812	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g				30
"C"	0.4588	4	t _c °C				40
MR (Obs.)	30.331	4	P _c mm			Sugd.	262.8
MR (Calc.) (nD-d/2)	30.255	5					
Dielectric			PV/RT 25°C	1.0052	5	Exp. L. l. %/wt. u.	
A 64 to	6.98716	5	30 mm	1.0000	5	Dispersion	
B 204 °C	1502.3	5	BP	0.9378	5	Flash Point °C	
C	209.	5	t _e	0.9237	5	Fire Point	
			t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 64 to	1.52659	5	ΔHc kcal/m			Solubility in ⁺	
B* 194 °C	1418.6	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
t _k to			Viscosity centistokes η °C			Benzene	
t _x °C						Ether	
A' to			B ^v to			n-Heptane	
B' °C			A ^v °C			Ethanol	
C' to			(B ^v) to			Water	
A** to			(A ^v) °C			Water in	
B** °C			c _p liq. °K				
Ac _l to			c _p vap. °K				
Bc _l t _c °C			c _v vap.				
Cc _l t _c °C							
Cryos. A° const. B°							
t _e °C	173.54	5					

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Tetrachloromethane (carbon tetrachloride)			STRUCTURAL FORMULA	
					CCl ₄	
Mole % Pur.	Ref. 3	Molecular Formula	CCl ₄	Molecular Weight	153.838	
F.P. °C	-22.99	Ref.	3	dt/dP °C/mm		Ref.
F.P. 100%				25°C	0.2012	5
B.P. °C				BP	0.0423	5
760 mm	76.54		3	t _e	0.0359	5
100	22.99		5	30 mm	0.5915	5
30	-0.63		5	ΔHm cal/g		
10	-18.56		5	ΔHv cal/g		
1	-48.15		5	25°C	51.50	5
Pressure mm 25°C	109.6		5	30 mm	54.05	5
t _e	936.2		5	BP	46.54	5
Density g/ml 20°C	1.5940		3	t _e	45.90	5
d ₄ ²⁵	1.5843		3	t _e (d, e)	45.87	5
d ₄ ³⁰				ΔHv/T _e	19.80	5
a	1.6328		5	d	-1 to	53.99
b	-0.00190		5	e	103 °C	0.0974
Ref. Index n _D 20°C	1.4601		3	d'		
25	1.4570		3	e'		
30				d	g/ml	
"C"	0.3818		4	v	ml/g	
MR (Obs.)	26.438		4	t _c	°C	
MR (Calc.) (nD-d/2)	26.286		5	P	mm	
Dielectric				PV/RT		
A	-1 to	6.94369	5	25°C	0.9896	5
B	113 °C	1221.1	5	30 mm	1.0000	5
C		224.	5	BP	0.9501	5
A*	-1 to	1.56538	5	t _e	0.9438	5
B*	103 °C	1146.2	5	t _c		
K				ΔHc kcal/m		
c				ΔHf		
t _x				ΔFf		
t _x				Viscosity centistokes		
A'				η		
B'						
C'				B ^v		
A'*				A ^v		
B'*				(B ^v)		
Ac				(A ^v)		
Bc				c _p liq.		
Cc				c _p vap.		
Cryos. A° const. B°				c _v vap.		
t _e °C	83.39		5			

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. CHLOROALKANES

No. 73

NAME		1, 1, 1, 2-Tetrachloroethane		STRUCTURAL FORMULA	
				CH ₂ ClCCl ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₂ Cl ₄	Molecular Weight 167.864		
		Ref.		Ref.	
F. P. °C	-70.21	3	dt/dP °C/mm		f to
F. P. 100%			25°C	1.486	g °K
B. P. °C			BP	0.0481	h
760 mm	130.5	3	t _e	0.0365	f' to
100	69.5	5	30 mm	0.6755	g' °K
30	42.6	5	ΔHm cal/g		h'
10	22.1	5	ΔHv cal/g		m to
1	-11.8	5	25°C	60.06	n °K
Pressure mm 25°C	11.84	5	30 mm	58.22	o
t _e	1079.1	5	BP	49.52	m' to
Density g/ml 20°C	1.5406	3	t _e	48.30	n' °K
d _t 25	1.5328	3	t _e (d, e)	48.20	o'
d ₄ 30			ΔHv/T _e	19.45	
a	1.5718	5	d 43 to	62.43	Surface tension dynes/cm. 20°C
b	-0.00156	5	e 164 to	0.0989	30
Ref. Index n _D 20°C	1.4821	3	d' to		40
25	1.4794	3	e' °C		32.92
30			d _c g/ml		31.60
"C"	0.4127	4	v _c ml/g		30.31
MR (Obs.)	31.069	4	t _c °C		Parachor [F] 20°C
MR (Calc.) (nD-d/2)	30.904	5	P _c mm		30
Dielectric			PV/RT 25°C	1.0038	40
A 43 to	6.97560	5	30 mm	1.0000	Sugd. 261.0
B 174 °C	1410.7	5	BP	0.9417	Exp. L. l. %/wt. u.
C	214.	5	t _e	0.9302	Dispersion
A* 43 to	1.59048	5	ΔHc kcal/m		Flash Point °C
B* 164 °C	1329.6	5	ΔHf		Fire Point
K			ΔFf		M. Spec. Ultra V.
t _k to			Viscosity centistokes η °C		X-Ray Dif. Infrared
t _x °C					Solubility in ⁺ Acetone
A' to			B ^v to		Carbon tet.
B' °C			A ^v °C		Benzene
C' °C			(B ^v) to		Ether
A* to			(A ^v) °C		n-Heptane
B* °C			c _p liq. °K		Ethanol
Ac to			c _p vap. °K		Water
Bc °C			c _v vap.		Water in
Cc °C					
Cryos. A° const. B°					
t _e °C	143.80	5			

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1, 1, 2, 2-Tetrachloroethane			STRUCTURAL FORMULA		
					CHCl ₂ CHCl ₂		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₂ Cl ₄	Molecular Weight	167.864		
F.P. °C	-43.8	Ref.	3	dt/dP °C/mm		Ref.	
F.P. 100%				25°C	2.776	5	f to
B.P. °C				BP	0.0498	5	g °K
760 mm	146.2	3		t _e	0.0367	5	h
100	83.1	5		30 mm	0.6998	5	f' to
30	55.1	5		ΔHm cal/g			g' °K
10	33.9	5					h'
1	-1.2	5		ΔHv cal/g			m to
Pressure mm 25°C	5.95	5		25°C	64.06	5	n °K
t _e	1120.0	5		30 mm	60.76	5	o
Density g/ml 20°C	1.5953	3		BP	51.51	5	m' to
d ₄ ²⁵	1.5876	3		t _e	50.09	5	n' °K
d ₄ ³⁰				t _e (d, e)	49.95	5	o'
				ΔHv/T _e	19.34	5	
a	1.6261	5		d 55 to	66.36	5	Surface tension
b	-0.00154	5		e 181 °C	0.1016	5	dynes/cm. 20°C
Ref. Index				d' to			30 37.85 5
n _D 20°C	1.4940	3		e' °C			40 36.41 5
25	1.4910	3					40 35.00 5
30				d v c g/ml			Parachor [P]
"C"	0.4078	4		v c ml/g			20°C
MR (Obs.)	30.633	4		t c °C			30
MR (Calc.) (n _D -d/2)	30.904	5		P c mm			40
Dielectric				PV/RT			Sugd. 261.0 5
A 55 to	6.98240	5		25°C	1.0051	5	Exp. L. l. %/wt.
B 191 °C	1465.1	5		30 mm	1.0000	5	u.
C	211.	5		BP	0.9392	5	Dispersion
A* 55 to	1.58593	5		t _e	0.9262	5	Flash Point °C
B* 181 °C	1382.5	5		t _c			Fire Point
K				ΔHc kcal/m			M Spec.
c				ΔHf			Ultra V.
t _k to				ΔFf			X-Ray Dif.
t _x °C				Viscosity centistokes			Infrared
A' to				η °C			Solubility in +
B' °C				B ^v to			Acetone
C'				A ^v °C			Carbon tet.
A'* to				(B ^v) to			Benzene
B'* °C				(A ^v) °C			Ether
Ac to				c _p liq. °K			n-Heptane
Bc °C				c _p vap. °K			Ethanol
Cc °C				c _v vap.			Water
Cryos. A* const. B*							Water in
t _e °C	161.50	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE II. CHLOROALKANES

No. 75

NAME		1, 1, 1, 2-Tetrachloropropane			STRUCTURAL FORMULA		
					CH ₃ CHClCCl ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₄ Cl ₄	Molecular Weight 181.890				
		Ref.		Ref.		Ref.	
F. P. °C	-65.	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	3.242	g	°K	
B. P. °C			BP	0.0502	h		
760 mm	150.	3	t _e	0.0368	f'	to	
100	86.	5	30 mm	0.7054	g'	°K	
30	58.	5	ΔHm cal/g		h'		
10	37.	5	ΔHv cal/g		m	to	
1	1.	5	25°C	60.07	n	°K	
Pressure mm 25°C	5.01	5	30 mm	56.67	o		
t _e	1130.0	5	BP	47.94	m'	to	
Density g/ml 20°C	1.473	3	t _e (d, e)	46.57	n'	°K	
d ₄ ^t 25	1.465	3	ΔHv/T _e	19.30	o'		
d ₄ ^t 30			d 58 to	62.19	Surface tension dynes/cm. 20°C		
a	1.5050	5	e 186 °C	0.0950	γ	34.84	
b	-0.00160	5	d'			30	
Ref. Index			e'			40	
n _D 20°C	1.4867	3	d _c g/ml		Parachor [P] 20°C		
25	1.4837	3	v _c ml/g			30	
30			t _c °C			40	
"C"	0.4355	4	P _c mm		Sugd.	300.0	
MR (Obs.)	35.496	4	PV/RT		Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	35.522	5	25°C	1.0051	Dispersion		
Dielectric			30 mm	1.0000	Flash Point °C		
A 58 to	6.98072	5	BP	0.9387	Fire Point		
B 196 °C	1476.0	5	t _e	0.9253	M. Spec. Ultra V.		
C	210.	5	t _c		X-Ray Dif. Infrared		
A* 58 to	1.61653	5	ΔHc kcal/m		Solubility in ⁺		
B* 186 °C	1393.2	5	ΔHf		Acetone		
K			ΔFf		Carbon tet.		
t _k to			Viscosity centistokes		Benzene		
t _x °C			η		Ether		
A' to			B ^v to		n-Heptane		
B' °C			A ^v °C		Ethanol		
C' °C			(B ^v) to		Water		
A** to			(A ^v) °C		Water in		
B** °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc °C			c _v vap.				
Cc t _c °C							
Cryos. A° const. B°							
t _e °C	165.79	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 1

NAME		Bromomethane			STRUCTURAL FORMULA		
					CH ₃ Br		
Mole % Pur.	Ref. 3	Molecular Formula CH ₃ Br	Molecular Weight 94.950				
	Ref.			Ref.		Ref.	
F. P. °C	-93.6	3			f	to	
F. P. 100%					g	to °K	
B. P. °C					h		
760 mm	3.56	3	dt/dP °C/mm	0.0187	5		
100	-39.40	5	25°C	0.0339	5		
30	-58.37	5	BP	0.0346	5	f'	
10	-72.78	5	t _e	0.4752	5	g'	
1	-96.56	5	30 mm			h'	
			ΔHm cal/g				
Pressure mm 25°C	1632.7	5	ΔHv cal/g			m	
t _e	739.2	5	25°C	56.95	5	n	
			30 mm	67.72	5	o	
Density g/ml 20°C	1.6755 ^a	3	BP	59.71	5	m'	
d ₄ ^t 25	1.6617 ^a	3	t _e	59.80	5	n'	
30			t _e (d, e)	59.80	5	o'	
			ΔHv/T _e	20.57	5		
a	1.7332	5	d -58 °C	60.17	5	Surface tension dynes/cm. 20°C	
b	-0.00250	5	e 23 °C	0.1294	5	30	
Ref. Index n _D 20°C	1.4218 ^a	3	d'			40	
25	1.4187 ^a	3	e'			22.51	
30						20.91	
"C"	0.3347	4	d _c g/ml			19.33	
MR (Obs.)	14.395	4	v _c ml/g				
MR (Calc.) (n _D -d/2)	14.583	5	t _c °C			Parachor [P] 20°C	
Dielectric			P _c mm			30	
A -58 °C	6.95965	3	PV/RT 25°C	0.9393	5	40	
B 33 °C	986.590	3	30 mm	1.0000	5	Sugd. 124.1	
C 238.32		3	BP	0.9620	5	Exp. L.l. %/wt. u.	
A* -58 to 23 °C	1.44624	5	t _e	0.9627	5	Dispersion	
B* 23 °C	921.09	5	t _c			Flash Point °C	
K			ΔHc kcal/m			Fire Point	
t _k to °C			ΔHf			M. Spec. Ultra V.	
t _x to °C			ΔFf			X-Ray Dif. Infrared	
A' to °C			Viscosity centistokes η °C			Solubility in ⁺ Acetone	
B' to °C						Carbon tet.	
C' to °C			B ^v to °C			Benzene	
A** to °C			A ^v to °C			Ether	
B** to °C			(B ^v) to °C			n-Heptane	
A _c to °C			(A ^v) to °C			Ethanol	
B _c to °C						Water	
C _c to °C			c _p liq. °K			Water in	
Cryos. A° const. B°			c _p vap. °K				
t _e °C	2.85	5	c _v vap.				

^a For the liquid at saturation pressure ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Bromoethane			STRUCTURAL FORMULA		
					CH ₃ CH ₂ Br		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₅ Br	Molecular Weight	108.976		
		Ref.			Ref.		
F.P. °C	-118.6	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.0560	5	g	°
B.P. °C	38.35	3	BP	0.0382	5	h	---
760 mm	-10.00	5	t _e	0.0355	5	f'	to
100	-31.30	5	t _e (d, e)			g'	°
30	-47.45	5	30 mm	0.5330	5	h'	
10	-74.08	5	ΔHm cal/g			m	to
1			25°C			n	°K
Pressure mm 25°C	468.6	5	30 mm	59.70	5	o	
t _e	833.4	5	BP	66.69	5		
Density g/ml 20°C	1.4605	3	t _e	58.07	5	m'	to
d ₄ ²⁵	1.4505	3	t _e (d, e)	57.74	5	n'	°K
d ₄ ³⁰			ΔHv/T _e	57.73	5	o'	
				20.03	5		
a	1.5010	5	d -31 to	62.82	5	Surface tension dynes/cm. 20°C	
b	-0.00191	5	e 61 °C	0.1238	5	30	22.68
			d' to			40	21.40
Ref. Index n _D 20°C	1.4239	3	e' °C				20.13
25	1.4212	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.3857	4	t _c °C			40	
MR (Obs.)	19.036	4	P _c mm			Sugd.	163.1
MR (Calc.) (n _D -d/2)	19.201	5	PV/RT 25°C	0.9681	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A -31 to	6.91995	3	BP	0.9559	5	Flash Point °C	
B 71 °C	1090.810	3	t _e	0.9533	5	Fire Point	
C	231.71	3	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* -31 to	1.42855	5	ΔHc kcal/m			Solubility in +	
B* 61 °C	1020.61	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to			η °C			Ether	
t _x °C			B ^v to			n-Heptane	
A' to			A ^v °C			Ethanol	
B' °C			(B ^v)			Water	
C' °C			(A ^v)			Water in	
A'*	to		c _p liq. °				
B'*	°C		c _p vap. °K				
Ac to			c _v vap.				
Bc t _c °C							
Cc °C							
Cryos. A° const. B°							
t _e °C	41.05	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 3

NAME	1-Bromopropane			STRUCTURAL FORMULA	
	CH ₂ BrCH ₂ CH ₃				
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₇ Br	Molecular Weight 123.002		
		Ref.			Ref.
F. P. °C	-110.0	3	dt/dP °C/mm		
F. P. 100%			25°C	0.1649	5
B. P. °C			BP	0.0420	5
760 mm	71.00	3	t _e	0.0362	5
100	17.82	5	30 mm	0.5859	5
30	-5.60	5	ΔHm cal/g		
10	-23.35	5	ΔHv cal/g		
1	-52.60	5	25°C	62.10	5
Pressure mm	138.3	5	30 mm	65.79	5
25°C	921.3	5	BP	56.73	5
t _e			t _e	56.01	5
Density g/ml	1.3537	3	t _e (d, e)	55.98	5
20°C	1.3452	3	ΔHv/T _e	19.66	5
t			d -6 to	65.12	5
d ₄			e 97 °C	0.1183	5
a	1.3878	5	d' to		
b	-0.00167	5	e' to		
Ref. Index			d _c g/ml		
n _D	1.4343	3	v _c ml/g		
20°C	1.4317	3	t _c °C		
25			P _c mm		
30			PV/RT		
"C"	0.4258	4	25°C	0.9869	5
MR (Obs.)	23.677	4	30 mm	1.0000	5
MR (Calc.)	23.819	5	BP	0.9507	5
(n _D -d/2)			t _e	0.9449	5
Dielectric			t _c		
A -6 to	6.91065	3	ΔHc kcal/m		
B 107 °C	1194.889	3	ΔHf		
C	225.51	3	ΔFf		
A* -6 to	1.43995	5	Viscosity centistokes		
B* 97 °C	1120.49	5	η °C		
K			B ^v to		
t _k to			A ^v °C		
t _x °C			(B ^v) to		
A' to			(A ^v) °C		
B' °C			c _p liq. °K		
C' °C			c _p vap. °K		
A'* to			c _v vap.		
B'* °C					
Ac to					
Bc °C					
Cc °C					
Cryos. A°					
const. B°					
t _e °C	77.28	5			
† grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		1-Bromobutane			STRUCTURAL FORMULA		
					CH ₂ BrCH ₂ CH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₉ Br	Molecular Weight 137.028				
		Ref.			Ref.	Ref.	
F.P. °C	-112.4	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.4853	5	g	
B.P. °C			BP	0.0454	5	h	
760 mm	101.60	3	t _e	0.0366	5	f'	to
100	44.11	5				g'	
30	18.78	5	30 mm	0.6340	5	h'	
10	-0.43	5	ΔHm cal/g			m	to
1	-32.11	5	ΔHv cal/g			n	*K
Pressure mm 25°C	41.27	5	25°C	64.24	5	o	
t _e	1002.6	5	30 mm	64.97	5		
Density g/ml 20°C	1.2758	3	BP	55.56	5	m'	to
d ₄ ²⁵	1.2687	3	t _e (d, e)	54.51	5	n'	*K
d ₄ ³⁰			ΔHv/T _e	54.44	5	o'	
				19.42	5	Surface tension dynes/cm. 20°C	
a	1.3042	5	d 19 to	67.10	5	30	25.37
b	-0.00141	5	e 131 °C	0.1136	5	40	24.25
Ref. Index n _D 20°C	1.4401	3	d' to			40	23.15
25	1.4378	3	e' °C			Parachor [P] 20°C	
30			d _v g/ml			30	
"C"	0.4574	4	v _c ml/g			40	
MR (Obs.)	28.312	4	t _c °C			Sugd.	241.1
MR (Calc.)	28.437	5	P _c mm			Exp. L. l. %/wt. u. Dispersion	
Dielectric			PV/RT 25°C	0.9980	5	Flash Point °C	
A 19 to	6.92254	3	30 mm	1.0000	5	Fire Point	
B 141 °C	1298.608	3	BP	0.9457	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	219.70	3	t _e	0.9369	5	Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A* 19 to	1.47237	5	t _c				
B* 131 °C	1220.68	5	ΔHc kcal/m				
K			ΔHf				
t _c to			ΔFf				
t _x °C			Viscosity centistokes				
A' to			η °C				
B' °C			B ^v to				
C'			A ^v °C				
A* to			(B ^v)				
B* to			(A ^v)				
Ac to			c _p liq. °				
Bc to			c _p vap. °K				
Cc t _c °C			c _v vap.				
Cryos. A ^o const. B ^o							
t _e °C	111.46	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Bromopentane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₃ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₁₁ Br	Molecular Weight 151.054				
		Ref.			Ref.		Ref.
F. P. °C	-87.9	3	dt/dP			f	to
F. P. 100%			°C/mm			g	to
B. P. °C			25°C	1.409	5	h	to
760 mm	129.58	3	BP	0.0482	5		
100	68.45	5	t _e	0.0367	5	f'	to
30	41.45	5	30 mm	0.6760	5	g'	to
10	20.96	5				h'	to
1	-12.87	5	ΔHm cal/g			m	to
Pressure mm 25°C	12.60	5	ΔHv cal/g			n	to
t _e	1076.7	5	25°C	66.10	5	o	to
			30 mm	64.19	5		
Density g/ml 20°C	1.2182	3	BP	54.57	5	m'	to
d ^t 25	1.2119	3	t _e	53.22	5	n'	to
d ₄ 30			t _e (d, e)	53.12	5	o'	to
			ΔHv/T _e	19.33	5		
a	1.2434	5	d 41 to	68.72	5	Surface tension dynes/cm. 20°C	
b	-0.00126	5	e 163 °C	0.1092	5	30	26.03
			e' to °C			40	24.97
Ref. Index n _D 20°C	1.4443	3	d _c g/ml				23.93
25	1.4420	3	v _c ml/g			Parachor [P] 20°C	
30			t _c °C			30	
"C"	0.4834	4	P _c mm			40	
MR (Obs.)	32.957	4				Sugd.	280.1
MR (Calc.) (n _D -d/2)	33.055	5	PV/RT			Exp. L. l. %/wt. u.	
			25°C	1.0036	5	Dispersion	
			30 mm	1.0000	5	Flash Point °C	
			BP	0.9418	5	Fire Point	
			t _e	0.9303	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
			t _c			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
			ΔHc kcal/m				
			ΔHf				
			ΔFf				
			Viscosity centistokes η				
			°C				
			B ^v to				
			A ^v °C				
			(B ^v) to				
			(A ^v) °C				
			c _p liq. °K				
			c _p vap. °K				
			c _v vap.				
			t _e °C	142.84	5		

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromohexane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_4\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_6\text{H}_{13}\text{Br}$	Molecular Weight	165.080		
		Ref.			Ref.		
F.P. °C	-84.7	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	4.076	5	g	
B.P. °C			BP	0.0506	5	h	to
760 mm	155.3	3	t_e	0.0367	5	f'	to
100	91.1	5			5	g'	
30	62.6	5	30 mm	0.7130	5	h'	
10	41.0	5	ΔH_m cal/g			m	to
1	5.2	5	25°C			n	°K
Pressure mm 25°C	3.90	5	30 mm	67.72	5	o	
t_e	1144.1	5	BP	63.44	5		
Density g/ml 20°C	1.1744	3	t_e	53.67	5	m'	to
25	1.1687	3	t_e (d, e)	52.07	5	n'	°K
d_4^{25}			$\Delta H_v/T_e$	51.93	5	o'	
				19.32	5		
a	1.1972	5	d 63 to	70.04	5	Surface tension dynes/cm. 20°C	
b	-0.00114	5	e 192 °C	0.1054	5	30	26.56
			d' to			40	25.54
			e' °C				24.55
Ref. Index n_D 20°C	1.4475	3	d			Parachor [P]	
25	1.4454	3	e			20°C	
30			d_c g/ml			30	
"C"	0.5048	4	v_c ml/g			40	
MR (Obs.)	37.594	4	t_c °C			Sugd.	319.1
MR (Calc.)	37.673	5	P c mm				5
Dielectric			PV/RT			Exp. L.l. %/wt. u.	
A 63 to	7.0023	3	25°C	1.0052	5	Dispersion	
B 202 °C	1503.52	3	30 mm	1.0000	5	Flash Point °C	
C	209.5	3	BP	0.9382	5	Fire Point	
A* 63 to	1.5915	5	t_e	0.9243	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 192 °C	1419.83	5	t_c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			Viscosity centistokes				
c			η °C				
t_x to							
t_x °C							
A' to			B' to				
B' °C			A' °C				
C' to			(B')				
A'*			(A')				
B'*			c_p liq. °				
Ac to			c_p vap. °K				
Bc to			c_v vap.				
Cc to							
Cryos. A' const. B'							
t_e °C	171.73	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 7

NAME		1-Bromoheptane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_5\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_7\text{H}_{15}\text{Br}$	Molecular Weight 179.106				
		Ref.		Ref.			Ref.
F. P. °C	-56.1	3	dt/dP °C/mm		f		
F. P. 100%			25°C	11.76	g		
B. P. °C			BP	0.0525	h		
760 mm	178.9	3	t_e	0.0365	f'		
100	112.1	5	30 mm	0.7453	g'		
30	82.4	5	$\Delta\text{Hm cal/g}$		h'		
10	59.7	5	$\Delta\text{Hv cal/g}$		m		
1	22.2	5	25°C	69.16	n		
Pressure mm 25°C	1.22	5	30 mm	62.70	o		
t_e	1205.2	5	BP	52.83			
Density g/ml 20°C	1.1400	3	t_e	51.02	m'		
d_4^{25}	1.1347	3	t_e (d, e)	50.85	n'		
d_4^{30}			$\Delta\text{Hv}/T_e$	19.38	o'		
a	1.1612	5	d 82 to	71.11	Surface tension dynes/cm. 20°C		
b	-0.00106	5	e 218 °C	0.1022	g	26.99	5
Ref. Index n_D			d'			30	5
20°C	1.4502	3	e'			40	5
25	1.4481	3	d_c g/ml		Parachor [P] 20°C		
30			v_c ml/g			30	
"C"	0.5230	4	t_c °C			40	
MR (Obs.)	42.238	4	F_c mm		Sugd.	358.1	5
MR (Calc.)	42.291	5	PV/RT		Exp. L. l. %/wt. u.		
($n_D - d/2$)			25°C	1.0045	Dispersion		
Dielectric			30 mm	1.0000	Flash Point °C		
A 82 to	7.0582	3	BP	0.9350	Fire Point		
B 228 °C	1603.71	3	t_e	0.9189	M. Spec. Ultra V.		
C	205.0	3	t_c		X-Ray Dif.		
A* 82 to	1.6669	5	$\Delta\text{Hc kcal/m}$		Infrared		
B* 218 °C	1517.90	5	ΔHf		Solubility in ⁺		
K			ΔFf		Acetone		
t_k to			Viscosity centistokes η		Carbon tet.		
t_x °C			η °C		Benzene		
A' to			B^v to		Ether		
B' °C			A' to		n-Heptane		
C' °C			(B') to		Ethanol		
A'* to			(A') °C		Water		
B'* °C			c_p liq. °K		Water in		
Ac to			c_p vap. °K				
Bc t_c °C			c_v vap.				
Cc °C							
Cryos. A° const. B°							
t_e °C	198.23	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Bromooctane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_6\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_8\text{H}_{17}\text{Br}$	Molecular Weight	193.132		
		Ref.			Ref.	Ref.	
F. P. °C	-55.0	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	34.07	5	g	°
B. P. °C			BP	0.0542	5	h	---
760 mm	200.8	3	t_e	0.0363	5	f'	to
100	131.7	5	t_e (d, e)			g'	°
30	100.9	5	ΔH_m cal/g			h'	
10	77.3	5				m	to
1	38.3	5	ΔH_v cal/g			n	°K
Pressure mm 25°C	0.38	5	25°C	70.44	5	o	
t_e	1261.3	5	30 mm	61.96	5	m'	to
Density g/ml 20°C	1.1122	3	BP	52.02	5	n'	°K
d_4^{25}	1.1072	3	t_e	50.03	5	o'	
			t_e (d, e)	49.84	5	Surface tension dynes/cm. 20°C	
			$\Delta H_v/T_e$	19.48	5	30	27.35
a	1.1322	5	d 101 to	71.98	5	40	26.38
b	-0.00100	5	e 243 °C	0.0994	5	40	25.43
Ref. Index			d' to			Parachor [P] 20°C	
$n_D^{20°C}$	1.4524	3	e' °C			30	
25	1.4503	3				40	
30			d c g/ml			Sugd.	397.1
"C"	0.5385	4	t_c ml/g			Exp. L. l. %/wt. u.	
MR (Obs.)	46.881	4	t_c °C			Dispersion	
MR (Calc.)	46.909	5	P_c mm			Flash Point °C	
Dielectric			PV/RT 25°C	1.0022	5	Fire Point	
A 101 to	7.1179	3	30 mm	1.0000	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B 253 °C	1701.61	3	BP	0.9319	5	Solubility in +	
C	200.8	3	t_e	0.9141	5	Acetone	
A* 101 to	1.7458	5	t_c			Carbon tet.	
B* 243 °C	1614.07	5	ΔH_c kcal/m			Benzene	
K			ΔH_f			Ether	
c			ΔF_f			n-Heptane	
t_k to			Viscosity centistokes °C			Ethanol	
t_x °C			η			Water	
A' to			B ^v to			Water in	
B' °C			A ^v °C				
C'			(B ^v)				
A'*	to		(A ^v)				
B'*	°C		c_p liq. °				
Ac to			c_p vap. °K				
Bc t_c °C			c_v vap.				
Cc							
Cryos. A* const. B*							
t_e °C	222.79	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 9

NAME		1-Bromononane			STRUCTURAL FORMULA			
					$\text{CH}_2\text{Br}(\text{CH}_2)_7\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_9\text{H}_{19}\text{Br}$	Molecular Weight	207.158			
		Ref.			Ref.			Ref.
F. P. °C	-29.0	3	dt/dP			f		
F. P. 100%			°C/mm			g		
B. P. °C			25°C	99.37	5	h		
760 mm	221.4	3	BP	0.0557	5	f'		
100	150.3	5	t _e	0.0361	5	g'		
30	118.4	5	30 mm	0.8009	5	h'		
10	94.0	5	ΔHm cal/g			m		
1	53.5	5	ΔHv cal/g			n		
Pressure mm 25°C	0.12	5	25°C	71.58	5	o		
t _e	1313.7	5	30 mm	61.19	5	m'		
Density g/ml 20°C	1.0893	3	BP	51.27	5	n'		
t 25	1.0845	3	t _e (d, e)	49.07	5	o'		
d 4 30			ΔHv/T _e	48.91	5			
a	1.1085	5	d 118 to	72.60	5	Surface tension dynes/cm. 20°C		
b	-0.03960	5	e 266 °C	0.0963	5	γ	27.65	5
Ref. Index n _D			d'			30	26.69	5
20°C	1.4542	3	e'			40	25.75	5
25	1.4522	3				Parachor [P]		
30			d _c g/ml			20°C		
"C"	0.5519	4	v _c ml/g			30		
MR (Obs.)	51.520	4	t _c °C			40		
MR (Calc.)	51.527	5	P _c mm			Sugd.	436.1	5
(n _D -d/2)			PV/RT			Exp. L. l. %/wt. u.		
Dielectric			25°C	0.9989	5	Dispersion		
A 118 to	7.1761	3	30 mm	1.0000	5	Flash Point °C		
B 276 °C	1796.73	3	BP	0.9301	5	Fire Point		
C	196.9	3	t _e	0.9096	5	M. Spec. Ultra V.		
A* 118 to	1.8224	5	t _c			X-Ray Dif.		
B* 266 °C	1707.90	5	ΔHc kcal/m			Infrared		
K			ΔHf			Solubility in ⁺		
t _k to			ΔFf			Acetone		
t _x °C			Viscosity centistokes			Carbon tet.		
A' to			η °C			Benzene		
B' °C			B ^v to			Ether		
C' °C			A ^v °C			n-Heptane		
A* to			(B ^v) to			Ethanol		
B* °C			(A ^v) °C			Water		
Ac to			c _p liq. °K			Water in		
Bc t _c °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	245.95	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Bromodecane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₈ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₀ H ₂₁ Br	Molecular Weight	221.184		
		Ref.			Ref.		
F.P. °C	-29.2	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	287.0	5	g	
B.P. °C			BP	0.0570	5	h	to
760 mm	240.6	3	t _e	0.0358	5	f'	to
100	167.6	5				g'	
30	134.8	5	ΔHm cal/g			h'	
10	109.7	5					
1	67.8	5	ΔHv cal/g				
Pressure mm 25°C	0.04	5	25°C	72.53	5	m	to
t _e	1361.8	5	30 mm	60.39	5	n	*K
Density g/ml 20°C	1.0702	3	BP	50.42	5	o	
d ₄ ²⁵	1.0656	3	t _e	48.13	5	m'	to
d ₄ ³⁰			t _e (d, e)	47.89	5	n'	*K
			ΔHv/T _e	19.69	5	o'	
a	1.0886	5	d 135 to	73.09	5	Surface tension dynes/cm. 20°C	
b	-0.03920	5	e 287 °C	0.0942	5	y	27.92
Ref. Index n _D 20°C	1.4557	3	d'			30	26.98
25	1.4538	3	e'			40	26.05
30							
"C"	0.5635	4	d _c g/ml			Parachor [P] 20°C	
MR (Obs.)	56.149	4	v _c ml/g			30	
MR (Calc.)	56.145	5	t _c °C			40	
Dielectric			P _c mm			Sugd.	475.1
A 135 to	7.2336	3	PV/RT			Exp. L. l. %/wt. u.	
B 297 °C	1888.67	3	25°C	0.9952	5	Dispersion	
C	193.3	3	30 mm	1.0000	5	Flash Point °C	
A* 135 to	1.8980	5	BP	0.9266	5	Fire Point	
B* 287 °C	1798.48	5	t _e	0.9055	5	M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in +	
c			ΔHf			Acetone	
t _x to			ΔFf			Carbon tet.	
t _x °C			Viscosity centistokes			Benzene	
A' to			η °C			Ether	
B' to						n-Heptane	
C' to			B ^v to			Ethanol	
A'* to °C			A ^v °C			Water	
B'* to °C			(B ^v)			Water in	
A _c to			(A ^v)				
B _c to			c _p liq. °				
C _c t _c °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	267.41	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 11

NAME		1-Bromoundecane		STRUCTURAL FORMULA	
				$\text{CH}_2\text{Br}(\text{CH}_2)_9\text{CH}_3$	
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{11}\text{H}_{23}\text{Br}$	Molecular Weight	235.210
F. P. °C	-9.7	3	dt/dP °C/mm		
F. P. 100%			25°C	835.9	5
B. P. °C			BP	0.0582	5
760 mm	258.8	3	t_e	0.0356	5
100	184.1	5	30 mm	0.8476	5
30	150.4	5	ΔHm cal/g		
10	124.6	5	ΔHv cal/g		
1	81.5	5	25°C	73.43	5
Pressure mm 25°C	0.01	5	30 mm	59.60	5
t_e	1407.3	5	BP	49.63	5
Density g/ml 20°C	1.0539	3	t_e	47.22	5
25	1.0494	3	t_e (d, e)	46.97	5
d ₄ 30			$\Delta\text{Hv}/T_e$	19.80	5
a	1.0719	5	d 150 to	73.43	5
b	-0.03900	5	e 308 °C	0.0920	5
Ref. Index			d' to		
n _D 20°C	1.4571	3	e' °C		
25	1.4552	3	d _c g/ml		
30			v _c ml/g		
"C"	0.5739	4	t _c °C		
MR (Obs.)	60.794	4	P _c mm		
MR (Calc.)	60.763	5	PV/RT		
(n _D -d/2)			25°C	0.9910	5
Dielectric			30 mm	1.0000	5
A 150 to	7.2882	3	BP	0.9242	5
B 318 °C	1977.14	3	t_e	0.9017	5
C	189.8	3	t_c		
A* 150 to	1.9699	5	ΔHc kcal/m		
B* 308 °C	1885.99	5	ΔHf		
K			ΔFf		
t_k to			Viscosity		
t_x °C			centistokes		
A' to			η °C		
B' °C			B ^v to		
C' °C			A ^v °C		
A** to			(B ^v) to		
B** °C			(A ^v) °C		
Ac to			c _p liq. °K		
Bc t _c °C			c _p vap. °K		
Cc t _c °C			c _v vap.		
Cryos. A°					
const. B°					
t_e °C	287.79	5			
* grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		1-Bromododecane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₁₀ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₂ H ₂₅ Br	Molecular Weight	249.236		
		Ref.			Ref.		
F. P. °C	-9.5	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	2398.	5	g	°
B. P. °C	275.9	3	BP	0.0593	5	h	---
760 mm	199.6	5	t _e	0.0354	5	f'	to
100	165.2	5	30 mm	0.8687	5	g'	°
30	138.7	5	ΔHm cal/g			h'	
10	94.4	5	ΔHv cal/g			m	to
1			25°C	74.20	5	n	°K
Pressure mm 25°C	1449.3	5	30 mm	58.76	5	o	
t _e			BP	48.82	5	m'	to
Density g/ml 20°C	1.0399	3	t _e	46.29	5	n'	°K
25	1.0355	3	t _e (d, e)	46.03	5	o'	
d ₄ ^t 30			ΔHv/T _e	19.89	5	Surface tension dynes/cm. 20°C	
a	1.0575	5	d 165 to	73.58	5	γ	28.36
b	-0.03880	5	e 327 °C	0.0897	5	30	27.41
Ref. Index n _D 20°C	1.4583	3	d' to			40	26.49
25	1.4564	3	e' °C			Parachor [P]	
30			d g/ml			20°C	
"C"	0.5830	4	v _c ml/g			30	
MR (Obs.)	65.435	4	t _c °C			40	
MR (Calc.)	65.381	5	P _c mm			Sugd.	553.1
(n _D -d/2)			PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C	0.9872	5	Dispersion	
A 165 to	7.3390	3	30 mm	1.0000	5	Flash Point °C	
B 137 °C	2061.93	3	BP	0.9220	5	Fire Point	
C	186.6	3	t _e	0.8980	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 165 to	2.0379	5	t _c			Solubility in +	
B* 327 °C	1970.10	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k to			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' to			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C'			(B ^v)			Water in	
A ^{1*} to			(A ^v)				
B ^{1*} °C			c _p liq. °				
Ac to			c _p vap. °K				
Bc °C			c _v vap.				
Cc t _c °C							
Cryos. A°							
const. B°							
t _e °C	306.94	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 13

NAME		1-Bromotridecane			STRUCTURAL FORMULA			
					$\text{CH}_2\text{Br}(\text{CH}_2)_{11}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{13}\text{H}_{27}\text{Br}$	Molecular Weight	263.262			
		Ref.			Ref.			
F. P. °C	+6.2	3	dt/dP			f		to
F. P. 100%			°C/mm			g		°K
B. P. °C			25°C			h		
760 mm	292.	3	BP	0.0603	5	f'		to
100	214.	5	t _e	0.0352	5	g'		°K
30	179.	5	30 mm	0.8885	5	h'		
10	152.	5	ΔHm cal/g			m		to
1	106.	5	ΔHv cal/g			n		°K
Pressure mm 25°C			25°C			o		
t _e	1487.8	5	30 mm	57.79	5	m'		to
Density g/ml 20°C			BP	47.62	5	n'		°K
25	1.0277	3	t _e	45.31	5	o'		
d ₄ ^t	1.0234	3	t _e (d, e)	44.70	5	Surface tension dynes/cm. 20°C		
30			ΔHv/T _e	19.96	5	γ	28.54	5
a	1.0449	5	d 179	73.83	5		30	27.60
b	-0.03860	5	e 345	0.0897	5		40	26.68
Ref. Index n _D			d'			Parachor [P]		
20°C	1.4593	3	e'				20°C	
25	1.4574	3	d _c g/ml				30	
30			v _c ml/g				40	
"C"	0.5911	4	t _c °C				Sugd.	592.1
MR (Obs.)	70.069	4	P _c mm			Exp. L. l. %/wt. u.		
MR (Calc.) (n _D -d/2)	69.998	5	PV/RT			Dispersion		
Dielectric			25°C			Flash Point °C		
A 179	7.386	3	30 mm	1.0000	5	Fire Point		
B 355 °C	2143.0	3	BP	0.9130	5	M. Spec. Ultra V.		
C	184.	3	t _e	0.8946	5	X-Ray Dif.		
A* 179	2.101	5	t _c			Infrared		
B* 345 °C	2050.5	5	ΔHc kcal/m			Solubility in [†]		
K			ΔHf			Acetone		
c			ΔFf			Carbon tet.		
t _k to			Viscosity centistokes			Benzene		
t _x °C			η			Ether		
A' to						n-Heptane		
B' °C			B ^v to			Ethanol		
C' °C			A ^v °C			Water		
A* to			(B ^v) to			Water in		
B* °C			(A ^v) °C					
Ac to			c _p liq. °K					
Bc °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	324.61	5						
[†] grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Bromotetradecane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₁₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₄ H ₂₉ Br	Molecular Weight	277.288		
		Ref.			Ref.		
F.P. °C	5.6	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°
B.P. °C	307.	3	BP	0.0613	5	h	---
760 mm	228.	5	t _e	0.0351	5	f'	to
100	192.	5	t _e (d, e)	0.9070	5	g'	°
30	164.	5	ΔHm cal/g			h'	
10	118.	5	ΔHv cal/g			m	to
1			25°C			n	*K
Pressure mm 25°C			30 mm	56.96	5	o	
t _e	1525.4	5	BP	47.17	5	m'	to
Density g/ml 20°C	1.0170	3	t _e	44.44	5	n'	*K
d ₄ ²⁵	1.0129	3	ΔHv/T _e	44.21	5	o'	
d ₄ ³⁰				20.04	5	Surface tension dynes/cm. 20°C	
a	1.0334	5	d 192 to	73.29	5	30	28.70
b	-0.03820	5	e 362 °C	0.0851	5	40	27.79
Ref. Index n _D 20°C	1.4603	3	e' to			40	26.90
25	1.4584	3	e' °C			Sugd.	631.1
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.5986	4	v _c ml/g			30	
MR (Obs.)	74.719	4	t _c °C			40	
MR (Calc.) (nD-d/2)	74.617	5	P _c mm			Exp. L. l. %/wt. u. Dispersion	
Dielectric			PV/RT 25°C	1.0000	5	Flash Point °C	
A 192 to	7.430	3	30 mm	0.9187	5	Fire Point	
B 372 °C	2220.2	3	BP	0.8915	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	181.	3	t _e			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A* 192 to	2.161	5	t _c				
B* 362 °C	2127.3	5	ΔHc kcal/m				
K			ΔHf				
c			ΔFf				
t _k to			Viscosity centistokes				
t _x °C			η °C				
A' to			B ^v to				
B' °C			A ^v °C				
C'			(B ^v)				
A'* to			(A ^v)				
B'* °C			c _p liq. °				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A' consts. B'							
t _e °C	341.81	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 15

NAME		1-Bromopentadecane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₁₃ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₅ H ₃₁ Br	Molecular Weight	291.314		
F. P. °C	19.0	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0622	5	h	
760 mm	322.	3	t _e	0.0349	5	f'	to
100	241.	5	30 mm	0.9246	5	g'	°K
30	205.	5	ΔHm cal/g			h'	
10	177.	5	ΔHv cal/g			m	to
1	129.	5	25°C			n	°K
Pressure mm 25°C			30 mm	56.15	5	o	
t _e	1560.4	5	BP	46.19	5	m'	to
Density g/ml 20°C	1.0075	3	t _e	43.56	5	n'	°K
t	1.0035	3	t _e (d, e)	43.10	5	o'	
d ₄ 25			ΔHv/T _e	20.10	5	Surface tension dynes/cm. 20°C	
30						γ	28.85
a	1.0235	5	d 205 to	73.54	5		5
b	-0.03800	5	e 378 °C	0.0849	5		27.94
Ref. Index			d'				27.06
n _D 20°C	1.4611	3	e'			Parachor [P]	
25	1.4592	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.6052	4	t _c °C			40	
MR (Obs.)	79.357	4	P _c mm			Sugd.	670.1
MR (Calc.)	79.235	5	PV/RT			Exp. L. l. %/wt. u.	
(n _D -d/2)			25°C			Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 205 to	7.470	3	BP	0.9121	5	Fire Point	
B 388 °C	2293.8	3	t _e	0.8881	5	M. Spec.	
C	178.	3	t _c			Ultra V.	
A* 205 to	2.217	5	ΔHc kcal/m			X-Ray Dif.	
B* 378 °C	2200.9	5	ΔHf			Infrared	
K			ΔFf			Solubility in ⁺	
t _k to			Viscosity centistokes			Acetone	
t _x °C			η			Carbon tet.	
A' to						Benzene	
B' °C			B _v to			Ether	
C' °C			A _v °C			n-Heptane	
A'* to			(B _v) to			Ethanol	
B'* °C			(A _v) °C			Water	
Ac to			c _p liq. °K			Water in	
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	358.34	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Bromohexadecane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₁₄ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₆ H ₃₃ Br	Molecular Weight	305.340		
		Ref.			Ref.		
F. P. °C	17.9	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°
B. P. °C			BP	0.0631	5	h	
760 mm	336.	3	t _e	0.0348	5	f'	to
100	254.	5				g'	°
30	217.	5	ΔHm cal/g	0.9415	5	h'	
10	188.	5				m	to
1	140.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1594.9	5	30 mm	55.36	5		
Density g/ml 20°C	0.9991	3	BP	45.68	5	m'	to
d ₄ ^t 25	0.9951	3	t _e	42.73	5	n'	°K
d ₄ ^t 30			t _e (d, e)	42.56	5	o'	
			ΔHv/T _e	20.15	5	Surface tension dynes/cm. 20°C	
a	1.0151	5	d 217 to	73.04	5	30	28.98
b	-0.03800	5	e 394 °C	0.0814	5	40	28.06
Ref. Index n _D 20°C	1.4618	3	d'				27.17
25	1.4600	3	e'			Parachor [F]	
30			e'			20°C	
"C"	0.6112	4	d _c g/ml			30	
MR (Obs.)	83.987	4	v _c ml/g			40	
MR (Calc.)	83.853	5	t _c °C			Sugd.	709.1
(n _D -d/2)			P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 217 to	7.506	3	30 mm	1.0000	5	Flash Point °C	
B 140 to	2364.0	3	BP	0.9161	5	Fire Point	
C	175.	3	t _e	0.8853	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 217 to	2.268	5	t _c			Solubility in +	
B* 394 °C	2271.0	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _x			Viscosity centistokes			Ether	
t _x			η °C			n-Heptane	
A' to						Ethanol	
B'			B ^v			Water	
C'			A ^v			Water in	
A'* to			(B ^v)				
B'* °C			(A ^v)				
Ac to			c _p liq. °				
Bc t _e °C			c _p vap. °K				
Cc			c _v vap.				
Cryos. A° const. B°							
t _e °C	374.35	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 17

NAME		1-Bromoheptadecane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{15}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{17}\text{H}_{35}\text{Br}$	Molecular Weight 319.366				
		Ref.		Ref.		Ref.	
F. P. °C	29.6	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°K	
B. P. °C			BP	0.0640	5	h	
760 mm	349.	3	t _e	0.0347	5	f'	
100	266.	5	t _e 30 mm	0.9573	5	g'	
30	228.	5	ΔHm cal/g			h'	
10	199.	5	ΔHv cal/g			m	
1	149.	5	25°C			n	
Pressure mm 25°C			30 mm	54.38	5	o	
t _e	1624.7	5	BP	44.49	5	m'	
Density g/ml 20°C			t _e	41.79	5	n'	
t _e 25	0.9916 ^b	3	t _e (d, e)	41.26	5	o'	
t _e 30	0.9876 ^b	3	ΔHv/T _e	20.17	5		
d ₄ 30			d 228 to °C	73.00	5	Surface tension dynes/cm. 20°C	
a	1.0076	5	e 409 to °C	0.0817	5	30	
b	-0.03800	5	d'			40	
Ref. Index n _D 20°C			e'			29.11	
25	1.4625 ^b	3	d _c g/ml			28.18	
30	1.4606 ^b	3	v _c ml/g			27.28	
"C"	0.6167	4	t _c °C				
MR (Obs.)	88.625	4	P _c mm			Parachor [P] 20°C	
MR (Calc.)	88.471	5	PV/RT 25°C			30	
(n _D -d/2)			30 mm	1.0000	5	40	
Dielectric			BP	0.9071	5	Sugd.	
A 228 to °C	7.540	3	t _e	0.8826	5	Exp. L. l. %/wt. u.	
B 419 °C	2430.9	3	t _c			Dispersion	
C	173.	3	ΔHc kcal/m			Flash Point °C	
A* 228 to °C	2.317	5	ΔHf			Fire Point	
B* 409 °C	2337.7	5	ΔFf			M. Spec. Ultra V.	
K			Viscosity centistokes			X-Ray Dif.	
t _k to °C			η			Infrared	
t _x to °C						Solubility in ⁺	
A' to °C			B ^v to °C			Acetone	
B' to °C			A ^v to °C			Carbon tet.	
C' to °C			(B ^v) to °C			Benzene	
A'* to °C			(A ^v) °C			Ether	
B'* to °C			c _p liq. °K			n-Heptane	
Ac to °C			c _p vap. °K			Ethanol	
Bc to °C			c _v vap.			Water	
Cc to °C						Water in	
Cryos. A°							
const. B°							
t _e °C	388.51	5					

^b For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromooctadecane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{16}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{18}\text{H}_{37}\text{Br}$	Molecular Weight	333.392		
		Ref.			Ref.		
F. P. °C	28.2	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°
B. P. °C			BP	0.0648	5	h	---
760 mm	362.	3	t _e	0.0346	5	f'	to
100	278.	5				g'	°
30	240.	5	30 mm	0.9730	5	h'	
10	210.	5	ΔHm cal/g				
1	160.	5					
Pressure mm 25°C			ΔHv cal/g			m	to
t _e	1655.6	5	25°C			n	°K
			30 mm	53.65	5	o	
Density g/ml 20°C	0.9848 ^b	3	BP	44.07	5		
25	0.9809 ^b	3	t _e	41.00	5	m'	to
d ₄ 30			t _e (d, e)	40.83	5	n'	°K
			ΔHv/T _e	20.20	5	o'	
a	1.0004	5	d 240 to	72.38	5	Surface tension dynes/cm. 20°C	
b	-0.03780	5	e 423 °C	0.0782	5	y	29.22
			d' to			30	28.31
Ref. Index n _D 20°C	1.4631 ^b	3	e' to			40	27.41
25	1.4613 ^b	3					
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.6217	4	v _c ml/g				
MR (Obs.)	93.260	4	t _c °C				
MR (Calc.) (nD-d/2)	93.089	5	P _c mm				
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A 240 to	7.570	3	30 mm	1.0000	5	Dispersion	
B 433 °C	2495.2	3	BP	0.9123	5	Flash Point °C	
C	170.	3	t _e	0.8795	5	Fire Point °C	
A* 240 to	2.362	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 423 °C	2402.5	5				Solubility in +	
K			Viscosity centistokes			Acetone	
c			η °C			Carbon tet.	
t _k to						Benzene	
t _x °C						Ether	
A' to						n-Heptane	
B' °C						Ethanol	
C' to						Water	
A'*	to					Water in	
B'*	°C						
A _c to			B ^v to				
B _c °C			A ^v °C				
C _c t _c °C			(B ^v)				
			(A ^v)				
Cryos. A° const. B°			c _p liq. °				
t _e °C	403.47	5	c _p vap. °K				
			c _v vap.				

^b For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 19

NAME		1-Bromonadecane			STRUCTURAL FORMULA			
					$\text{CH}_2\text{Br}(\text{CH}_2)_{10}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{19}\text{H}_{39}\text{Br}$	Molecular Weight	347.418			
		Ref.			Ref.			Ref.
F. P. °C	38.5	3	dt/dP			f	to	
F. P. 100%			°C/mm			g	to	
B. P. °C			25°C			h	to	
760 mm	374.	3	BP	0.0657	5			
100	289.	5	t _e	0.0345	5	f'	to	
30	250.	5	30 mm	0.9884	5	g'	to	
10	220.	5	ΔHm cal/g			h'	to	
1	169.	5	ΔHv cal/g			m	to	
Pressure mm 25°C			25°C			n	to	
t _e	1684.1	5	30 mm	52.74	5	o	to	
Density g/ml 20°C			BP	43.34	5	m'	to	
t	0.9786 ^b	3	t _e	40.14	5	n'	to	
d ₄ 30	0.9748 ^b	3	t _e (d, e)	40.07	5	o'	to	
			ΔHv/T _e	20.21	5			
a	0.9938	5	d 250 to °C	71.68	5	Surface tension dynes/cm. 20°C		
b	-0.03760	5	e 437 to °C	0.0758	5	γ	30	29.32
Ref. Index n _D 20°C			d'				40	28.42
25	1.4637 ^b	3	e'					27.54
30	1.4618 ^b	3	d _c g/ml			Parachor [P] 20°C		
"C"	0.6264	4	v _c ml/g				30	
MR (Obs.)	97.908	4	t _c °C				40	
MR (Calc.)	97.707	5	P _c mm			Sugd.		826.1
(n _D -d/2)			PV/RT 25°C			Exp. L. l. %/wt. u.		
Dielectric			30 mm	1.0000	5	Dispersion		
A 250 to °C	7.597	3	BP	0.9126	5	Flash Point °C		
B 447 °C	2557.2	3	t _e	0.8770	5	Fire Point		
C	168.	3	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared		
A* 250 to °C	2.402	5	ΔHc kcal/m			Solubility in ⁺		
B* 437 °C	2464.4	5	ΔHf			Acetone		
K			ΔFf			Carbon tet.		
t _k to °C			Viscosity centistokes η			Benzene		
t _x to °C						Ether		
A' to °C						n-Heptane		
B' to °C						Ethanol		
C' to °C						Water		
A* to °C			B ^v to °C			Water in		
B* to °C			A ^v to °C					
Ac to °C			(B ^v) to °C					
Bc to °C			(A ^v) to °C					
Cc to °C			c _p liq. °K					
Cryos. A° const. B°			c _p vap. °K					
t _e °C	417.09	5	c _v vap.					
^b For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Bromoeicosane		STRUCTURAL FORMULA	
				CH ₂ Br(CH ₂) ₁₈ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₄₁ Br	Molecular Weight	361.444
		Ref.		Ref.	
F. P. °C	36.9	3	dt/dP °C/mm		
F. P. 100%			25°C		f to
B. P. °C			BP	0.0666	5
760 mm	386.	3	t _e	0.0345	5
100	300.	5	30 mm	1.0038	5
30	260.	5	ΔHm cal/g		
10	229.	5	ΔHv cal/g		
1	177.	5	25°C		
Pressure mm 25°C			30 mm	51.88	5
t _e	1711.5	5	BP	42.52	5
Density g/ml 20°C	0.9730 ^b	3	t _e	39.30	5
d ^t 25	0.9692 ^b	3	t _e (d, e)	39.21	5
d ⁴ 30			ΔHv/T _e	20.18	5
a	0.9882	5	d 260 to	71.21	5
b	-0.03760	5	e 451 °C	0.0743	5
Ref. Index			d' to		
n _D 20°C	1.4643 ^b	3	e' to		
25	1.4624 ^b	3	d _c g/ml		
30			v _c ml/g		
"C"	0.6308	4	t _c °C		
MR (Obs.)	102.561	4	P _c mm		
MR (Calc.)	102.325	5	PV/RT		
(nD-d/2)			25°C		
Dielectric			30 mm	1.0000	5
A 260 to	7.621	3	BP	0.9102	5
B 461 °C	2617.5	3	t _e	0.8742	5
C	166.	3	t _c		
A* 260 to	2.440	5	ΔHc kcal/m		
B* 451 °C	2524.9	5	ΔHf		
K			ΔFf		
c			Viscosity		
t _k to			centistokes		
t _x °C			η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C'			(B ^v) to		
A'* to			(A ^v) °C		
B'* °C			c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc t _c °C					
Cryos. A°					
consts. B°					
t _e °C	430.56	5			

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 21

NAME		1-Bromoheneicosane			STRUCTURAL FORMULA					
					$\text{CH}_2\text{Br}(\text{CH}_2)_{19}\text{CH}_3$					
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{21}\text{H}_{43}\text{Br}$	Molecular Weight	375.470					
F. P. °C	46.1	3	dt/dP °C/mm			Ref.	f	to		
F. P. 100%			25°C				g	to		
B. P. °C			BP	0.0685	5		h	to		
760 mm	397.	3	t _e	0.0352	5		f'	to		
100	308.	5	t _e (d, e)	1.0269	5		g'	to		
30	268.	5	ΔHm cal/g				h'	to		
10	236.	5	ΔHv cal/g				m	to		
1	183.	5	25°C				n	to		
Pressure mm 25°C			30 mm	50.20	5		o	to		
t _e	1736.2	5	BP	40.83	5		m'	to		
Density g/ml 20°C			t _e	37.73	5		n'	to		
d ^t 25	0.9679 ^a	3	t _e (d, e)	37.46	5		o'	to		
d ⁴ 30	0.9641 ^a	3	ΔHv/T _e	19.77	5		Surface tension dynes/cm. 20°C			
a	0.9831	5	d 268 to °C	69.58	5		γ	30	29.50	5
b	-0.03760	5	e' 464 to °C	0.0724	5			40	28.59	5
Ref. Index n _D 20°C			d _c g/ml				Parachor [P] 20°C			
25	1.4648 ^a	3	v _c ml/g					30		
30	1.4629 ^a	3	t _c °C					40		
"C"	0.6347	4	P _c mm				Sugd.	904.1		5
MR (Obs.)	107.202	4	PV/RT 25°C				Exp. L. l. %/wt. u.			
MR (Calc.) (nD-d/2)	106.943	5	30 mm	1.0000	5		Dispersion			
Dielectric			BP	0.9044	5		Flash Point °C			
A 268 to °C	7.56063	5	t _e	0.8707	5		Fire Point			
B 474 °C	2625.4	5	t _c				M. Spec. Ultra V.			
C 164.	164.	5	ΔHc kcal/m				X-Ray Dif.			
A* 268 to °C	2.39245	5	ΔHf				Infrared			
B* 464 °C	2532.6	5	ΔFf				Solubility in [†]			
K			Viscosity centistokes				Acetone			
t _k to °C			η				Carbon tet.			
t _x to °C							Benzene			
A' to °C			B ^v to °C				Ether			
B' to °C			A ^v to °C				n-Heptane			
C' to °C			(B ^v) to °C				Ethanol			
A* to °C			(A ^v) °C				Water			
B* to °C			c _p liq. °K				Water in			
Ac to °C			c _p vap. °K							
Bc to °C			c _v vap.							
Cc to °C										
Cryos. A°										
const. B°										
t _e °C	443.58	5								

^a For undercooled liquid below normal F.P.[†] grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromodocosane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₂₀ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₂ H ₄₅ Br	Molecular Weight	389.496		
		Ref.				Ref.	
F. P. °C	44.3	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C			g	
B. P. °C			BP	0.0693	5	h	
760 mm	408.	3	t _e	0.0351	5	f'	to °K
100	318.	5	30 mm	1.0409	5	g'	
30	277.	5	ΔHm cal/g			h'	
10	245.	5	ΔHv cal/g			m	to °K
1	191.	5	25°C			n	
Pressure mm 25°C			30 mm	49.42	5	o	
t _e	1761.9	5	BP	40.12	5	m'	to °K
Density g/ml 20°C	0.9632 ^a	3	t _e	36.98	5	n'	
d ^t 25	0.9594 ^a	3	t _e (d, e)	36.72	5	o'	
d ₄ 30			ΔHv/T _e	19.75	5	Surface tension dynes/cm. 20°C	
a	0.9784	5	d 277 to °C	69.06	5	30	29.59
b	-0.03760	5	e 476 to °C	0.0709	5	40	28.66
Ref. Index n _D 20°C	1.4652 ^a	3	d' to °C			40	27.76
25	1.4633 ^a	3	e' to °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.6383	4	v _c ml/g			40	
MR (Obs.)	111.832	4	t _c °C			Sugd.	943.1
MR (Calc.) (nD-d/2)	111.561	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0000	5	Dispersion	
A 277 to °C	7.58180	5	30 mm	0.9031	5	Flash Point °C	
B 486 to °C	2679.6	5	BP	0.8685	5	Fire Point	
C	162.	5	t _e			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 277 to °C	2.42589	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 476 to °C	2586.9	5	ΔHc kcal/m				
K			ΔHf				
t _x to °C			ΔFf				
t _x to °C			Viscosity centistokes				
A' to °C			η °C				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A ^{1*} to °C			(B ^v) to °C				
B ^{1*} to °C			(A ^v) °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A ¹ consts. B ¹							
t _e °C	456.01	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 23

NAME		1-Bromotricosane			STRUCTURAL FORMULA				
					$\text{CH}_2\text{Br}(\text{CH}_2)_{21}\text{CH}_3$				
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{23}\text{H}_{47}\text{Br}$	Molecular Weight	403.522				
		Ref.				Ref.			Ref.
F. P. °C	52.7	3		dt/dP			f	to	
F. P. 100%				°C/mm			g	°K	
B. P. °C				25°C			h		
760 mm	418.	3		BP	0.0700	5	f'	to	
100	327.	5		t _e	0.0351	5	g'	°K	
30	285.	5		30 mm	1.0534	5	h'		
10	253.	5		ΔHm cal/g			m	to	
1	199.	5					n	°K	
Pressure mm				ΔHv cal/g			o		
25°C				25°C					
t _e	1784.1	5		30 mm	48.61	5	m'	to	
Density g/ml				BP	39.38	5	n'	°K	
20°C	0.9588 ^a	3		t _e	36.21	5	o'		
25	0.9551 ^a	3		t _e (d, e)	35.95	5			
d ₄				ΔHv/T _e	19.74	5			
30									
a	0.9736	5		d 285 to	68.48	5	Surface tension dynes/cm. 20°C		
b	-0.03740	5		e 487 °C	0.0696	5	γ	29.65	5
Ref. Index				d'			30	28.75	5
n _D				e'			40	27.86	5
20°C	1.4656 ^a	3							
25	1.4638 ^a	3		d _c g/ml			Parachor [P]		
30				v _c ml/g			20°C		
"C"	0.6418	4		t _c °C			30		
MR (Obs.)	116.476	4		P _c mm			40		
MR (Calc.)	116.179	5					Sugd.	982.1	5
(nD-d/2)				PV/RT			Exp. L. l. %/wt. u.		
Dielectric				25°C			Dispersion		
A 285 to	7.59909	5		30 mm	1.0000	5	Flash Point °C		
B 497 °C	2727.2	5		BP	0.9014	5	Fire Point		
C	160.	5		t _e	0.8660	5	M. Spec.		
A* 285 to	2.45624	5		t _c			Ultra V.		
B* 487 °C	2635.1	5		ΔHc kcal/m			X-Ray Dif.		
K				ΔHf			Infrared		
t _k to				ΔFf			Solubility in ⁺		
t _x °C				Viscosity centistokes			Acetone		
A' to				η			Carbon tet.		
B' °C							Benzene		
C' °C							Ether		
A* to				B ^v to			n-Heptane		
B* °C				A ^v °C			Ethanol		
Ac to				(B ^v) to			Water		
Bc °C				(A ^v) °C			Water in		
Cc °C				c _p liq. °K					
Cryos. A°				c _p vap. °K					
const. B°				c _v vap.					
t _e °C	467.27	5							
^a For undercooled liquid below normal F. P.					⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

NAME		1-Bromotetracosane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{22}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{24}\text{H}_{49}\text{Br}$	Molecular Weight	417.548		
		Ref.				Ref.	Ref.
F. P. °C	50.7	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0707	5	h	
760 mm	428.	3	t _e	0.0351	5	f'	to
100	336.	5	t _e (d, e)			g'	°K
30	294.	5	ΔHm cal/g			h'	
10	261.	5	ΔHv cal/g			m	to
1	206.	5	25°C			n	°K
Pressure mm 25°C			30 mm	47.85	5	o	
t _e	1806.8	5	BP	38.69	5	m'	to
Density g/ml 20°C	0.9549 ^a	3	t _e	35.49	5	n'	°K
d ₄ ^t 25	0.9512 ^a	3	ΔHv/T _e	35.24	5	o'	
d ₄ ^t 30				19.71	5	Surface tension dynes/cm. 20°C	
a	0.9697	5	d 294 to	67.95	5	γ	29.74
b	-0.03740	5	e 499 °C	0.0684	5		28.82
Ref. Index n _D 20°C	1.4660 ^a	3	e' °C				27.93
25	1.4641 ^a	3	d _c g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.6449	4	t _c °C			30	
MR (Obs.)	121.107	4	P _c mm			40	
MR (Calc.) (nD-d/2)	120.797	5	PV/RT 25°C	1.0000	5	Sugd.	1021.1
Dielectric			30 mm	0.9001	5	Exp. L. l. %/wt. u.	
A 294 to	7.61602	5	BP	0.8639	5	Dispersion	
B 509 °C	2774.8	5	t _e			Flash Point °C	
C	158.	5	t _c			Fire Point	
A* 294 to	2.48528	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 499 °C	2683.2	5	ΔHf			Solubility in +	
K			Viscosity centistokes °C			Acetone	
c						Carbon tet.	
t _x °C						Benzene	
A' °C						Ether	
B' °C			B ^v to			n-Heptane	
C' °C			A ^v °C			Ethanol	
A'*			(B ^v) to			Water	
B'*			(A ^v) °C			Water in	
Ac to			c _p liq. °K				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A* consts. B'							
t _e °C	478.6	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 25

NAME		1-Bromopentacosane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{23}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{25}\text{H}_{51}\text{Br}$	Molecular Weight 431.574				
		Ref.		Ref.		Ref.	
F.P. °C	58.3	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C		g	—	°K
B.P. °C			BP	0.0714	5	h	
760 mm	437.	3	t_e	0.0351	5	f'	to
100	344.	5	t_e 30 mm	1.0770	5	g'	—
30	302.	5				h'	°K
10	269.	5	ΔH_m cal/g			m	to
1	213.	5				n	—
Pressure mm 25°C			ΔH_v cal/g			o	°K
t_e	1826.6	5	25°C				
Density g/ml 20°C			30 mm	47.07	5		
d_t 25	0.9511 ^a	3	BP	37.98	5	m'	to
d_4 30	0.9475 ^a	3	t_e	34.76	5	n'	—
			t_e (d, e)	34.51	5	o'	°K
a	0.9655	5	$\Delta H_v/T_e$	19.69	5		
b	-0.03720	5	d 302 to	67.34	5	Surface tension dynes/cm. 20°C	
Ref. Index n_D 20°C			e 509 °C	0.0672	5	29.79	5
25	1.4664 ^a	3	d'			30	5
30	1.4645 ^a	3	e'			40	5
"C"	0.6480	4	d_c g/ml			Parachor [P] 20°C	
MR (Obs.)	125.768	4	v_c ml/g			30	
MR (Calc.) (nd-d/2)	125.415	5	t_c °C			40	
Dielectric			P_c mm			Sugd.	1060.1
A 302 to	7.62930	5	PV/RT 25°C			Exp. L. l. %/wt. u.	
B 519 °C	2815.9	5	30 mm	1.0000	5	Dispersion	
C	156.	5	BP	0.8987	5	Flash Point °C	
A* 302 to	2.51096	5	t_e	0.8618	5	Fire Point	
B* 509 °C	2724.8	5	t_c			M. Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔH_c kcal/m			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
t_k to			ΔH_f				
t_x °C			ΔF_f				
A' to			Viscosity centistokes η °C				
B' °C			B^v to				
C' °C			A' °C				
A* to			(B ^v) to				
B* °C			(A ^v) °C				
Ac to			c_p liq. °K				
Bc t_c °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A° const. B°							
t_e °C	488.71	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromohexacosane		STRUCTURAL FORMULA	
				CH ₂ Br(CH ₂) ₂₄ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₂₆ H ₅₃ Br	Molecular Weight	445.600
F. P. °C	56.4	3			
F. P. 100%					
B. P. °C					
760 mm	447.	3		0.0721	5
100	353.	5		0.0351	5
30	310.	5		1.0903	5
10	277.	5			
1	220.	5			
Pressure mm 25°C					
t _e	1849.2	5			
Density g/ml 20°C					
d ^t 25	0.9477 ^a	3			
d ^t 30	0.9441 ^a	3			
"a"	0.9621	5			
"b"	-0.03720	5			
Ref. Index n _D 20°C					
25	1.4667 ^a	3			
30	1.4648 ^a	3			
"C"	0.6507	4			
MR (Obs.)	130.393	4			
MR (Calc.) (n _D -d/2)	130.330	5			
Dielectric					
A 310 to	7.65383	5			
B 530 °C	2873.4	5			
C	155.	5			
A* 310 to	2.54638	5			
B* 520 °C	2782.4	5			
K					
c					
t _k — to					
t _x — °C					
A' — to					
B' — °C					
C'					
A'* to					
B'* °C					
Ac — to					
Bc — °C					
Cc — °C					
Cryos. A°					
consts. B°					
t _e °C	499.99	5			
dt/dP °C/mm 25°C					
BP					
t _e 30 mm					
ΔHm cal/g					
ΔHv cal/g 25°C					
30 mm					
BP	46.37	5			
t _e	37.38	5			
t _e (d, e)	34.13	5			
ΔHv/T _e	33.90	5			
19.67		5			
d 310 to	66.76	5			
e 520 °C	0.0657	5			
d' — to					
e' — °C					
d _c g/ml					
v _c ml/g					
t _c °C					
P _c mm					
PV/RT 25°C					
30 mm					
BP	1.0000	5			
t _e	0.8973	5			
t _c	0.8597	5			
ΔHc kcal/m					
ΔHf					
ΔFi					
Viscosity centistokes					
η °C					
B ^v — to					
A ^v — °C					
(B ^v) — to					
(A ^v) — °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f — to					
g — °K					
h					
f' — to					
g' — °K					
h'					
m — to					
n — °K					
o					
m' — to					
n' — °K					
o'					
Surface tension dynes/cm. 20°C					
30	29.86	5			
40	28.96	5			
40	28.08	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1099.1	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in +					
Acetone					
Carbon tet.					
Benzene					
Ether					
n-Heptane					
Ethanol					
Water					
Water in					

^a For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 27

NAME		1-Bromoheptacosane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{25}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{27}\text{H}_{55}\text{Br}$	Molecular Weight	459.626		
		Ref.			Ref.	Ref.	
F.P. °C	63.4	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C			h	
760 mm	456.	3	BP	0.0727	5		
100	361.	5	t_e	0.0351	5	f'	to
30	318.	5	30 mm	1.1014	5	g'	°K
10	284.	5	$\Delta\text{Hm cal/g}$			h'	
1	227.	5				m	to
Pressure mm 25°C			$\Delta\text{Hv cal/g}$			n	°K
t_e	1869.5	5	25°C			o	
Density g/ml 20°C			30 mm	45.69	5		
d_4^{25}	0.9445 ^a	3	BP	36.76	5	m'	to
30	0.9409 ^a	3	t_e (d, e)	33.48	5	n'	°K
			$\Delta\text{Hv}/T_e$	19.64	5	o'	
a	0.9589	5	d 318	66.23	5	Surface tension dynes/cm. 20°C	
b	-0.03720	5	e 530	0.0646	5	30	29.92
Ref. Index			d'			40	29.01
n_D 20°C	1.4670 ^a	3	e'				28.13
25	1.4651 ^a	3				Parachor [P]	
30			d_c g/ml			20°C	
"C"	0.6533	4	v_c ml/g			30	
MR (Obs.)	135.027	4	t_c °C			40	
MR (Calc.)	134.651	5	P_c mm			Sugd.	1138.1
(nD-d/2)						Exp. L.l. %/wt. u.	
Dielectric			PV/RT			Dispersion	
A 318	7.66652	5	25°C			Flash Point °C	
B 540 °C	2914.5	5	30 mm	1.0000	5	Fire Point	
C	153.	5	BP	0.8962	5	M. Spec. Ultra V.	
A* 318	2.57022	5	t_e	0.8578	5	X-Ray Dif.	
B* 530 °C	2824.0	5	t_c			Infrared	
K			$\Delta\text{Hc kcal/m}$			Solubility in ⁺	
t_k to			ΔHf			Acetone	
t_x °C			ΔFf			Carbon tet.	
A' to			Viscosity centistokes			Benzene	
B' °C			η			Ether	
C' °C						n-Heptane	
A** to			B ^v to			Ethanol	
B** °C			A ^v °C			Water	
Acl to			(B ^v) to			Water in	
Bc °C			(A ^v) °C				
Cc °C			c_p liq. °K				
Cryos. A°			c_p vap. °K				
const. B°			c_v vap.				
t_e °C	510.17	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromooctacosane		STRUCTURAL FORMULA	
				$\text{CH}_2\text{Br}(\text{CH}_2)_{26}\text{CH}_3$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{28}\text{H}_{57}\text{Br}$	Molecular Weight	473.652
F. P. °C	61.4	3	dt/dP °C/mm		
F. P. 100%			25°C		
B. P. °C	464.	3	BP	0.0733	5
760 mm	369.	5	t _e	0.0351	5
100	325.	5	30 mm	1.1110	5
30	291.	5	ΔHm cal/g		
10	233.	5	ΔHv cal/g		
1			25°C		
Pressure mm 25°C	1887.1	5	30 mm	44.97	5
t _e			BP	36.11	5
Density g/ml 20°C	0.9415 ^a	3	t _e	32.80	5
d ^t 25	0.9379 ^a	3	t _e (d, e)	32.59	5
d ₄ 30			ΔHv/T _e	19.61	5
a	0.9559	5	d 325 to	65.64	5
b	-0.03720	5	e 539 to	0.0637	5
Ref. Index n _D 20°C	1.4673 ^a	3	d'		
25	1.4654 ^a	3	e'		
30			d _c g/ml		
"C"	0.6558	4	v _c ml/g		
MR (Obs.)	139.668	4	t _c °C		
MR (Calc.)	139.269	5	P _c mm		
(n _D -d/2)			PV/RT		
Dielectric			25°C		
A 325 to	7.67582	5	30 mm	1.0000	5
B 549 °C	2948.9	5	BP	0.8950	5
C	151.	5	t _e	0.8560	5
A* 325 to	2.59096	5	t _c		
B* 539 °C	2859.1	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to			Viscosity centistokes		
t _x °C			η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C'			(B ^v) to		
A* to			(A ^v) °C		
B* °C			c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc °C					
Cryos. A°					
consts. B°					
t _e °C	519.21	5			

^a For undercooled liquid below normal F.P.		⁺ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula			
SOURCE: MCA			
PURIFICATION: MCA			
LITERATURE REFERENCES: 3 MCA			

TABLE III. BROMOALKANES

No. 29

NAME		1-Bromononacosane			STRUCTURAL FORMULA				
					$\text{CH}_2\text{Br}(\text{CH}_2)_{27}\text{CH}_3$				
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{29}\text{H}_{59}\text{Br}$	Molecular Weight	487.678				
		Ref.				Ref.			Ref.
F. P. °C	67.8	3		dt/dP			f	to	
F. P. 100%				°C/mm			g	to	
B. P. °C				25°C			h	to	
760 mm	473.	3		BP	0.0739	5			
100	377.	5		t_e	0.0350	5	f'	to	
30	332.	5		30 mm	1.1229	5	g'	to	
10	298.	5					h'	to	
1	240.	5		ΔH_m cal/g			m	to	
Pressure mm 25°C				ΔH_v cal/g			n	to	
t_e	1906.7	5		25°C			o	to	
Density g/ml 20°C				30 mm	44.33	5			
t 25	0.9387 ^a	3		BP	35.55	5	m'	to	
d_4 30	0.9351 ^a	3		t_e	32.21	5	n'	to	
				t_e (d, e)	32.03	5	o'	to	
				$\Delta H_v/T_e$	19.58	5			
a	0.9531	5		d 332 to	65.09	5	Surface tension dynes/cm. 20°C		
b	-0.03720	5		e 549 to	0.0625	5	y	30	30.02
Ref. Index				d'				40	29.11
n_D 20°C	1.4676 ^a	3		e'					28.22
25	1.4657 ^a	3					Parachor [P]		
30				d_c g/ml				20°C	
"C"	0.6582	4		v_c ml/g				30	
MR (Obs.)	144.313	4		t_c °C				40	
MR (Calc.)	143.887	5		P_c mm				Sugd.	1216.1
($n_D - d/2$)				PV/RT			Exp. L. l. %/wt.		
Dielectric				25°C			u.	Dispersion	
A 332 to	7.69612	5		30 mm	1.0000	5	Flash Point °C		
B 559 °C	2999.9	5		BP	0.8936	5	Fire Point		
C	150.	5		t_e	0.8539	5	M. Spec.		
A* 332 to	2.62186	5		t_c			Ultra V.		
B* 549 °C	2910.5	5		ΔH_c kcal/m			X-Ray Dif.		
K				ΔH_f			Infrared		
t_k to				ΔF_f			Solubility in ⁺		
t_x °C				Viscosity centistokes			Acetone		
A' to				η			Carbon tet.		
B' °C							Benzene		
C' °C				B ^v to			Ether		
A* to				A ^v °C			n-Heptane		
B* °C				(B ^v) to			Ethanol		
Ac to				(A ^v) °C			Water		
Bc °C				c_p liq. °K			Water in		
Cc °C				c_p vap. °K					
Cryos. A°				c_v vap.					
const. B°									
t_e °C	529.36	5							

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromotriacontane		STRUCTURAL FORMULA	
				$\text{CH}_2\text{Br}(\text{CH}_2)_{28}\text{CH}_3$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{30}\text{H}_{61}\text{Br}$	Molecular Weight	501.704
F. P. °C	65.8	3			
F. P. 100%					
B. P. °C					
760 mm	481.	3		0.0745	5
100	384.	5		0.0350	5
30	339.	5		1.1325	5
10	305.	5			
1	246.	5			
Pressure mm 25°C					
t_e	1924.0	5			
Density g/ml 20°C					
d_4^{25}	0.9361 ^a	3		43.69	5
	0.9325 ^a	3		34.96	5
				31.60	5
				31.43	5
				19.54	5
"C"	0.6604	4			
MR (Obs.)	148.958	4			
MR (Calc.)	148.505	5			
(n _D -d/2)					
Dielectric					
A 339 to	7.70503	5			
B 568 °C	3034.4	5			
C	148.	5			
A* 339 to	2.64160	5			
B* 558 °C	2945.8	5			
K					
c					
t_k to					
t_x °C					
A' to					
B' °C					
C'					
A'* to					
B'* °C					
Ac to					
Bc °C					
Cc °C					
Cryos. A°					
consts. B°					
t_e °C	538.40	5			
dt/dP °C/mm					
25°C					
BP					
t_e					
30 mm					
ΔH_m cal/g					
ΔH_v cal/g					
25°C					
30 mm					
BP					
t_e					
t_e (d, e)					
$\Delta H_v/T_e$					
d 339 to	64.59	5			
e 558 °C	0.0616	5			
d' to					
e' °C					
d_c g/ml					
t_c ml/g					
t_c °C					
P _c mm					
PV/RT					
25°C					
30 mm					
BP					
t_e					
t_c					
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes					
η °C					
B ^v to					
A ^v °C					
(B ^v) to					
(A ^v) °C					
c_p liq. °K					
c_p vap. °K					
c_v vap.					
f to					
g °K					
h					
f' to					
g' °K					
h'					
m to					
n °K					
o					
m' to					
n' °K					
o'					
Surface tension dynes/cm. 20°C					
γ 30				30.08	5
40				29.16	5
				28.27	5
Parachor [P] 20°C					
30					
40					
Sugd.	1255.1	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in +					
Acetone					
Carbon tet.					
Benzene					
Ether					
n-Heptane					
Ethanol					
Water					
Water in					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 31

NAME		1-Bromohentriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{29}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{31}\text{H}_{63}\text{Br}$	Molecular Weight 515.730				
	Ref.			Ref.		Ref.	
F.P. °C	71.7	3			f	to	
F.P. 100%					g	to °K	
B.P. °C					h		
760 mm	488.	3	dt/dP °C/mm				
100	390.	5	25°C	0.0750	5		
30	345.	5	BP	0.0351	5	f'	
10	310.	5	t _e	1.1408	5	g'	
1	251.	5	30 mm			h'	
			ΔHm cal/g				
Pressure mm 25°C			ΔHv cal/g			m	
t _e	1939.4	5	25°C			n	
			30 mm	43.03	5	o	
Density g/ml 20°C			BP	34.36	5		
d ₄ ²⁵	0.9336 ^a	3	t _e	30.98	5	m'	
d ₄ ³⁰	0.9300 ^a	3	t _e (d, e)	30.82	5	n'	
			ΔHv/T _e	19.50	5	o'	
a	0.9480	5	d 345 to °C	64.00	5		
b	-0.03720	5	e 566 to °C	0.0607	5	Surface tension dynes/cm. 20°C	
Ref. Index n _D 25	1.4681 ^a	3	d'			30	
30	1.4662 ^a	3	e'			40	
"C"	0.6624	4				28.30	
MR (Obs.)	153.589	4	d _c g/ml				
MR (Calc.) (nD-d/2)	153.123	5	v _c ml/g			Parachor [P] 20°C	
Dielectric			t _c °C			30	
A 345 to °C	7.71074	5	P _c mm			40	
B 576 to °C	3062.2	5	PV/RT 25°C			Sugd. 1294.1	
C	146.	5	30 mm	1.0000	5		
A* 345 to °C	2.65793	5	BP	0.8915	5	Exp. L.l. %/wt. u.	
B* 566 to °C	2974.2	5	t _e	0.8506	5	Dispersion	
K			t _c			Flash Point °C	
t _k to °C			ΔHc kcal/m			Fire Point	
t _x to °C			ΔHf			M. Spec. Ultra V.	
A' to °C			ΔFf			X-Ray Dif.	
B' to °C			Viscosity centistokes			Infrared	
C' to °C			η			Solubility in +	
A** to °C			B ^v to °C			Acetone	
B** to °C			A ^v to °C			Carbon tet.	
Ac to °C			(B ^v) to °C			Benzene	
Bc to °C			(A ^v) to °C			Ether	
Cc to °C			c _p liq. °K			n-Heptane	
Cryos. A° const. B°			c _p vap. °K			Ethanol	
t _e °C	546.32	5	c _v vap.			Water	
						Water in	

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromodotriacontane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₃₀ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₂ H ₆₅ Br	Molecular Weight	529.756		
		Ref.			Ref.		
F. P. °C	69.7	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C BP	0.0756	5	g	
B. P. °C	496.	3	t _e	0.0350	5	h	
760 mm	397.	5	t _e 30 mm	1.1512	5	f'	to °K
100	352.	5	ΔHm cal/g			g'	
30	317.	5	ΔHv cal/g			h'	
10	257.	5	25°C			m	to °K
1			30 mm	42.43	5	n	
Pressure mm 25°C	1956.7	5	BP	33.84	5	o	
t _e			t _e	30.43	5	m'	to °K
Density g/ml 20°C	0.9313 ^a	3	t _e (d, e)	30.30	5	n'	
d ^t 25	0.9277 ^a	3	ΔHv/T _e	19.46	5	o'	to °K
d ₄ 30							
a	0.9457	5	d 352 to °C	63.44	5	Surface tension dynes/cm. 20°C	
b	-0.03720	5	e 575 to °C	0.0597	5	γ	30 30.17 5 40 29.24 5 28.34 5
Ref. Index n _D 20°C	1.4684 ^a	3	d _c g/ml			Parachor [P]	
25	1.4665 ^a	3	v _c ml/g			20°C	
30			t _c °C			30	
"C"	0.6645	4	P _c mm			40	
MR (Obs.)	158.242	4	PV/RT 25°C			Sugd.	1333.1 5
MR (Calc.) (nD-d/2)	157.741	5	30 mm	1.0000	5	Exp. L. l. %/wt. u.	
Dielectric			BP	0.8903	5	Dispersion	
A 352 to °C	7.72725	5	t _e	0.8489	5	Flash Point °C	
B 585 to °C	3106.6	5	t _c			Fire Point	
C	145.	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 352 to °C	2.68429	5	ΔHf			Solubility in +	
B* 575 to °C	3019.0	5	ΔFf			Acetone	
K			Viscosity centistokes η °C			Carbon tet.	
t _k to °C						Benzene	
t _x to °C						Ether	
A' to °C			B ^v to °C			n-Heptane	
B' to °C			A ^v to °C			Ethanol	
C' to °C			(B ^v) to °C			Water	
A'* to °C			(A ^v) to °C			Water in	
B'* to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* const. B*							
t _e °C	555.35	5					
^a For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 33

NAME	1-Bromotritriacontane				STRUCTURAL FORMULA			
					$\text{CH}_2\text{Br}(\text{CH}_2)_{31}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{33}\text{H}_{67}\text{Br}$	Molecular Weight 543.782					
		Ref.					Ref.	
F. P. °C	75.3	3	dt/dP				f	
F. P. 100%			°C/mm				g	
B. P. °C			25°C				h	
760 mm	503.	3	BP		0.0761	5	f'	
100	404.	5	t _e		0.0351	5	g'	
30	358.	5	30 mm		1.1587	5	h'	
10	323.	5	ΔHm cal/g				m	
1	262.	5	ΔHv cal/g				n	
Pressure mm 25°C			25°C				o	
t _e	1971.1	5	30 mm		41.86	5	m'	
Density g/ml 20°C			BP		33.28	5	n'	
t	0.9291 ^a	3	t _e		29.84	5	o'	
d	0.9255 ^a	3	t _e (d, e)		29.71	5	Surface tension dynes/cm. 20°C	
d ₄			ΔHv/T _e		19.40	5	30	
a	0.9435	5	d 358		63.08	5	40	
b	-0.03720	5	e 583		0.0592	5	30	
Ref. Index n _D			d'				28.38	
20°C	1.4686 ^a	3	e'				Parachor [P].	
25	1.4667 ^a	3	d _c g/ml				20°C	
30			v _c ml/g				30	
"C"	0.6663	4	t _c °C				40	
MR (Obs.)	162.876	4	P _c mm				Sugd. 1372.1	
MR (Calc.)	162.359	5	PV/RT				Exp. L. l. %/wt. u.	
(nD-d/2)			25°C				Dispersion	
Dielectric			30 mm		1.0000	5	Flash Point °C	
A 358	7.72494	5	BP		0.8891	5	Fire Point	
B 593 °C	3124.5	5	t _e		0.8470	5	M. Spec. Ultra V.	
C	142.	5	t _c				X-Ray Dif.	
A* 358	2.69299	5	ΔHc kcal/m				Infrared	
B* 583 °C	3038.3	5	ΔHf				Solubility in ⁺	
K			ΔFf				Acetone	
t _k to			Viscosity centistokes				Carbon tet.	
t _x °C			η				Benzene	
A' to			°C				Ether	
B' °C			B ^v to				n-Heptane	
C' °C			A ^v °C				Ethanol	
A'* to			(B ^v) to				Water	
B'* °C			(A ^v) °C				Water in	
Ac to			c _p liq. °K					
Bc t _c °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A° const. B°								
t _e °C	563.26	5						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromotetratriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{32}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{34}\text{H}_{67}\text{Br}$	Molecular Weight	557.808		
		Ref.			Ref.		
F. P. °C	73.3	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C	510.	3	BP	0.0766	5	h	
760 mm	410.	5	t_e	0.0351	5	f'	to
100	364.	5	30 mm	1.1685	5	g'	°K
30	328.	5	ΔH_m cal/g			h'	
10	268.	5	ΔH_v cal/g			m	to
1			25°C			n	°K
Pressure mm 25°C			30 mm	41.23	5	o	
t_e	1986.5	5	BP	32.78	5	m'	to
Density g/ml 20°C	0.9270 ^a	3	t_e	29.36	5	n'	°K
25	0.9235 ^a	3	t_e (d, e)	29.24	5	o'	
d ^t ₄ 30			$\Delta H_v/T_e$	19.39	5	Surface tension dynes/cm. 20°C	
a	0.9410	5	d 364 to	62.31	5	30	30.24
b	-0.03700	5	e 591 °C	0.0579	5	30	29.34
Ref. Index n _D 20°C	1.4688 ^a	3	d' to			40	28.46
25	1.4669 ^a	3	e' °C			Parachor [P] 20°C	
30			d c g/ml			30	
"C"	0.6681	4	v c ml/g			40	
MR (Obs.)	167.517	4	t c °C			Sugd.	1411.1
MR (Calc.) (nD-d/2)	166.977	5	P c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0000	5	Dispersion	
A 364 to	7.74588	5	30 mm	0.8882	5	Flash Point °C	
B 601 °C	3172.0	5	BP	0.8457	5	Fire Point	
C	142.	5	t_e			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 364 to	2.72295	5	t_c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 591 °C	3085.9	5	ΔH_c kcal/m				
K			ΔH_f				
t_x to °C			ΔF_f				
t_x to °C			Viscosity centistokes °C				
A' to °C			η				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A' * to °C			(B ^v) to °C				
B' * to °C			(A ^v) to °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t_e °C	571.17	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 35

NAME		1-Bromopentatriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{33}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{37}\text{H}_{71}\text{Br}$	Molecular Weight	571.834		
		Ref.			Ref.		
F. P. °C	78.5	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0771	5	h	
760 mm	517.	3	t _e	0.0351	5	f'	to
100	416.	5	t _e 30 mm	1.1775	5	g'	°K
30	370.	5	ΔH _m cal/g			h'	
10	334.	5	ΔH _v cal/g			m	to
1	273.	5	25°C			n	°K
Pressure mm 25°C			30 mm	40.66	5	o	
t _e	2001.0	5	BP	32.27	5	m'	to
Density g/ml 20°C	0.9251 ^a	3	t _e	28.80	5	n'	°K
d ^t 25	0.9215 ^a	3	t _e (d, e)	28.72	5	o'	
d ^t 30			ΔH _v /T _e	19.33	5	Surface tension dynes/cm. 20°C	
a	0.9395	5	d ^t 370	61.78	5	γ	30.29
b	-0.03720	5	e ^t 599	0.0571	5		29.36
Ref. Index			d ^t to °C				40
n _D 20°C	1.4690 ^a	3	e ^t to °C			Parachor [P]	
25	1.4671 ^a	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.6697	4	t _c °C			40	
MR (Obs.)	172.145	4	P _c mm			Sugd.	1450.1
MR (Calc.)	171.595	5	PV/RT			Exp. L. l. %/wt. u.	
(n _D -d/2)			25°C			Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 370	7.75885	5	BP	0.8871	5	Fire Point	
B 609 °C	3209.8	5	t _e	0.8439	5	M. Spec. Ultra V.	
C	141.	5	t _c			X-Ray Dif.	
A* 370	2.74566	5	ΔH _c kcal/m			Infrared	
B* 599 °C	3124.3	5	ΔH _f			Solubility in ⁺	
K			ΔF _f			Acetone	
c			Viscosity centistokes			Carbon tet.	
t _k to °C			η			Benzene	
t _x to °C						Ether	
A' to °C						n-Heptane	
B' to °C			B _v to °C			Ethanol	
C'			A _v to °C			Water	
A'* to °C			(B _v) to °C			Water in	
B'* to °C			(A _v) to °C				
Ac to °C			c _p liq. °K				
B _c t _c °C			c _p vap. °K				
C _c t _c °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	579.06	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromohexatriacontane			STRUCTURAL FORMULA		
Mole % Pur.		Ref. 3	Molecular Formula C ₃₆ H ₇₃ Br	Molecular Weight 585.860	CH ₂ Br(CH ₂) ₃₄ CH ₃		
F. P. °C	76.5	3	dt/dP °C/mm			f to	
F. P. 100%			25°C			g °K	
B. P. °C			BP	0.0776	5	h	
760 mm	524.	3	t _e	0.0351	5	f' to	
100	423.	5	t _e (d, e)			g' °K	
30	376.	5	ΔHm cal/g			h'	
10	340.	5	ΔHv cal/g			m to	
1	278.	5	25°C			n °K	
Pressure mm 25°C			30 mm	40.15	5	o	
t _e	2016.1	5	BP	31.81	5	m' to	
Density g/ml 20°C	0.9232 ^a	3	t _e	28.34	5	n' °K	
d ^t -25	0.9197 ^a	3	t _e	28.26	5	o'	
d ⁴ 30			ΔHv/T _e	19.30	5	Surface tension dynes/cm. 20°C	
a	0.9372	5	d 376 to	61.34	5	γ	30.32 5
b	-0.03700	5	e 607 °C	0.0564	5	30	29.41 5
Ref. Index			d' °C			40	28.52 5
n _D 20°C	1.4692 ^a	3	d _c g/ml			Parachor [P]	
25	1.4673 ^a	3	v _c ml/g			20°C	
30			t _c °C			30	
"C"	0.6714	4	P _c mm			40	
MR (Obs.)	176.795	4	PV/RT			Sugd.	1489.1 5
MR (Calc.) (nD-d/2)	176.213	5	25°C			Exp. L. l. %/wt.	
Dielectric			30 mm	1.0000	5	u.	
A 376 to	7.76401	5	BP	0.8861	5	Dispersion	
B 1617 °C	3237.6	5	t _e	0.8424	5	Flash Point °C	
C	139.	5	t _c			Fire Point	
A* 376 to	2.76017	5	ΔHc kcal/m			M Spec.	
B* 607 °C	3152.9	5	ΔHf			Ultra V.	
K			ΔFi			X-Ray Dif.	
c			Viscosity centistokes			Infrared	
t _k °C			η °C			Solubility in +	
t _x °C			B ^v to			Acetone	
A' to			A ^v °C			Carbon tet.	
B' °C			(B ^v) to			Benzene	
C' °C			(A ^v) °C			Ether	
A'* to			c _p liq. °K			n-Heptane	
B'* °C			c _p vap. °K			Ethanol	
Ac to			c _v vap.			Water	
Bc °C						Water in	
Cc °C							
Cryos. A* const. B*							
t _e °C	586.99	5					
^a For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 37

NAME		1-Bromoheptatriacontane		STRUCTURAL FORMULA		
				$\text{CH}_2\text{Br}(\text{CH}_2)_{35}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{37}\text{H}_{75}\text{Br}$	Molecular Weight 599.886			
	Ref.			Ref.	Ref.	
F. P. °C	81.4	3	dt/dP °C/mm		f to	
F. P. 100%			25°C		g °K	
B. P. °C			BP	0.0781	5	h
760 mm	531.	3	t_e	0.0351	5	f' to
100	429.	5	30 mm	1.1948	5	g' °K
30	382.	5	ΔH_m cal/g			h'
10	345.	5	ΔH_v cal/g			m to
1	283.	5	25°C			n °K
Pressure mm 25°C			30 mm	39.63	5	o
t_e	2031.2	5	BP	31.36	5	m' to
Density g/ml 20°C	0.9214 ^a	3	t_e (d, e)	27.87	5	n' °K
25	0.9179 ^a	3	$\Delta H_v/T_e$	27.81	5	o'
d_4^{30}				19.26	5	
a	0.9354	5	d 382	60.83	5	Surface tension dynes/cm. 20°C
b	-0.03700	5	e 615	0.0555	5	30
Ref. Index n_D			d'			40
20°C	1.4694 ^a	3	e'			30.35
25	1.4675 ^a	3				29.44
30			d_c g/ml			28.54
"C"	0.673	4	v_c ml/g			Parachor [P] 20°C
MR (Obs.)	181.448	4	t_c °C			30
MR (Calc.) (nD-d/2)	180.831	5	P_c mm			40
Dielectric			PV/RT 25°C			Sugd. 1528.1
A 382 to	7.77670	5	30 mm	1.0000	5	Exp. L. l. %/wt. u.
B 625 °C	3275.4	5	BP	0.8852	5	Dispersion
C	138.	5	t_e	0.8410	5	Flash Point °C
A* 382 to	2.78162	5	t_c			Fire Point
B* 615 °C	3191.2	5	ΔH_c kcal/m			M. Spec. Ultra V.
K			ΔH_f			X-Ray Dif.
t_k to			ΔF_f			Infrared
t_x °C			Viscosity centistokes			Solubility in ⁺
A' to			η °C			Acetone
B' °C			B^v to			Carbon tet.
C' °C			A^v °C			Benzene
A** to			(B ^v) to			Ether
B** °C			(A ^v) °C			n-Heptane
Acl to			c_p liq. °K			Ethanol
Bc °C			c_p vap. °K			Water
Cc °C			c_v vap.			Water in
Cryos. A°						
const. B°						
t_e °C	594.91	5				

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromooctatriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{Br}(\text{CH}_2)_{36}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{38}\text{H}_{77}\text{Br}$	Molecular Weight			
		Ref.			Ref.		
F. P. °C	79.4	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0785	5	h	
760 mm	537.	3	t_e	0.0351	5	f'	to
100	434.	5	30 mm	1.2024	5	g'	°K
30	387.	5	ΔH_m cal/g			h'	
10	350.	5				m	to
1	288.	5	ΔH_v cal/g			n	°K
Pressure mm 25°C			25°C			o	
t_e	2043.6	5	30 mm	39.09	5	m'	to
Density g/ml 20°C	0.9198 ^a	3	BP	30.88	5	n'	°K
d_4^{25}	0.9163 ^a	3	t_e	27.38	5	o'	
			t_e (d, e)	27.35	5	Surface tension dynes/cm. 20°C	
			$\Delta H_v/T_e$	19.22	5		30
a	0.9338	5	d 387 to	60.26	5		40
b	-0.03700	5	e 622 °C	0.0547	5	y	29.48
			d' to				28.58
			e' to				
Ref. Index n_D 20°C	1.4696 ^a	3	d_c g/ml			Parachor [P] 20°C	
25	1.4677 ^a	3	v_c ml/g				30
30			t_c °C				40
"C"	0.6744	4	P_c mm				Sugd. 1567.1
MR (Obs.)	186.081	4	PV/RT			Exp. L. l. %/wt. u.	
MR (Calc.) (nD-d/2)	185.449	5	25°C			Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 387 to	7.78637	5	BP	0.8843	5	Fire Point	
B 632 °C	3306.3	5	t_e	0.8396	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	137.	5	t_c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A* 387 to	2.80043	5	ΔH_c kcal/m				
B* 622 °C	3222.8	5	ΔH_f				
K			ΔF_f				
c			Viscosity centistokes				
t_k to			η °C				
t_x °C							
A' to			B ^v to				
B' °C			A ^v °C				
C'			(B ^v) to				
A' * to			(A ^v) °C				
B' * °C			c_p liq. °K				
Ac to			c_p vap. °K				
Bc t_c °C			c_v vap.				
Cc							
Cryos. A°							
const. B°							
t_e °C	601.69	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 39

NAME		1-Bromononatriacontane			STRUCTURAL FORMULA					
					$\text{CH}_2\text{Br}(\text{CH}_2)_{37}\text{CH}_3$					
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{39}\text{H}_{79}\text{Br}$	Molecular Weight	627.938					
		Ref.			Ref.					
F. P. °C	84.1	3	dt/dP °C/mm			f	to			
F. P. 100%			25°C			g	°K			
B. P. °C			BP		0.0789	5	h			
760 mm	543.	3	t _e		0.0351	5	f'	to		
100	440.	5	30 mm		1.2100	5	g'	°K		
30	392.	5	ΔHm cal/g				h'			
10	355.	5	ΔHv cal/g				m	to		
1	292.	5	25°C				n	°K		
Pressure mm 25°C			30 mm		38.56	5	o			
t _e	2056.0	5	BP		30.43	5	m'	to		
Density g/ml 20°C	0.9182 ^a	3	t _e		26.91	5	n'	°K		
d ₄ 25	0.9147 ^a	3	t _e (d, e)		26.90	5	o'			
d ₄ 30			ΔHv/T _e		19.17	5	Surface tension dynes/cm. 20°C		30.42	5
a	0.9322	5	d 392 °C		59.71	5	30		29.50	5
b	-0.03700	5	e 628 °C		0.0539	5	40		28.61	5
Ref. Index n _D 20°C	1.4697 ^a	3	d' °C				Parachor [P] 20°C			
25	1.4678 ^a	3	e' °C				30			
30			d _c g/ml				40			
"C"	0.6757	4	v _c ml/g				Sugd.		1606.1	5
MR (Obs.)	190.699	4	t _c °C				Exp. L. l. %/wt. u.			
MR (Calc.)	190.067	5	P _c mm				Dispersion			
Dielectric			PV/RT 25°C		1.0000	5	Flash Point °C			
A 392	7.79593	5	30 mm				Fire Point			
B 638 °C	3337.4	5	BP		0.8833	5	M. Spec. Ultra V.			
C	136.	5	t _e		0.8382	5	X-Ray Dif.			
A* 392	2.81893	5	t _c				Infrared			
B* 628 °C	3254.5	5	ΔHc kcal/m				Solubility in ⁺			
K			ΔHf				Acetone			
t _k to °C			ΔFf				Carbon tet.			
t _k to °C			Viscosity centistokes				Benzene			
A' to °C			η °C				Ether			
B' to °C			B _v to °C				n-Heptane			
C' to °C			A _v to °C				Ethanol			
A'* to °C			(B _v) to °C				Water			
B'* to °C			(A _v) °C				Water in			
Ac to °C			c _p liq. °K							
Bc to °C			c _p vap. °K							
Cc to °C			c _v vap.							
Cryos. A°										
const. B°										
t _e °C	608.47	5								

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Bromotetracontane			STRUCTURAL FORMULA		
Mole % Pur.		Ref. 3	Molecular Formula $C_{40}H_{81}Br$	Molecular Weight 641.964	$CH_2Br(CH_2)_{38}CH_3$		
		Ref.			Ref.		Ref.
F. P. °C	82.1	3	dt/dP °C/mm			f to	
F. P. 100%			25°C			g °K	
B. P. °C			BP	0.0794	5	h	
760 mm	549.	3	t _e	0.0351	5	f' to	
100	445.	5	t _e (d, e)			g' °K	
30	397.	5	ΔHm cal/g	1.2176	5	h'	
10	360.	5	ΔHv cal/g			m to	
1	297.	5	25°C			n °K	
Pressure mm 25°C			30 mm	38.06	5	o	
t _e	2068.4	5	BP	30.00	5	m' to	
Density g/ml 20°C			t _e	26.50	5	n' °K	
25	0.9166 ^a	3	t _e (d, e)	26.48	5	c'	
d ^t 25	0.9132 ^a	3	ΔHv/T _e	19.15	5	Surface tension dynes/cm. 20°C	
d ⁴ 30			d 397 to	59.17	5	30	30.44
a	0.9302	5	e 635 °C	0.0531	5	30	29.55
b	-0.03680	5	d' to			40	28.67
Ref. Index			e' °C			Parachor [P]	
n _D 20°C	1.4699 ^a	3	d _c g/ml			20°C	
25	1.4680 ^a	3	v _c ml/g			30	
30			v _c °C			40	
"C"	0.6772	4	P _c mm			Sugd.	1645.1
MR (Obs.)	195.371	4	PV/RT			Exp. L. l. %wt.	
MR (Calc.)	194.685	5	25°C	1.0000	5	u.	
(n _D -d/2)			30 mm	0.8824	5	Dispersion	
Dielectric			BP	0.8368	5	Flash Point °C	
A 397 to	7.80538	5	t _e			Fire Point	
B 645 °C	3368.4	5	t _c			M Spec.	
C	135.	5	ΔHc kcal/m			Ultra V.	
A* 397 to	2.83714	5	ΔHf			X-Ray Dif.	
B* 635 °C	3286.2	5	ΔFf			Infrared	
K			Viscosity centistokes			Solubility in +	
c			η °C			Acetone	
t _k to						Carbon tet.	
t _x °C						Benzene	
A' to						Ether	
B' °C						n-Heptane	
C'						Ethanol	
A'* to						Water	
B'* °C						Water in	
Ac to							
Bc t _c °C							
Cc							
Cryos. A°							
consts. B°							
t _e °C	615.24	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE II. BROMOALKANES

No. 41

NAME		2-Bromopropane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CHBrCH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_3\text{H}_7\text{Br}$	Molecular Weight 123.002				
		Ref.				Ref.	
F. P. °C	-89.0	3	dt/dP °C/mm				
F. P. 100%			25°C	0.1096	5	f	
B. P. °C			BP	0.0440	5	g	
760 mm	59.38	3	t_e	0.0391	5	h	
100	4.52	5	30 mm	0.5886	5	f'	
30	-19.15	5	ΔH_m cal/g			g'	
10	-36.90	5				h'	
1	-65.79	5	ΔH_v cal/g			m	
Pressure mm 25°C	236.3	5	25°C	54.17	5	n	
t_e	887.2	5	30 mm	59.02	5	o	
Density g/ml 20°C	1.3140	3	BP	50.52	5	m'	
25	1.3060	3	t_e	49.98	5	n'	
d_4^{25}			t_e (d, e)	49.95	5	o'	
			$\Delta H_v/T_e$	18.20	5		
a	1.3463	5	d -19 to	56.95	5	Surface tension dynes/cm. 20°C	
b	-0.00155	5	e 85 °C	0.1083	5	30	
Ref. Index n_D 20°C	1.4251	3	d'			40	
25	1.4221	3	e'			21.64	
30			d_c g/ml			20.56	
"C"	0.4299	4	v_c ml/g			19.51	
MR (Obs.)	23.941	4	t_c °C				
MR (Calc.) (nD-d/2)	23.819	5	P_c mm			Parachor [F] 20°C	
Dielectric			PV/RT 25°C	0.9786	5	30	
A -19 to	6.61405	5	30 mm	1.0000	5	40	
B 95 °C	1072.9	5	BP	0.9490	5	Sugd. 202.1	
C	228.	5	t_e	0.9440	5	Exp. L. l. %/wt. u.	
A* -19 to	1.15922	5	t_c			Dispersion	
B* 85 °C	1000.8	5	ΔH_c kcal/m			Flash Point °C	
K			ΔH_f			Fire Point	
t_k to			ΔF_f			M. Spec. Ultra V.	
t_x °C			Viscosity centistokes			X-Ray Dif.	
A' to			η °C			Infrared	
B' °C			B ^v to			Solubility in ⁺	
C' °C			A ^v °C			Acetone	
A* to			(B ^v) to			Carbon tet.	
B* °C			(A ^v) °C			Benzene	
Ac to			c_p liq. °K			Ether	
Bc t_c °C			c_p vap. °K			n-Heptane	
Cc °C			c_v vap.			Ethanol	
Cryos. A°						Water	
const. B°						Water in	
t_e °C	64.65	5					

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		2-Bromobutane			STRUCTURAL FORMULA		
					CH ₃ CHBrCH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₄ H ₉ Br	Molecular Weight	137.028		
F.P. °C	-111.9	Ref.	3	dt/dP °C/mm		f	to
F.P. 100%				25°C	0.3131	g	°K
B.P. °C				BP	0.0463	h	
760 mm	91.22	3		t _e	0.0382	f'	to
100	33.10	5		30 mm	0.6312	g'	°K
30	7.79	5		ΔHm cal/g		h'	
10	-11.29	5		ΔHv cal/g		m	to
1	-42.52	5		25°C	58.54	n	°K
Pressure mm 25°C	69.88	5		30 mm	60.43	o	
t _e	973.7	5		BP	51.52	m'	to
Density g/ml 20°C	1.2585	3		t _e	50.62	n'	°K
d ₄ ^t 25	1.2510	3		t _e (d, e)	50.57	o'	
d ₄ ^t 30				ΔHv/T _e	18.58		
a	1.2885	5		d 8 to	61.26	Surface tension dynes/cm. 20°C	
b	-0.00148	5		e 120 °C	0.1067	30	24.01
Ref. Index n _D 20°C	1.4367	3		d' to		40	22.87
25	1.4342	3		e' °C			21.75
30				d c g/ml		Parachor [P]	
"C"	0.4604	4		v c ml/g		20°C	
MR (Obs.)	28.509	4		t c °C		30	
MR (Calc.) (nD-d/2)	28.437	5		P c mm		40	
Dielectric				PV/RT		Sugd.	241.1
A 8 to	6.74689	5		25°C	0.9939	Exp. L.l. %/wt.	
B 130 °C	1210.9	5		30 mm	1.0000	u	
C	222.	5		BP	0.9456	Dispersion	
A* 8 to	1.30746	5		t _e	0.9374	Flash Point °C	
B* 120 °C	1134.5	5		t _c		Fire Point	
K				ΔHc kcal/m		M Spec.	
t _x to				ΔHf		Ultra V.	
t _x °C				ΔFf		X-Ray Dif.	
A' to				Viscosity centistokes		Infrared	
B' °C				η °C		Solubility in +	
C'				B ^v to		Acetone	
A'° to				A ^v °C		Carbon tet.	
B'° °C				(B ^v) to		Benzene	
				(A ^v) °C		Ether	
Ac to				c _p liq. °K		n-Heptane	
Bc t _c °C				c _p vap. °K		Ethanol	
Cc °C				c _v vap.		Water	
Cryos. A° const. B°						Water in	
t _e °C	100.19	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 43

NAME		1-Bromo-2-methylpropane				STRUCTURAL FORMULA				
						$\text{CH}_2\text{BrC}(\text{CH}_3)_2$				
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_4\text{H}_9\text{Br}$	Molecular Weight	137.028					
F. P. °C	-117.4	3	dt/dP			f		to		
F. P. 100%			°C/mm			g		°K		
B. P. °C			25°C	0.3166	5	h				
760 mm	91.53	3	BP	0.0463	5	f'		to		
100	33.38	5	t _e	0.0382	5	g'		°K		
30	8.05	5	30 mm	0.6317	5	h'				
10	-11.05	5	ΔHm cal/g			m		to		
1	-42.30	5	ΔHv cal/g			n		°K		
Pressure mm 25°C	69.02	5	25°C	58.63	5	o				
t _e	974.6	5	30 mm	60.50	5	m'		to		
Density g/ml 20°C	1.2645	3	BP	51.59	5	n'		°K		
d ₄ ^t 25	1.2571	3	t _e (d, e)	50.68	5	o'				
d ₄ 30			t _e	50.63	5	Surface tension dynes/cm. 20°C				
			ΔHv/T _e	18.59	5				24.47	5
a	1.2941	5	d 8 to	61.36	5	y			23.33	5
b	-0.00146	5	e 121 °C	0.1067	5				22.21	5
Ref. Index n _D 20°C	1.4350	3	d'			Parachor [P] 20°C				
25	1.4325	3	e'							
30			d g/ml							
"C"	0.4565	4	v _c ml/g							
MR (Obs.)	28.277	4	t _c °C							
MR (Calc.) (nD-d/2)	28.437	5	P _c mm						241.1	5
Dielectric			PV/RT 25°C	0.9941	5	Exp. L. l. %/wt. u.				
A 8 to	6.74887	5	30 mm	1.0000	5	Dispersion				
B 131 °C	1212.8	5	BP	0.9456	5	Flash Point °C				
C	222.	5	t _e	0.9374	5	Fire Point				
A* 8 to	1.30899	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared				
B* 121 °C	1136.2	5	Viscosity centistokes η °C			Solubility in ⁺				
K						Acetone				
t _k to °C						Carbon tet.				
t _x to °C						Benzene				
A' to °C						Ether				
B' to °C						n-Heptane				
C' to °C						Ethanol				
A'* to °C						Water				
B'* to °C						Water in				
A _c to °C										
B _c to °C										
C _c to °C										
Cryos. A° const. B°										
t _e °C	100.54	5								
† grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		2-Bromo-2-methylpropane			STRUCTURAL FORMULA		
					(CH ₃) ₃ CB _r		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₉ Br	Molecular Weight	137.028		
		Ref.			Ref.		
F. P. °C	-16.2	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.1702	5	g	°K
B. P. °C	73.25	3	BP	0.0450	5	h	
760 mm	16.98	5	t _e	0.0387	5	f'	to
100	-7.39	5	30 mm	0.6068	5	g'	°K
30	-25.71	5	ΔHm cal/g			h'	
10	-55.59	5	ΔHv cal/g			m	to
1			25°C	52.87	5	n	°K
Pressure mm 25°C	141.2	5	30 mm	56.25	5	o	
t _e	924.9	5	BP	48.00	5	m'	to
Density g/ml 20°C	1.2209	3	t _e	47.33	5	n'	°K
d ₄ ^t 25	1.2132	3	t _e (d, e)	47.29	5	o'	
d ₄ ^t 30			ΔHv/T _e	18.36	5	Surface tension dynes/cm. 20°C	
a	1.2518	5	d -7 to	55.50	5	γ	21.23
b	-0.00150	5	e 100 °C	0.1024	5		20.15
Ref. Index n _D 20°C	1.4278	3	d'				19.09
25	1.4252	3	e'			Parachor [P]	
30			d c g/ml			20°C	
"C"	0.4654	4	v _c ml/g			30	
MR (Obs.)	28.864	4	t _c °C			40	
MR (Calc.) (n _D -d/2)	28.437	5	P _c mm			Sugd.	241.1
Dielectric			PV/RT 25°C	0.9862	5	Exp. L. l. %/wt.	
A -7 to	6.66850	5	30 mm	1.0000	5	u.	
B 110 °C	1129.7	5	BP	0.9474	5	Dispersion	
C	225.	5	t _e	0.9410	5	Flash Point °C	
A* -7 to	1.24699	5	t _c			Fire Point	
B* 100 °C	1055.9	5	ΔHc kcal/m			M Spec.	
K			ΔHf			Ultra V.	
c			ΔFf			X-Ray Dif.	
t _k to			Viscosity centistokes			Infrared	
t _x °C			η °C			Solubility in +	
A' to			B ^v to			Acetone	
B' °C			A ^v °C			Carbon tet.	
C'			(B ^v) to			Benzene	
A'* to			(A ^v) °C			Ether	
B'* °C			c _p liq. °K			n-Heptane	
Ac to			c _p vap. °K			Ethanol	
Bc t _c °C			c _v vap.			Water	
Cc						Water in	
Cryos. A* const. B*							
t _e °C	80.12	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 45

NAME		2-Bromopentane			STRUCTURAL FORMULA		
					CH ₃ CHBr(CH ₂) ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₁₁ Br	Molecular Weight 151.054				
		Ref.		Ref.			Ref.
F. P. °C	-95.5	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°K	
B. P. °C			BP	0.8240	5		
760 mm	117.4	3	t _e	0.0482	5		
100	56.6	5	30 mm	0.0377	5	f'	to
30	30.0	5	ΔHm cal/g	0.6660	5	g'	°K
10	9.8	5				h'	
1	-23.3	5	ΔHv cal/g			m	to
Pressure mm 25°C	23.28	5	25°C	61.03	5	n	°K
t _e	1044.0	5	30 mm	60.49	5	o	
Density g/ml 20°C	1.2075	3	BP	51.40	5	m'	to
t _e	1.2012	3	t _e	50.23	5	n'	°K
d ₄ ^t 25			t _e (d, e)	50.15	5	o'	
d ₄ ^t 30			ΔHv/T _e	18.85	5		
a	1.2327	5	d _e 30 to	63.60	5	Surface tension dynes/cm. 20°C	
b	-0.00125	5	e _e 149 °C	0.1039	5	γ	25.12 5
Ref. Index n _D 20°C	1.4413	3	d'			30	24.08 5
25	1.4394	3	e'			40	23.07 5
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.4846	4	v _c ml/g			30	
MR (Obs.)	33.054	4	t _c °C			40	
MR (Calc.) (nD-d/2)	33.055	5	P _c mm			Sugd.	280.1 5
Dielectric			PV/RT 25°C	1.0013	5	Exp. L. l. %/wt. u.	
A 30 to	6.84548	5	30 mm	1.0000	5	Dispersion	
B 159 °C	1325.8	5	BP	0.9426	5	Flash Point °C	
C	217.	5	t _e	0.9320	5	Fire Point	
A* 30 to	1.42528	5	t _c			M. Spec. Ultra V.	
B* 149 °C	1246.1	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
t _k to			ΔFf			Solubility in †	
t _x °C			Viscosity centistokes			Acetone	
A' to			η °C			Carbon tet.	
B' °C						Benzene	
C'			B _v to			Ether	
A'* to			A _v °C			n-Heptane	
B'* °C			(B _v) to			Ethanol	
Ac to			(A _v) °C			Water	
Bc t _c °C			c _p liq. °K			Water in	
Cc t _c °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	129.45	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		3-Bromopentane			STRUCTURAL FORMULA		
					CH ₃ CH ₂ CHBrCH ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ Br	Molecular Weight	151.054		
		Ref.			Ref.	Ref.	
F. P. °C	-126.2	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	0.8642	5	g	
B. P. °C	118.6	3	BP	0.0483	5	h	
760 mm	57.7	5	t _e	0.0377	5	f'	to °K
100	31.0	5	30 mm	0.6668	5	g'	
30	10.8	5	ΔHm cal/g			h'	
10	-22.3	5	ΔHv cal/g			m	to °K
1			25°C	61.51	5	n	
Pressure mm 25°C	22.03	5	30 mm	60.84	5	o	
t _e	1047.0	5	BP	51.60	5	m'	to °K
Density g/ml 20°C	1.2124	3	t _e	50.41	5	n'	
d ₄ ^t 25	1.2062	3	t _e (d, e)	50.32	5	o'	
d ₄ ^t 30			ΔHv/T _e	18.85	5	Surface tension dynes/cm. 20°C	
a	1.2372	5	d 31 to	64.11	5	30	25.53
b	-0.00123	5	e 151 °C	0.1055	5	40	24.50
Ref. Index n _D 20°C	1.4441	3	d' to				23.49
25	1.4420	3	e' °C			Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.4855	4	v _c ml/g			30	
MR (Obs.)	33.102	4	t _c °C			40	
MR (Calc.) (nD-d/2)	33.055	5	P _c mm			Sugd.	280.1
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 31 to	6.84027	5	25°C	1.0015	5	Dispersion	
B 161 °C	1324.8	5	30 mm	1.0000	5	Flash Point °C	
C	216.	5	BP	0.9423	5	Fire Point	
A* 31 to	1.42009	5	t _e	0.9316	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 151 °C	1245.5	5	t _c			Solubility in +	
K			ΔHc kcal/m			Acetone	
c			ΔHf			Carbon tet.	
t _x to °C			ΔFf			Benzene	
t _x °C			Viscosity centistokes			Ether	
A' to °C			η °C			n-Heptane	
B' °C			B ^v to °C			Ethanol	
C'			A ^v °C			Water	
A' * to °C			(B ^v) to °C			Water in	
B' * °C			(A ^v) °C				
A _c to °C			c _p liq. °K				
B _c t _c °C			c _p vap. °K				
C _c			c _v vap.				
Cryos. A° const. B°							
t _e °C	130.79	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 47

NAME		1-Bromo-2-methylbutane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{BrCH}(\text{CH}_3)\text{CH}_2\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_5\text{H}_{11}\text{Br}$	Molecular Weight	151.054		
F. P. °C		Ref.				Ref.	
F. P. 100%							
B. P. °C							
760 mm	120.5	3		0.9303	5	f	
100	59.4	5		0.0484	5	g	
30	32.6	5		0.0376	5	h	
10	12.3	5		0.6697	5	f'	
1	-21.0	5				g'	
						h'	
Pressure mm 25°C	20.29	5		62.05	5	m	
t_e	1052.2	5		61.21	5	n	
				51.95	5	o	
Density g/ml 20°C	1.2205	3		50.73	5	m'	
d_4^{25}	1.2140	3		50.64	5	n'	
				18.87	5	o'	
a	1.2465	5		64.65	5	Surface tension dynes/cm. 20°C	
b	-0.00129	5		0.1054	5	30	26.22
						40	25.12
Ref. Index n_D 20°C	1.4452	3					24.04
25	1.4426	3					
30							
"C"	0.4834	4					
MR (Obs.)	32.953	4					
MR (Calc.) (nD-d/2)	33.055	5					
Dielectric							
A 33 to	6.85159	5					
B 163 °C	1336.2	5					
C	216.	5					
A* 33 to	1.42933	5					
B* 153 °C	1256.3	5					
K							
c							
t_k — to							
t_x — °C							
A' to							
B' — °C							
C'							
A'* to							
B'* °C							
Ac to							
Bc t_c —							
Cc							
Cryos. A°							
consts. B°							
t_e °C	132.91	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Bromo-3-methylbutane			STRUCTURAL FORMULA		
					CH ₂ BrCH ₂ CH(CH ₃) ₂		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ Br	Molecular Weight	151.054		
		Ref.			Ref.		
F. P. °C	-112.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.9267	5	g	*K
B. P. °C	120.4	3	BP	0.0484	5	h	
760 mm	59.3	5	t _e	0.0376	5	f'	to
100	32.5	5	30 mm	0.6695	5	g'	*K
30	12.3	5	ΔHm cal/g			h'	
10	-21.1	5	ΔHv cal/g			m	to
1			25°C	62.03	5	n	*K
Pressure mm 25°C	20.38	5	30 mm	61.19	5	o	
t _e	1051.9	5	BP	51.93	5	m'	to
Density g/ml 20°C	1.2071	3	t _e	50.71	5	n'	*K
d ^t 25	1.2006	3	t _e (d, e)	50.62	5	o'	
d ^t 30			ΔHv/T _e	18.87	5	Surface tension dynes/cm. 20°C	
a	1.2331	5	d 33 to	64.62	5	30	25.09
b	-0.00129	5	e 153 to	0.1054	5	40	24.02
Ref. Index			d'				22.98
n _D 20°C	1.4420	3	e'			Parachor [P]	
25	1.4400	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.4854	4	t _c °C			40	
MR (Obs.)	33.110	4	P _c mm			Sugd.	280.1
MR (Calc.) (n _D -d/2)	33.055	5	PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C	1.0018	5	Dispersion	
A 33 to	6.85100	5	30 mm	1.0000	5	Flash Point °C	
B 163 °C	1337.6	5	BP	0.9422	5	Fire Point	
C	216.	5	t _e	0.9313	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 33 to	1.42887	5	t _c			Solubility in +	
B* 153 °C	1255.8	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k to			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' to			B _v to			Ethanol	
B' °C			A _v °C			Water	
C'			(B _v) to			Water in	
A' * to			(A _v) °C				
B' * °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A* consts. B*							
t _e °C	132.80	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 49

NAME		2-Bromo-2-methylbutane			STRUCTURAL FORMULA		
					CH ₃ CB ₂ (CH ₃ (CH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₅ H ₁₁ Br	Molecular Weight	151.054		
F. P. °C		Ref.	dt/dP °C/mm		Ref.	f	to
F. P. 100%			25°C	0.5773	5	g	°K
B. P. °C			BP	0.0475	5	h	
760 mm	108.	3	t _e	0.0379	5	f'	to
100	48.	5	30 mm	0.6507	5	g'	°K
30	22.	5	ΔHm cal/g			h'	
10	2.	5	ΔHv cal/g			m	to
1	-30.	5	25°C	58.45	5	n	°K
Pressure mm 25°C	34.62	5	30 mm	58.76	5	o	
t _e	1018.2	5	BP	49.67	5	m'	to
Density g/ml 20°C	1.2160	3	t _e	48.59	5	n'	°K
d ^t 25	1.2095	3	t _e (d, e)	48.51	5	o'	
d ^t 30			ΔHv/T _e	18.72	5	Surface tension dynes/cm. 20°C	
a	1.2420	5	d 22 to	61.11	5	γ	25.83
b	-0.00129	5	e 139 °C	0.1060	5	30	24.73
Ref. Index			d' to			40	23.66
n _D 20°C	1.4420	3	e' °C			Parachor [P]	
25	1.4400	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.4819	4	t _c °C			40	
MR (Obs.)	32.868	4	P _c mm			Sugd.	280.1
MR (Calc.) (nD-d/2)	33.055	5	PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C	0.9992	5	u.	
A 22 to	6.77584	5	30 mm	1.0000	5	Dispersion	
B 149 °C	1262.0	5	BP	0.9432	5	Flash Point °C	
C	216.	5	t _e	0.9334	5	Fire Point	
A* 22 to	1.36739	5	t _c			M. Spec.	
B* 139 °C	1185.2	5	ΔHc kcal/m			Ultra V.	
K			ΔHf			X-Ray Dif.	
c			ΔFf			Infrared	
t _k to			Viscosity centistokes			Solubility in *	
t _x °C			η			Acetone	
A' to						Carbon tet.	
B' °C						Benzene	
C' °C						Ether	
A'* to			B ^v to			n-Heptane	
B'* °C			A ^v °C			Ethanol	
Ac to			(B ^v) to			Water	
Bc t _c °C			(A ^v) °C			Water in	
Cc °C			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	118.92	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Bromo-3-methylbutane		STRUCTURAL FORMULA	
				CH ₃ CHBrCH(CH ₃) ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₁ Br	Molecular Weight	151.054
		Ref.			Ref.
F. P. °C			dt/dP °C/mm		f to
F. P. 100%			25°C	0.7602	g °K
B. P. °C			BP	0.0480	h to
760 mm	115.3	3	t _e	0.0377	f' to
100	54.7	5	30 mm	0.6628	g' °K
30	28.2	5	ΔHm cal/g		h' to
10	8.2	5	ΔHv cal/g		m to
1	-24.8	5	25°C	60.43	n °K
Pressure mm 25°C	25.48	5	30 mm	60.08	o to
t _e	1038.2	5	BP	51.02	m' to
Density g/ml 20°C	1.2209	3	t _e	49.88	n' to
d ₄ ^t 25	1.2156	3	t _e (d, e)	49.79	o' °K
d ₄ ^t 30			ΔHv/T _e	18.82	
a	1.2421	5	d 28 to	63.01	Surface tension
b	-0.00105	5	e 147 °C	0.1040	dynes/cm. 20°C
Ref. Index			d' to		30 26.26 5
n _D 20°C	1.4454	3	e' °C		40 25.35 5
25	1.4434	3	d g/ml		40 24.45 5
30			v _c ml/g		Parachor [P]
"C"	0.4834	4	t _c °C		20°C
MR (Obs.)	32.955	4	P _c mm		30
MR (Calc.)	33.055	5	PV/RT		40
(nD-d/2)			25°C	1.0008	Sugd. 280.1 5
Dielectric			30 mm	1.0000	Exp. L. l. %/wt.
A 28 to	6.83288	5	BP	0.9427	u.
B 157 °C	1313.3	5	t _e	0.9323	Dispersion
C	217.	5	t _c		Flash Point °C
A* 28 to	1.41504	5	ΔHc kcal/m		Fire Point
B* 147 °C	1234.1	5	ΔHf		M Spec.
K			ΔFf		Ultra V.
t _x to			Viscosity		X-Ray Dif.
t _x °C			centistokes		Infrared
A' to			η °C		Solubility in +
B' °C			B ^v to		Acetone
C'			A ^v °C		Carbon tet.
A ^{1*} to			(B ^v) to		Benzene
B ^{1*} °C			(A ^v) °C		Ether
Ac to			c _p liq. °K		n-Heptane
Bc t _c °C			c _p vap. °K		Ethanol
Cc			c _v vap.		Water
Cryos. A' const. B'					Water in
t _e °C	127.10	5			

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 51

NAME		1-Bromo-2, 2-dimethylpropane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{BrC}(\text{CH}_3)_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_5\text{H}_{11}\text{Br}$	Molecular Weight 151.054				
		Ref.		Ref.			Ref.
F. P. °C			dt/dP °C/mm		f	to	
F. P. 100%			25°C	0.5346	g	°K	
B. P. °C			BP	0.0474	h		
760 mm	106.	3	t_e	0.0379	f'	to	
100	46.	5	30 mm	0.6507	g'	°K	
30	20.	5			h'		
10	1.	5	ΔH_m cal/g		m	to	
1	-32.	5			n	°K	
Pressure mm 25°C	37.96	5	ΔH_v cal/g		o		
t_e	1013.5	5	25°C	57.54	o		
Density g/ml 20°C	1.1997	3	30 mm	58.03	n'	to	
d ₄ 25	1.1934	3	BP	49.35	o'	°K	
d ₄ 30			t_e (d, e)	48.33	Surface tension dynes/cm. 20°C		
			$\Delta H_v/T_e$	48.27	γ	30	24.47
a	1.2249	5		18.73	γ	40	23.45
b	-0.00125	5	d 20 to	60.09	22.45		
Ref. Index			e 137 °C	0.1013	5		
n _D 20°C	1.4370	3	d'		5		
25	1.4350	3	e'		5		
30			d_c g/ml		Parachor [P]		
"C"	0.4832	4	v_c ml/g		20°C		
MR (Obs.)	32.987	4	t_c °C		30		
MR (Calc.)	33.055	5	P_c mm		40		
Dielectric					Sugd. 280.1		
A 20 to	6.80131	5	PV/RT		Exp. L. l. %/wt.		
B 147 °C	1274.2	5	25°C	0.9986	u.		
C	219.	5	30 mm	1.0000	Dispersion		
A*	1.39107	5	BP	0.9439	Flash Point °C		
B*	1195.9	5	t_e	0.9344	Fire Point		
K			t_c		M. Spec.		
t_k to			ΔH_c kcal/m		Ultra V.		
t_x °C			ΔH_f		X-Ray Dif.		
A' to			ΔF_f		Infrared		
B' °C			Viscosity centistokes		Solubility in ⁺		
C' °C			η °C		Acetone		
A'* to			B ^v to		Carbon tet.		
B'* °C			A ^v °C		Benzene		
Ac to			(B ^v) to		Ether		
Bc °C			(A ^v) °C		n-Heptane		
Cc °C			c_p liq. °K		Ethanol		
Cryos. A°			c_p vap. °K		Water		
const. B°			c_v vap.		Water in		
t_e °C	116.70	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Bromo-4-methylpentane		STRUCTURAL FORMULA	
				CH ₃ CHBrCH ₂ CH(CH ₃) ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₆ H ₁₃ Br	Molecular Weight	165.080
		Ref.			Ref.
F. P. °C	-94.2	3	dt/dP °C/mm		
F. P. 100%			25°C	1.415	5
B. P. °C			BP	0.0492	5
760 mm	131.	3	t _e	0.0374	5
100	69.	5	30 mm	0.6835	5
30	42.	5	ΔHm cal/g		
10	21.	5	ΔHv cal/g		
1	-13.	5	25°C	59.85	5
Pressure mm 25°C	12.68	5	30 mm	58.11	5
t _e	1079.9	5	BP	49.23	5
Density g/ml 20°C	1.1568	3	t _e	47.96	5
d ₄ ^t 25	1.1509	3	t _e (d, e)	47.87	5
d ₄ ^t 30			ΔHv/T _e	18.95	5
a	1.1804	5	d 42 to	62.24	5
b	-0.00118	5	e 165 °C	0.0993	5
Ref. Index n _D 20°C	1.4421	3	d' to		
25	1.4400	3	e' °C		
30			d g/ml		
"C"	0.5067	4	v _c ml/g		
MR (Obs.)	37.766	4	t _c °C		
MR (Calc.)	37.673	5	P _c mm		
(n _D -d/2)			PV/RT		
Dielectric			25°C	1.0035	5
A 42 to	6.88872	5	30 mm	1.0000	5
B 175 °C	1382.7	5	BP	0.9408	5
C	214.	5	t _e	0.9290	5
A* 42 to	1.49675	5	t _c		
B* 165 °C	1301.8	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to			Viscosity centistokes		
t _x °C			η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C'			(B ^v) to		
A'*	to		(A ^v) °C		
B'*	°C		c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc t _c °C					
Cryos. A ^o const. B ^o					
t _e °C	144.65	5			

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 53

NAME		2-Bromo-3,3-dimethylbutane 3-Bromo-2,2-dimethylbutane		STRUCTURAL FORMULA $\text{CH}_3\text{CHBrC}(\text{CH}_3)_3$	
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_6\text{H}_{13}\text{Br}$	Molecular Weight	165.080
		Ref.			Ref.
F.P. °C	25.	3	dt/dP °C/mm		
F.P. 100%			25°C	1.473	5
B.P. °C			BP	0.0493	5
760 mm	132.	3	t_e	0.0374	5
100	70.	5	30 mm	0.6850	5
30	42.	5	ΔH_m cal/g		
10	22.	5	ΔH_v cal/g		
1	-13.	5	25°C	60.12	5
Pressure mm 25°C	12.13	5	30 mm	58.29	5
t_e	1082.4	5	BP	49.42	5
Density g/ml 20°C	1.17 ^a	3	t_e	48.16	5
25	1.17	3	t_e (d, e)	48.06	5
d_4^{30}			$\Delta H_v/T_e$	18.98	5
a	1.1700	5	d 42 to	62.49	5
b	-0.055	5	e 166 °C	0.0990	5
Ref. Index			d' to		
n_D^{20}	1.45 ^a	3	e' °C		
25	1.45	3	d_c g/ml		
30			v_c ml/g		
"C"	0.5094	4	t_c °C		
MR (Obs.)	37.917	4	P_c mm		
MR (Calc.)	37.673	5	PV/RT		
(nD-d/2)			25°C	1.0037	5
Dielectric			30 mm	1.0000	5
A 42 to	6.89450	5	BP	0.9406	5
B 176 °C	1388.7	5	t_e	0.9287	5
C	214.	5	t_c		
A* 42 to	1.50171	5	ΔH_c kcal/m		
B* 166 °C	1307.6	5	ΔH_f		
K			ΔF_f		
t_k to			Viscosity		
t_x °C			centistokes		
A' to			η		
B' °C					
C' °C			B^v to		
A'* to			A^v °C		
B'* °C			(B ^v) to		
Ac to			(A ^v) °C		
Bc °C			c_p liq. °K		
Cc °C			c_p vap. °K		
Cryos. A°			c_v vap.		
const. B°					
t_g °C	145.77	5			
^a For undercooled liquid below normal F.P.		⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME	Dibromomethane			STRUCTURAL FORMULA	
	CH ₂ Br ₂				
Mole % Pur.	Ref. 3	Molecular Formula	CH ₂ Br	Molecular Weight	173.858
F. P. °C	-52.55	3	dt/dP °C/mm		
F. P. 100%			25°C	0.4358	5
B. P. °C			BP	0.0434	5
760 mm	96.95	3	t _e	0.0352	5
100	41.70	5	30 mm	0.6162	5
30	17.15	5	ΔHm cal/g		
10	-1.56	5	ΔHv cal/g		
1	-32.57	5	25°C	51.37	5
Pressure mm 25°C	45.26	5	30 mm	52.11	5
t _e	991.4	5	BP	44.88	5
Density g/ml 20°C	2.4970	3	t _e	44.12	5
d ^t 25	2.4842	3	t _e (d, e)	44.07	5
d ^t 30			ΔHv/T _e	20.23	5
a	2.5482	5	d 17 to	53.66	5
b	-0.00254	5	e 126 °C	0.0905	5
Ref. Index n _D 20°C	1.5420	3	d' to		
25	1.5389	3	e' °C		
30			d ^c g/ml		
"C"	0.2841	4	v ^c ml/g		
MR (Obs.)	21.913	4	t ^c °C		
MR (Calc.) (n _D -d/2)	22.348	5	P _c mm		
Dielectric			PV/RT		
A 17 to	7.0625	3	25°C	0.9974	5
B 136 °C	1327.8	3	30 mm	1.0000	5
C	220.58	3	BP	0.9478	5
A* 17 to	1.7177	5	t _e	0.9399	5
B* 126 °C	1250.0	5	t _e		
K			ΔHc kcal/m		
c			ΔHf		
t _k to			ΔFf		
t _x °C			Viscosity centistokes		
A' to			η °C		
B' °C			B ^v to		
C'			A ^v °C		
A'*			(B ^v) to		
B'*			(A ^v) °C		
Ac to			c _p liq. °K		
Bc t _c °C			c _p vap. °K		
Cc °C			c _v vap.		
Cryos. A°					
consts. B°					
t _e °C	105.96	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE III. BROMOALKANES

No. 55

NAME		1, 1-Dibromoethane			STRUCTURAL FORMULA	
					CHBr_2CH_3	
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_2\text{H}_4\text{Br}$	Molecular Weight 187.884			
	Ref.			Ref.		Ref.
F. P. °C	-63.	3	dt/dP		f	to
F. P. 100%			°C/mm		g	°K
B. P. °C			25°C	0.7150	5	
760 mm	108.0	3	BP	0.0431	5	
100	52.8	5	t_e	0.0341	5	
30	28.0	5	30 mm	0.6229	5	f'
10	9.0	5				g'
1	-22.5	5				h'
			ΔH_m cal/g			
Pressure			ΔH_v cal/g			m
mm 25°C	25.51	5	25°C	51.60	5	n
t_e	1021.6	5	30 mm	51.32	5	o
			BP	44.26	5	
Density			t_e	43.42	5	m'
g/ml 20°C	2.0555	3	t_e (d, e)	43.37	5	n'
t 25	2.0455	3				o'
d_4 30			$\Delta H_v/T_e$	20.86	5	
a	2.0955	5	d 28 to	53.79	5	Surface tension
b	-0.00199	5	e 138 °C	0.0883	5	dynes/cm. 20°C
			d' to			30
			e' °C			30
Ref. Index						40
n_D 20°C	1.5128	3	d_c g/ml			30.03
25	1.5101	3	v_c ml/g			28.87
30			t_c °C			27.74
"C"	0.3277	4	P_c mm			
MR (Obs.)	27.464	4				Parachor [P]
MR (Calc.)	26.966	5	PV/RT			20°C
(nD-d/2)			25°C	1.0009	5	30
			30 mm	1.0000	5	40
Dielectric			BP	0.9476	5	Sugd. 214.0
A 28 to	7.2054	3	t_e	0.9387	5	
B 148 °C	1412.	3				Exp. L. l. %/wt.
C 218.5		3	ΔH_c kcal/m			u.
			ΔH_f			Dispersion
A* 28 to	1.8837	5	ΔF_f			Flash Point °C
B* 138 °C	1333.	5				Fire Point
K			Viscosity			M. Spec.
c			centistokes			Ultra V.
t_k to			η			X-Ray Dif.
t_x °C						Infrared
A' to						Solubility in ⁺
B' °C			B ^v to			Acetone
			A ^v °C			Carbon tet.
			(B ^v) to			Benzene
			(A ^v) °C			Ether
A [*] to						n-Heptane
B [*] °C			c_p liq. °K			Ethanol
						Water
Ac to			c_p vap. °K			Water in
Bc °C						
Cc °C			c_v vap.			
Cryos. A [*]						
const. B [*]						
t_e °C	118.00	5				

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1, 1-Dibromopropane			STRUCTURAL FORMULA		
					CHBr ₂ CH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₆ Br ₂	Molecular Weight 201.910				
		Ref.			Ref.		
F.P. °C			dt/dP °C/mm		f		to
F.P. 100%			25°C	2.019	5		°K
B.P. °C			BP	0.0458	5	h	
760 mm	133.5	3	t _e	0.0344	5	f'	
100	74.9	5	30 mm	0.6615	5	g'	
30	48.6	5	ΔHm cal/g			h'	
10	28.4	5	ΔHv cal/g			m	
1	-5.1	5	25°C	53.49	5	n	
Pressure mm 25°C	8.14	5	30 mm	51.32	5	o	
t _e	1088.4	5	BP	43.96	5		
Density g/ml 20°C	1.982	3	t _e	42.94	5	m'	
d ^t 25	1.975	3	t _e (d, e)	42.84	5	n'	
d ₄ 30			ΔHv/T _e	20.66	5	o'	
a	2.0100	5	d 49 to	55.53	5	Surface tension dynes/cm. 20°C	
b	-0.00140	5	e 166 °C	0.0866	5	γ	38.04
Ref. Index n _D 20°C	1.5100	3	d'			30	36.97
25	1.5063	3	e'			40	35.92
30			d c g/ml			Parachor [P]	
"C"	0.3381	4	v c ml/g			20°C	
MR (Obs.)	30.468	4	t c °C			30	
MR (Calc.) (nD-d/2)	31.584	5	P c mm			40	
Dielectric			PV/RT			Sugd.	253.0
A 49 to	7.2141	3	25°C	1.0050	5	Exp. L. l. %/wt. u.	
B 176 °C	1504.	3	30 mm	1.0000	5	Dispersion	
C	213.6	3	BP	0.9429	5	Flash Point °C	
A* 49 to	1.9045	5	t _e	0.9323	5	Fire Point	
B* 166 °C	1422.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in +	
c			ΔHf			Acetone	
t _k			ΔFf			Carbon tet.	
t _x			Viscosity centistokes			Benzene	
A'			γ °C			Ether	
B'			B ^v			n-Heptane	
C'			A ^v			Ethanol	
A'* to			(B ^v)			Water	
B'* °C			(A ^v)			Water in	
Ac			c _p liq. °K				
Bc			c _p vap. °K				
Cc			c _v vap.				
Cryos. A° const. B°							
t _e °C	146.44	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 57

NAME		1, 1-Dibromobutane			STRUCTURAL FORMULA			
					CHBr ₂ (CH ₂) ₂ CH ₃			
Mole % Pur.	Ref. 3	Molecular Formula	C ₄ H ₈ Br ₂	Molecular Weight	215.936			
F. P. °C		Ref.	dt/dP °C/mm		Ref.	f	to	Ref.
F. P. 100%			25°C	6.036	5	g	°K	
B. P. °C			BP	0.0478	5	h		
760 mm	158.	3	t _e	0.0343	5	f'	to	
100	97.	5	30 mm	0.6953	5	g'	°K	
30	69.	5	ΔHm cal/g			h'		
10	48.	5				m	to	
1	12.	5	ΔHv cal/g			n	°K	
Pressure mm 25°C	2.45	5	25°C	55.70	5	o		
t _e	1152.5	5	30 mm	51.64	5	o'		
Density g/ml 20°C	1.791	3	BP	44.06	5	m'	to	
25	1.784	3	t _e	42.81	5	n'	°K	
d ₄ 30			t _e (d, e)	42.71	5	o'		
a	1.8190	5	ΔHv/T _e	20.69	5	Surface tension dynes/cm. 20°C		
b	-0.00140	5	d 69 to	57.52	5	γ	30	34.40
Ref. Index			e 194 °C	0.0852	5		40	33.34
n _D 20°C	1.4988	3	d'			Parachor [P]		
25	1.4965	3	e'				20°C	
30			d _c g/ml				30	
"C"	0.3665	4	v _c ml/g				40	
MR (Obs.)	35.389	4	t _c °C				Sugd.	292.0
MR (Calc.)	36.202	5	P _c mm			Exp. L. l. %/wt. u.		
Dielectric			PV/RT 25°C	1.0063	5	Dispersion		
A 69 to	7.265	3	30 mm	1.0000	5	Flash Point °C		
B 204 °C	1609.	3	BP	0.9401	5	Fire Point		
C	209.	3	t _e	0.9268	5	M. Spec. Ultra V.		
A* 69 to	1.967	5	t _c			X-Ray Dif.		
B* 194 °C	1525.	5	ΔHc kcal/m			Infrared		
K			ΔHf			Solubility in ⁺		
t _k to			ΔFf			Acetone		
t _x °C			Viscosity centistokes			Carbon tet.		
A' to			η °C			Benzene		
B' °C			B _v to			Ether		
C'			A _v °C			n-Heptane		
A'* to			(B _v) to			Ethanol		
B'* °C			(A _v) °C			Water		
Ac to			c _p liq. °K			Water in		
Bc t _c °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	173.79	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1, 1-Dibromopentane			STRUCTURAL FORMULA	
					CHBr ₂ (CH ₂) ₃ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₀ Br ₂	Molecular Weight	229.962	
		Ref.			Ref.	
F. P. °C			dt/dP °C/mm		f	to °K
F. P. 100%			25°C	17.04	5	
B. P. °C			BP	0.0497	5	
760 mm	180.	3	t _e	0.0343	5	
100	116.	5	30 mm	0.7258	5	
30	87.	5	ΔHm cal/g			
10	65.	5	ΔHv cal/g			
1	28.	5	25°C	57.30	5	
Pressure mm 25°C	0.79	5	30 mm	51.55	5	
t _e	1209.2	5	BP	43.79	5	
Density g/ml 20°C	1.660	3	t _e	42.40	5	
d ₄ ^t 25	1.654	3	t _e (d, e)	42.25	5	
d ₄ ^t 30			ΔHv/T _e	20.68	5	
a	1.6840	5	d 87 to	58.86	5	Surface tension dynes/cm. 20°C
b	-0.00120	5	e 218 °C	0.0837	5	30
Ref. Index n _D 20°C	1.501	3	d'			40
25	1.499	3	e'			32.59
30			d _c g/ml			31.66
"C"	0.3971	4	v _c ml/g			30.75
MR (Obs.)	40.814	4	t _c °C			331.0
MR (Calc.) (n _D -d/2)	40.820	5	P _c mm			
Dielectric			PV/RT			
A 87 to	7.307	3	25°C	1.0057	5	Exp. L. l. %/wt. u.
B 228 °C	1704.	3	30 mm	1.0000	5	Dispersion
C	205.	3	BP	0.9363	5	Flash Point °C
A* 87 to	2.022	5	t _e	0.9217	5	Fire Point
B* 218 °C	1618.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared
K			Viscosity centistokes			Solubility in +
c			η °C			Acetone
t _k						Carbon tet.
t _x						Benzene
A'						Ether
B'						n-Heptane
C'						Ethanol
A'* to						Water
B'* °C						Water in
Ac						
Bc						
Cc						
Cryos. A°						
const. B°						
t _e °C	198.36	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

TABLE III. BROMOALKANES

No. 59

NAME		1, 1-Dibromohexane			STRUCTURAL FORMULA		
					CHBr ₂ (CH ₂) ₄ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₆ H ₁₂ Br ₂	Molecular Weight	243.988		
F. P. °C		Ref.		dt/dP °C/mm		f	to
F. P. 100%				25°C	49.80	g	°K
B. P. °C				BP	0.0517	h	
760 mm	202.	3		t _e	0.0344	f'	to
100	135.	5		30 mm	0.7574	g'	°K
30	105.	5		ΔHm cal/g		h'	
10	82.	5				m	to
1	44.	5		ΔHv cal/g		n	°K
Pressure mm 25°C	0.25	5		25°C	58.75	o	
t _e	1265.5	5		30 mm	51.35	o'	
				BP	43.41	m'	to
Density g/ml 20°C	1.565	3		t _e	41.89	n'	°K
d _t 25	1.560	3		t _e (d, e)	41.68	o'	
d ₄ 30				ΔHv/T _e	20.60		
a	1.5850	5		d 105 to	60.00		Surface tension dynes/cm. 20°C
b	-0.00100	5		e 243 °C	0.0821		30
Ref. Index				d' to			40
n _D 20°C	1.495	3		e' °C			31.72
25	1.493	3					30.92
30				d _s g/ml			30.13
"C"	0.4164	4		v _c ml/g			
MR (Obs.)	45.465	4		t _c °C			Parachor [P]
MR (Calc.)	45.438	5		P _c mm			20°C
Dielectric				PV/RT			30
A 105 to	7.333	3		25°C	1.0032		40
B 253 °C	1794.	3		30 mm	1.0000		Sugd.
C	201.	3		BP	0.9324		370.0
A* 105 to	2.060	5		t _e	0.9167		
B* 243 °C	1706.	5		t _c			Exp. L. l. %/wt.
K				ΔHc kcal/m			u.
c				ΔHf			Dispersion
t _k to				ΔFf			Flash Point °C
t _x °C				Viscosity centistokes			Fire Point
A' to				η °C			M. Spec.
B' °C							Ultra V.
C'							X-Ray Dif.
A'* to							Infrared
B'* °C							Solubility in ⁺
Ac to				B ^v to			Acetone
Bc t _c °C				A ^v °C			Carbon tet.
Cc °C				(B ^v) to			Benzene
				(A ^v) °C			Ether
				c liq. °K			n-Heptane
				c _p vap. °K			Ethanol
				c _v vap.			Water
							Water in
t _e °C	223.04	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1-Dibromoheptane			STRUCTURAL FORMULA	
					CHBr ₂ (CH ₂) ₅ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₇ H ₁₄ Br ₂	Molecular Weight	258.014	
		Ref.			Ref.	
F. P. °C			dt/dP °C/mm		f	to °K
F. P. 100%			25°C	144.7	g	
B. P. °C			BP	0.0533	h	
760 mm	222.	3	t _e	0.0343	f'	to °K
100	153.	5	30 mm	0.7838	g'	
30	122.	5	ΔHm cal/g		h'	
10	98.	5	ΔHv cal/g		m	to °K
1	58.	5	25°C	60.23	n	
Pressure mm 25°C	0.08	5	30 mm	51.19	o	
t _e	1315.9	5	BP	43.10	m'	to °K
Density g/ml 20°C	1.491	3	t _e	41.42	n'	
d ₄ ^t 25	1.485	3	t _e (d, e)	41.20	o'	
d ₄ ^t 30			ΔHv/T _e	20.61	Surface tension dynes/cm. 20°C	
a	1.5150	5	d 122 to	61.10	γ	31.21 5
b	-0.00120	5	e 265 °C	0.0811	30	30.21 5
Ref. Index n _D 20°C	1.490	3	e' °C		40	29.24 5
25	1.498	3	d _v g/ml		Parachor [P]	
30			v _c ml/g		20°C	
"C"	0.4330	4	t _c °C		30	
MR (Obs.)	50.031	4	P _c mm		40	
MR (Calc.) (n _D -d/2)	50.056	5	PV/RT 25°C	1.0004	Sugd.	409.0 5
Dielectric			30 mm	1.0000	Exp. L. l. %/wt. u.	
A 122 to	7.373	3	BP	0.9295	Dispersion	
B 275 °C	1882.	3	t _e	0.9120	Flash Point °C	
C	197.	3	t _c		Fire Point	
A* 122 to	2.113	5	ΔHc kcal/m		M Spec. Ultra V. X-Ray Dif. Infrared	
B* 265 °C	1793.	5	ΔHf		Solubility in +	
K			ΔFf		Acetone	
t _k °C			Viscosity centistokes		Carbon tet.	
t _x °C			η °C		Benzene	
A' °C			B ^v to °C		Ether	
B' °C			A ^v to °C		n-Heptane	
C' °C			(B ^v) to °C		Ethanol	
A ^{1*} to °C			(A ^v) °C		Water	
B ^{1*} to °C			c _p liq. °K		Water in	
Ac to °C			c _p vap. °K			
Bc to °C			c _v vap.			
Cc to °C						
Cryos. A' consts. B'						
t _e °C	245.43	5				

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 61

NAME		1, 1-Dibromooctane			STRUCTURAL FORMULA	
					CHBr ₂ (CH ₂) ₆ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₈ H ₁₆ Br ₂	Molecular Weight 272.040			
		Ref.			Ref.	Ref.
F. P. °C			dt/dP °C/mm		f	to
F. P. 100%			25°C	437.3	g	°K
B. P. °C			BP	0.0550	h	
760 mm	242.	3	t _e	0.0343	f'	to
100	171.	5	t _e (d, e)	0.8109	g'	°K
30	139.	5	ΔHm cal/g		h'	
10	114.	5			m	to
1	73.	5	ΔHv cal/g		n	°K
Pressure mm 25°C	0.02	5	25°C	61.66	o	
t _e	1366.2	5	30 mm	50.98		
Density g/ml 20°C	1.432	3	BP	42.78	m'	to
d ^t 25	1.427	3	t _e	40.95	n'	°K
d ^t 30			t _e (d, e)	40.72	o'	
			ΔHv/T _e	20.59		
a	1.4520	5	d 139 to	62.03	Surface tension dynes/cm. 20°C	
b	-0.00100	5	e 288 °C	0.0796	γ	30.93
Ref. Index			d'			30
n _D 20°C	1.488	3	e'			40
25	1.486	3	d _c g/ml		Parachor [P]	
30			v _c ml/g			20°C
"C"	0.4491	4	t _c °C			30
MR (Obs.)	54.733	4	P _c mm			40
MR (Calc.)	54.674	5	PV/RT		Sugd.	448.0
(n _D -d/2)			25°C	0.9963	Exp. L. l. %/wt.	
Dielectric			30 mm	1.0000	u.	
A 139 to	7.403	3	BP	0.9272	Dispersion	
B 298 °C	1967.	3	t _e	0.9075	Flash Point °C	
C	193.	3	t _e		Fire Point	
A* 139 to	2.156	5	ΔHc kcal/m		M. Spec.	
B* 288 °C	1877.	5	ΔHf		Ultra V.	
K			ΔFf		X-Ray Dif.	
c			Viscosity centistokes		Infrared	
t _k to			η °C		Solubility in ⁺	
t _x °C					Acetone	
A' to			B ^v to		Carbon tet.	
B' °C			A ^v °C		Benzene	
C' °C			(B ^v) to		Ether	
A'* to			(A ^v) °C		n-Heptane	
B'* °C			c _p liq. °K		Ethanol	
Ac to			c _p vap. °K		Water	
Bc t _c °C			c _v vap.		Water in	
Cc °C						
Cryos. A°						
const. B°						
t _e °C	267.93	5				
* grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

NAME		1, 1-Dibromononane			STRUCTURAL FORMULA		
					CHBr ₂ (CH ₂) ₇ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₉ H ₁₈ Br ₂	Molecular Weight	286.066		
		Ref.			Ref.		
F.P. °C			dt/dP °C/mm		f	to	
F.P. 100%			25°C	1223.	g	°K	
B.P. °C			BP	0.0565	h		
760 mm	260.	3	t _e	0.0344	f'	to	
100	187.	5	30 mm	0.8359	g'	°K	
30	154.	5	ΔHm cal/g		h'		
10	128.	5	ΔHv cal/g		m	to	
1	86.	5	25°C	62.59	n	°K	
Pressure mm 25°C	0.01	5	30 mm	50.52	o		
t _e	1410.7	5	BP	42.31	m'	to	
Density g/ml 20°C	1.382	3	t _e (d, e)	40.32	n'	°K	
d _t 25	1.377	3	ΔHv/T _e	20.54	o'		
d ₄ 30			d 154 to	62.45	Surface tension dynes/cm. 20°C		
a	1.4020	5	e 308 °C	0.0775	30 30.64		
b	-0.00100	5	e' to °C		40 29.76		
Ref. Index n _D 20°C	1.486	3	d _c g/ml		40 28.90		
25	1.484	3	v _c ml/g		Parachor [P]		
30			t _c °C		20°C		
"C"	0.4635	4	P _c mm		30		
MR (Obs.)	59.429	4	PV/RT		40		
MR (Calc.) (nD-d/2)	59.292	5	25°C	0.9931	Sugd. 487.0		
Dielectric			30 mm	1.0000	Exp. L.l. %/wt. u.		
A 154 to	7.434	3	BP	0.9255	Dispersion		
B 318 °C	2049.	3	t _e	0.9032	Flash Point °C		
C	190.	3	t _c		Fire Point		
A* 154 to	2.200	5	ΔHc kcal/m		M Spec. Ultra V.		
B* 308 °C	1958.	5	ΔHf		X-Ray Dif. Infrared		
K			ΔFf		Solubility in +		
t _c			Viscosity centistokes		Acetone		
t _x to °C			η °C		Carbon tet.		
A' to			B ^v to °C		Benzene		
B' to			A ^v to °C		Ether		
C' to			(B ^v) to °C		n-Heptane		
A'* to °C			(A ^v) to °C		Ethanol		
B'* to °C			c _p liq. °K		Water		
Ac to			c _p vap. °K		Water in		
Bc to			c _v vap.				
Cc to °C							
Cryos. A° const. B°							
t _e °C	288.23	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 63

NAME		1, 1-Dibromodecane			STRUCTURAL FORMULA		
					CHBr ₂ (CH ₂) ₈ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₀ H ₂₀ Br ₂	Molecular Weight	300.092		
		Ref.			Ref.		
F.P. °C			dt/dP °C/mm		f	to	
F.P. 100%			25°C	3666.	g	°K	
B.P. °C			BP	0.0576	h		
760 mm	277.	3	t _e	0.0342	f'	to	
100	202.	5	t _e (d, e)	0.8559	g'	°K	
30	169.	5	ΔHm cal/g		h'		
10	142.	5	ΔHv cal/g		m	to	
1	99.	5	25°C	64.02	n	°K	
Pressure mm 25°C			30 mm	50.32	o		
t _e	1452.5	5	BP	41.97	m'	to	
Density g/ml 20°C	1.338	3	t _e	39.91	n'	°K	
d _t 25	1.334	3	t _e (d, e)	39.65	o'		
d ₄ 30			ΔHv/T _e	20.64			
a	1.3540	5	d 169 to	63.31			
b	-0.03800	5	e 327 °C	0.0770			
Ref. Index			d'				
n _D 20°C	1.484	3	e'				
25	1.482	3	d _c g/ml				
30			v _c ml/g				
"C"	0.4769	4	t _c °C				
MR (Obs.)	64.167	4	P _c mm				
MR (Calc.)	63.910	5	PV/RT				
(n _D -d/2)			25°C	0.9886			
Dielectric			30 mm	1.0000			
A 169 to	7.475	3	BP	0.9224			
B 337 °C	2127.	3	t _e	0.8996			
C	186.	3	t _c				
A* 169 to	2.254	5	ΔHc kcal/m				
B* 327 °C	2035.	5	ΔHf				
K			ΔFf				
t _k to			Viscosity				
t _x °C			centistokes				
A' to			η				
B' °C							
C' °C			B ^v to				
A'* to			A ^v °C				
B'* °C			(B ^v) to				
Ac to			(A ^v) °C				
Bc t _c °C			c _p liq. °K				
Cc t _c °C			c _p vap. °K				
Cryos. A* const. B*			c _v vap.				
t _e °C	307.17	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 2-Dibromoethane			STRUCTURAL FORMULA	
					CH ₂ BrCH ₂ Br	
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₄ Br ₂	Molecular Weight	187.884	
		Ref.			Ref.	Ref.
F. P. °C	9.79	3	dt/dP °C/mm			f to °K
F. P. 100%			25°C	2.063	5	g to °K
B. P. °C			BP	0.0441	5	h to °K
760 mm	131.36	3	t _e	0.0332	5	f' to °K
100	74.51	5	30 mm	0.6477	5	g' to °K
30	48.83	5	ΔHm cal/g			h' to °K
10	29.09	5	ΔHv cal/g			m to °K
1	-3.98	5	25°C	58.82	5	n to °K
Pressure mm 25°C	7.79	5	30 mm	56.42	5	o to °K
t _e	1083.9	5	BP	48.60	5	m' to °K
Density g/ml 20°C	2.1792	3	t _e	47.52	5	n' to °K
d ^t 25°	2.1688	3	t _e (d, e)	47.43	5	o' to °K
d ₄ 30			ΔHv/T _e	21.42	5	
a	2.2208	5	d 49 to °C	61.05	5	Surface tension dynes/cm. 20°C
b	-0.00208	5	e 164 to °C	0.0948	5	30 37.95 5
Ref. Index n _D 20°C	1.5387	3	e' to °C			40 36.52 5
25	1.5360	3	d _c g/ml			40 35.13 5
30			v _c ml/g			Parachor [P] 20°C
"C"	0.3237	4	t _c °C			30
MR (Obs.)	26.997	4	P _c mm			40
MR (Calc.) (n _D -d/2)	26.966	5	PV/RT			Sugd. 214.0 5
Dielectric			25°C	1.0053	5	Exp. L. l. %/wt. u.
A 49 to °C	7.35127	5	30 mm	1.0000	5	Dispersion
B 174 °C	1543.9	5	BP	0.9451	5	Flash Point °C
C	214.	5	t _e	0.9346	5	Fire Point
A* 49 to °C	2.01036	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared
B* 164 °C	1461.9	5	ΔHc kcal/m			Solubility in +
K			ΔHf			Acetone
c			ΔFf			Carbon tet.
t _x to °C			Viscosity centistokes °C			Benzene
t _x to °C			η			Ether
A' to °C			B ^v to °C			n-Heptane
B' to °C			A ^v to °C			Ethanol
C'			(B ^v) to °C			Water
A'* to °C			(A ^v) to °C			Water in
B'* to °C			c _p liq. °K			
Ac to °C			c _p vap. °K			
Bc to °C			c _v vap.			
Cc to °C						
Cryos. A° const. B°						
t _e °C	143.70	5				

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 65

NAME		1, 2-Dibromopropane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{BrCHBrCH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_3\text{H}_6\text{Br}_2$	Molecular Weight	201.910		
		Ref.			Ref.		
F. P. °C	-55.25	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	3.005	5	g	°K
B. P. °C			BP	0.0450	5	h	
760 mm	140.0	3	t_e	0.0333	5	f'	to
100	82.0	5	30 mm	0.6604	5	g'	°K
30	55.9	5	ΔH_m cal/g			h'	
10	35.7	5	ΔH_v cal/g			m	to
1	2.0	5	25°C	56.75	5	n	°K
Pressure mm 25°C	5.16	5	30 mm	53.76	5	o	
t_e	1106.2	5	BP	46.16	5	m'	to
Density g/ml 20°C	1.9324	3	t_e	45.04	5	n'	°K
25	1.9241	3	t_e (d, e)	44.95	5	o'	
d ⁴ ₄ 30			$\Delta H_v/T_e$	21.32	5	Surface tension dynes/cm. 20°C	
a	1.9656	5	d 56 to	58.81	5	30	34.37
b	-0.00166	5	e 173 °C	0.0904	5	40	33.20
Ref. Index			d' °C			40	32.06
n _D 20°C	1.5201	3	e' °C			Parachor [P] 20°C	
25	1.5188	3	d _c g/ml			30	
30			v _c ml/g			40	
"C"	0.3533	4	t _c °C			Sugd.	253.0
MR (Obs.)	31.770	4	P _c mm			Exp. L. l. %/wt.	
MR (Calc.) (nD-d/2)	31.584	5	PV/RT 25°C	1.0061	5	u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 56 to	7.34875	5	BP	0.9435	5	Flash Point °C	
B 183 °C	1572.7	5	t_e	0.9322	5	Fire Point	
C	212.	5	t_c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 56 to	2.03363	5	ΔH_c kcal/m			Solubility in ⁺	
B* 173 °C	1490.2	5	ΔH_f			Acetone	
K			ΔF_f			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to °C			η			Ether	
t _x to °C						n-Heptane	
A' to °C						Ethanol	
B' to °C			B ^v to °C			Water	
C' to °C			A ^v to °C			Water in	
A'* to °C			(B ^v) to °C				
B'* to °C			(A ^v) °C				
Ac _l to °C			c _p liq. °K				
Bc _l to °C			c _p vap. °K				
Cc _l to °C			c _v vap.				
Cryos. A* consts. B*							
t _e °C	153.33	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 3-Dibromopropane		STRUCTURAL FORMULA	
				CH ₂ BrCH ₂ CH ₂ Br	
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₆ Br ₂	Molecular Weight	201.910
		Ref.			Ref.
F.P. °C	-34.2	3	dt/dP °C/mm		
F.P. 100%			25°C	10.23	5
B.P. °C			BP	0.0478	5
760 mm	167.3	3	t _e	0.0336	5
100	105.8	5	30 mm	0.7015	5
30	78.0	5	ΔHm cal/g		
10	56.6	5	ΔHv cal/g		
1	20.8	5	25°C	63.14	5
Pressure mm 25°C	1.36	5	30 mm	57.65	5
t _e	1176.9	5	BP	49.22	5
Density g/ml 20°C	1.9822	3	t _e	47.80	5
d ₄ ^t 25	1.9737	3	t _e (d, e)	47.66	5
d ₄ ^t 30			ΔHv/T _e	21.12	5
a	2.0162	5	d 78 to	65.00	5
b	-0.00170	5	e 204 °C	0.0943	5
Ref. Index n _D 20°C	1.5232	3	d'		
25	1.5208	3	e'		
30			d _c g/ml		
"C"	0.3463	4	v _c ml/g		
MR (Obs.)	31.127	4	t _c °C		
MR (Calc.) (n _D -d/2)	31.584	5	P _c mm		
Dielectric			PV/RT		
A 78 to	7.35783	5	25°C	1.0066	5
B 214 °C	1675.8	5	30 mm	1.0000	5
C	207.	5	BP	0.9393	5
A* 78 to	2.02415	5	t _e	0.9255	5
B* 204 °C	1590.7	5	t _c		
K			ΔHc kcal/m		
c			ΔHf		
t _k			ΔFf		
t _x			Viscosity centistokes		
A'			γ °C		
B'			B ^v		
C'			A ^v		
A ^{1*} to			(B ^v)		
B ^{1*} °C			(A ^v)		
A _c			c _p liq. °K		
B _c			c _p vap. °K		
C _c			c _v vap.		
Cryos. A ¹ const. B ¹					
t _e °C	183.88	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE III. BROMOALKANES

No. 67

NAME		1, 2-Dibromobutane		STRUCTURAL FORMULA	
				CH ₂ BrCHBrCH ₂ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₈ Br ₂	Molecular Weight 215.936		
		Ref.		Ref.	
F.P. °C	-65.4	3	dt/dP °C/mm		f to
F.P. 100%			25°C		g °K
B.P. °C			BP	9.779	5
760 mm	166.3	3	t _e	0.0477	5
100	104.9	5	30 mm	0.0336	5
30	77.2	5	ΔHm cal/g	0.6998	5
10	55.8	5			
1	20.1	5			
Pressure mm 25°C	1.43	5	ΔHv cal/g	58.84	5
t _e	1174.4	5	25°C	53.78	5
			30 mm	45.91	5
Density g/ml 20°C	1.7915	3	BP	44.57	5
d ₄ ²⁵	1.7870	3	t _e	44.45	5
d ₄ ³⁰			t _e (d, e)	44.45	5
			ΔHv/T _e	21.11	5
a	1.8095	5	d 77 to	60.60	5
b	-0.03899	5	e 203 °C	0.0884	5
Ref. Index			d' to		
n _D 20°C	1.5150	3	e' °C		
25	1.5125	3			
30			d _c g/ml		
"C"	0.3775	4	v _c ml/g		
MR (Obs.)	36.347	4	t _c °C		
MR (Calc.) (nD-d/2)	36.202	5	P _c mm		
Dielectric			PV/RT		
A 77 to	7.35524	5	25°C	1.0065	5
B 213 °C	1670.3	5	30 mm	1.0000	5
C	207.	5	BP	0.9395	5
A* 77 to	2.05136	5	t _e	0.9258	5
B* 203 °C	1585.4	5	t _c		
K			ΔHc kcal/m		
c			ΔHf		
t _k to			ΔFf		
t _x °C			Viscosity centistokes		
A' to			η °C		
B' °C					
C' °C			B ^v to		
A'* to			A ^v °C		
B'* °C			(B ^v) to		
Ac to			(A ^v) °C		
Bc t _c °C			c _p liq. °K		
Cc t _c °C			c _p vap. °K		
Cryos. A° const. B°			c _v vap.		
t _e °C	182.76	5			
† grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		1, 4-Dibromobutane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₂ CH ₂ Br		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₈ Br ₂	Molecular Weight	215.936		
		Ref.			Ref.		
F.P. °C	-16.53	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C	41.55	5	g	to °K
B.P. °C			BP	0.0508	5	h	
760 mm	197.	3	t _e	0.0340	5	f'	to °K
100	132.	5	30 mm	0.7465	5	g'	to °K
30	102.	5	ΔHm cal/g			h'	
10	79.	5	ΔHv cal/g			m	to °K
1	41.	5	25°C	65.78	5	n	to °K
Pressure mm 25°C	0.30	5	30 mm	57.82	5	o	
t _e	1253.1	5	BP	49.09	5		
Density g/ml 20°C	1.789	3	t _e	47.40	5	m'	to °K
d ₄ ²⁵	1.781	3	t _e (d, e)	47.22	5	n'	to °K
d ₄ ³⁰			ΔHv/T _e	20.87	5	o'	
a	1.8210	5	d 102 to	67.19	5	Surface tension dynes/cm. 20°C	
b	-0.00160	5	e 237 °C	0.0919	5	30	34.25
Ref. Index n _D 20°C	1.5190	3	d'			40	33.04
25	1.5170	3	e'				31.86
30			d _c g/ml			Parachor [P]	
"C"	0.3808	4	v _c ml/g			20°C	
MR (Obs.)	36.635	4	t _c °C			30	
MR (Calc.) (n _D -d/2)	36.202	5	P _c mm			40	
Dielectric			PV/RT			Sugd.	292.0
A 102 to	7.37174	5	25°C	1.0042	5	Exp. L. l. %/wt. u.	
B 247 °C	1791.9	5	30 mm	1.0000	5	Dispersion	
C	202.	5	BP	0.9348	5	Flash Point °C	
A* 102 to	2.04821	5	t _e	0.9184	5	Fire Point	
B* 237 °C	1704.1	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in +	
c			ΔHf			Acetone	
t _x			ΔFf			Carbon tet.	
t _x			Viscosity centistokes °C			Benzene	
A'						Ether	
B'			B ^v			n-Heptane	
C'			A ^v			Ethanol	
A'* to °C			(B ^v)			Water	
B'* to °C			(A ^v)			Water in	
Ac to °C			c _p liq. °K				
Bc t _c °C			c _p vap. °K				
Cc			c _v vap.				
Cryos. A° const. B°							
t _e °C	217.28	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 69

NAME		1, 4-Dibromopentane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₂ CHBrCH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₅ H ₁₀ Br ₂	Molecular Weight	229.962		
F. P. °C	-34.42	Ref.	3	dt/dP °C/mm		f	to
F. P. 100%				25°C	48.33	g	°K
B. P. °C				BP	0.0511	h	
760 mm	200.		3	t _e	0.0340	f'	to
100	134.		5	t _e (d, e)	0.7507	g'	°K
30	104.		5	ΔHm cal/g		h'	
10	82.		5			m	to
1	43.		5	ΔHv cal/g		n	°K
Pressure mm 25°C	0.26		5	25°C	62.54	o	
t _e	1260.6		5	30 mm	54.70		
Density g/ml 20°C	1.6861		3	BP	46.36	m'	to
d ₄ ^t 25	1.6791		3	t _e	44.72	n'	°K
d ₄ ^t 30				t _e	44.55	o'	
				ΔHv/T _e	20.82		
a	1.7141		5	d 104 to	63.81	Surface tension dynes/cm. 20°C	
b	-0.00140		5	e 241 to	0.0873	γ	34.69
Ref. Index n _D 20°C	1.5078		3	e' to		30	33.55
25	1.5054		3	e' to		40	32.44
30				d _c g/ml		Parachor [P] 20°C	
"C"	0.3959		4	v _c ml/g		30	
MR (Obs.)	40.642		4	t _c °C		40	
MR (Calc.) (n _D -d/2)	40.820		5	P _c mm		Sugd.	331.0
Dielectric				PV/RT 25°C	1.0038	Exp. L. l. %/wt. u.	
A 104 to	7.36729		5	30 mm	1.0000	Dispersion	
B 251 °C	1799.1		5	BP	0.9343	Flash Point °C	
C	201.		5	t _e	0.9175	Fire Point	
A* 104 to	2.06980		5	t _c		M. Spec. Ultra V. X-Ray Dif. Infrared	
B* 241 °C	1711.4		5	ΔHc kcal/m		Solubility in +	
K				ΔHf		Acetone	
c				ΔFf		Carbon tet.	
t _k to				Viscosity centistokes		Benzene	
t _x to				η °C		Ether	
A' to				B ^v to		n-Heptane	
B' to				A ^v to		Ethanol	
C' to				(B ^v) to		Water	
A'* to				(A ^v) to		Water in	
B'* to				c _p liq. °K			
Ac to				c _p vap. °K			
Bc t _c to				c _v vap.			
Cc t _c to							
Cryos. A° const. B°							
t _e °C	220.65		5				
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 5-Dibromopentane			STRUCTURAL FORMULA		
					CH ₂ Br(CH ₂) ₃ CH ₂ Br		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₀ Br ₂	Molecular Weight	229.962		
		Ref.			Ref.		
F. P. °C	-40.0	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	147.2	5	g	
B. P. °C			BP	0.0533	5	h	
760 mm	222.3	3	t _e	0.0343	5	f'	to °K
100	153.6	5	30 mm	0.7843	5	g'	
30	122.5	5	ΔHm cal/g			h'	
10	98.6	5	ΔHv cal/g			m	to °K
1	58.5	5	25°C	67.64	5	n	
Pressure mm 25°C	0.08	5	30 mm	57.48	5	o	
t _e	1316.9	5	BP	48.51	5	m'	to °K
Density g/ml 20°C	1.7018	3	t _e	46.61	5	n'	
d ₄ ²⁵	1.6948	3	t _e (d, e)	46.39	5	o'	
d ₄ ³⁰			ΔHv/T _e	20.65	5	Surface tension dynes/cm. 20°C	
a	1.7298	5	d 123 to °C	68.49	5	30	36.00
b	-0.00140	5	e 266 to °C	0.0899	5	40	34.83
Ref. Index n _D 20°C	1.5126	3	d'			40	33.69
25	1.5112	3	e'			Parachor [P]	
30			d v c g/ml			20°C	
"C"	0.3957	4	v c ml/g			30	
MR (Obs.)	40.588	4	t _c °C			40	
MR (Calc.) (n _D -d/2)	40.820	5	P _c mm			Sugd.	331.0
Dielectric			PV/RT 25°C	1.0003	5	Exp. L. l. %/wt. u.	
A 123 to °C	7.37410	5	30 mm	1.0000	5	Dispersion	
B 276 °C	1884.0	5	BP	0.9307	5	Flash Point °C	
C	197.	5	t _e	0.9120	5	Fire Point	
A* 123 to °C	2.06404	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 266 °C	1794.7	5	ΔHc kcal/m			Solubility in +	
K			ΔHf			Acetone	
c			ΔFf			Carbon tet.	
t _x to °C			Viscosity centistokes °C			Benzene	
t _x to °C			B ^v to °C			Ether	
A' to °C			A ^v to °C			n-Heptane	
B' to °C			(B ^v) to °C			Ethanol	
C' to °C			(A ^v) to °C			Water	
A'* to °C			c _p liq. °K			Water in	
B'* to °C			c _p vap. °K				
Ac to °C			c _v vap.				
Bc to °C							
Cc to °C							
Cryos. A° const. B°							
t _e °C	245.83	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE III. BROMOALKANES

No. 71

NAME		1, 2-Dibromo-2-methylbutane			STRUCTURAL FORMULA	
					CH ₂ BrCBr(CH ₃)CH ₂ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula	C ₅ H ₁₀ Br ₂	Molecular Weight	229.962	
F. P. °C	-70.2	Ref.	3	dt/dP °C/mm		Ref.
F. P. 100%				25°C	13.31	5
B. P. °C				BP	0.0483	5
760 mm	173.		3	t _e	0.0337	5
100	111.		5	30 mm	0.7101	5
30	83.		5			
10	61.		5	ΔHm cal/g		
1	25.		5			
Pressure mm 25°C	1.03		5	ΔHv cal/g	56.62	5
t _e	1191.7		5	25°C	51.32	5
				30 mm	43.73	5
Density g/ml 20°C	1.6652		3	BP	42.39	5
d ₄ ²⁵	1.6584		3	t _e	42.28	5
d ₄ ³⁰				t _e (d, e)	21.04	5
				ΔHv/T _e		
a	1.6924		5	d ₄ ⁸³ to	58.25	5
b	-0.00136		5	e ₄ ²¹⁰ °C	0.0839	5
Ref. Index				d ₄ ¹ to		
n _D 20°C	1.5088		3	e ₄ ¹ °C		
25	1.5064		3	d ₄ g/ml		
30				v _c ml/g		
"C"	0.4016		4	t _c °C		
MR (Obs.)	41.221		4	P _c mm		
MR (Calc.)	40.820		5	PV/RT	1.0062	5
(nD-d/2)				25°C	1.0000	5
Dielectric				30 mm	0.9385	5
A 83 to	7.36014		5	BP	0.9243	5
B 220 °C	1697.7		5	t _e		
C	206.		5	t _c		
A* 83 to	2.07897		5	ΔHc kcal/m		
B* 210 °C	1612.0		5	ΔHf		
K				ΔFf		
c				Viscosity		
t _k to				centistokes		
t _x °C				η		
A' to						
B' °C				B ^v to		
C' °C				A ^v °C		
A'* to				(B ^v) to		
B'* °C				(A ^v) °C		
Ac _l to				c _p liq. °K		
Bc _l t _c °C				c _p vap. °K		
Cc _l °C				c _v vap.		
Cryos. A°						
consts. B°						
t _e °C	190.28		5			
† grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

NAME		2, 3-Dibromo-2-methylbutane			STRUCTURAL FORMULA		
					CH ₃ CB _r (CH ₃)CHBrCH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₅ H ₁₀ Br ₂	Molecular Weight	229.962		
		Ref.			Ref.		
F. P. °C	15.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	12.08	5	g	*K
B. P. °C			BP	0.0481	5	h	
760 mm	171.	3	t _e	0.0337	5	f'	to
100	109.	5	t _e (d, e)	0.7076	5	g'	*K
30	81.	5	ΔHm cal/g			h'	
10	59.	5	ΔHv cal/g			m	to
1	23.	5	25°C	56.09	5	n	*K
Pressure mm 25°C	1.14	5	30 mm	51.02	5	o	
t _e	1186.6	5	BP	43.54	5	m'	to
Density g/ml 20°C	1.6723	3	t _e	42.23	5	n'	*K
d ^t 25	1.6654	3	t _e (d, e)	42.12	5	o'	
d ^t 30			ΔHv/T _e	21.06	5	Surface tension dynes/cm. 20°C	
a	1.6999	5	d 81 to	57.75	5	30	33.57
b	-0.00138	5	e 208 °C	0.0831	5	30	32.47
Ref. Index n _D 20°C	1.5102	3	e' to °C			40	31.40
25	1.5078	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.4009	4	t _c °C			40	
MR (Obs.)	41.141	4	P _c mm			Sugd.	331.0
MR (Calc.) (n _D -d/2)	40.820	5	PV/RT 25°C	1.0065	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 81 to	7.36735	5	BP	0.9388	5	Flash Point °C	
B 218 °C	1695.9	5	t _e	0.9248	5	Fire Point	
C	207.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 81 to	2.08697	5	ΔHc kcal/m			Solubility in +	
B* 208 °C	1610.1	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _x to °C			η °C			Ether	
A' to °C			B ^v to °C			n-Heptane	
B' to °C			A ^v to °C			Ethanol	
C'			(B ^v) to °C			Water	
A' * to °C			(A ^v) °C			Water in	
B' * to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A° const. B°							
t _e °C	188.04	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 73

NAME		1, 1-Dibromo-2, 2-dimethylpropane				STRUCTURAL FORMULA	
						CHBr ₂ C(CH ₃) ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₁₀ Br ₂	Molecular Weight 229.962				
		Ref.			Ref.	Ref.	
F.P. °C	14.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	18.43	5	g	°K
B.P. °C			BP	0.0491	5	h	
760 mm	180.	3	t _e	0.0338	5	f'	to
100	117.	5	30 mm	0.7209	5	g'	°K
30	88.	5	ΔHm cal/g			h'	
10	66.	5	ΔHv cal/g			m	to
1	29.	5	25°C	58.08	5	n	°K
Pressure mm 25°C	0.72	5	30 mm	52.17	5	o	
t _e	1209.5	5	BP	44.41	5	m'	to
Density g/ml 20°C	1.6695	3	t _e	42.99	5	n'	°K
25	1.6622	3	t _e (d, e)	42.87	5	o'	
d ₄ 30			ΔHv/T _e	20.98	5	Surface tension dynes/cm. 20°C	
a	1.6987	5	d 88 to	59.65	5	γ	33.34
b	-0.00146	5	e 218 °C	0.0846	5		32.19
Ref. Index			d'				31.07
n _D 20°C	1.5047	3	e'			Parachor [P]	
25	1.5023	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.3975	4	t _c °C			40	
MR (Obs.)	40.835	4	P _c mm			Sugd.	331.0
MR (Calc.) (nD-d/2)	40.820	5	PV/RT			Exp. L.l./wt. u.	
Dielectric			25°C	1.0060	5	Dispersion	
A 88 to	7.36566	5	30 mm	1.0000	5	Flash Point °C	
B 228 °C	1726.7	5	BP	0.9373	5	Fire Point	
C	205.	5	t _e	0.9224	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 88 to	2.08013	5	t _c			Solubility in ⁺	
B* 218 °C	1640.4	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k to			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' to			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C'			(B ^v) to			Water in	
A'* to			(A ^v) °C				
B'* °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc °C			c _v vap.				
Cc °C							
Cryos. A ^o const. B ^o							
t _e °C	198.14	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 1, 2-Tribromoethane			STRUCTURAL FORMULA		
					CHBr ₂ CH ₂ Br		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂ H ₃ Br ₃	Molecular Weight	266.792		
		Ref.			Ref.		
F. P. °C	-29.30	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	28.27	5	g	°K
B. P. °C	188.93	3	BP	0.0500	5	h	
760 mm	124.57	5	t _e	0.0339	5	f'	to
100	95.47	5	30 mm	0.7340	5	g'	°K
30	73.10	5	ΔHm cal/g			h'	
10	35.60	5	ΔHv cal/g			m	to
1			25°C	51.79	5	n	°K
Pressure mm 25°C	0.45	5	30 mm	45.96	5	o	
t _e	1232.5	5	BP	39.08	5	m'	to
Density g/ml 20°C	2.6211	3	t _e	37.80	5	n'	°K
d ^t 25	2.6101	3	t _e (d, e)	37.66	5	o'	
d ^t 30			ΔHv/T _e	20.95	5	Surface tension dynes/cm. 20°C	
a	2.6651	5	d 95 to	52.99	5	30	45.87
b	-0.00220	5	e 228 °C	0.0736	5	40	44.35
Ref. Index n _D 20°C	1.5933	3	d' °C			40	42.87
25	1.5907	3	e' °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.2945	4	t _c ml/g			40	
MR (Obs.)	34.506	4	t _c °C			Sugd.	264.9
MR (Calc.) (n _D -d/2)	34.731	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0050	5	Dispersion	
A 95 to	7.36386	5	30 mm	1.0000	5	Flash Point °C	
B 238 °C	1757.0	5	BP	0.9360	5	Fire Point	
C	203.	5	t _e	0.9203	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 95 to	2.13744	5	t _c			Solubility in +	
B* 228 °C	1670.2	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _x °C			Viscosity centistokes			Ether	
t _x °C			η °C			n-Heptane	
A' °C			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C' °C			(B ^v) to			Water in	
A' * to			(A ^v) °C				
B' * °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
const. B°							
t _e °C	208.19	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 2, 3-Tribromopropane				STRUCTURAL FORMULA			
						CH ₂ BrCHBrCH ₂ Br			
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₅ Br ₃	Molecular Weight	280.818				
		Ref.			Ref.			Ref.	
F. P. °C	16.19	3	dt/dP °C/mm			f	to		
F. P. 100%			25°C	146.2	5	g	°C		
B. P. °C			BP	0.0533	5	h	---		
760 mm	222.16	3	t _e	0.0343	5	f'	to		
100	153.46	5	30 mm	0.7841	5	g'	°C		
30	122.38	5	ΔHm cal/g			h'			
10	98.47	5	ΔHv cal/g			m	to		
1	58.40	5	25°C	55.37	5	n	°K		
Pressure mm 25°C	0.08	5	30 mm	47.06	5	o			
t _e	1316.5	5	BP	39.74	5	m'	to		
Density g/ml 20°C	2.4209	3	t _e	38.20	5	n'	°K		
25	2.411	3	t _e (d, e)	38.01	5	o'			
d ₄ 30			ΔHv/T _e	20.68	5	Surface tension dynes/cm. 20°C			
a	2.4605	5	d 122 to	56.04	5	γ	47.11	5	
b	-0.00198	5	e 266 °C	0.0734	5	30	45.59	5	
Ref. Index n _D 20°C	1.5862	3	d' to			40	44.10	5	
25	1.5836	3	e' °C			Parachor [P] 20°C			
30			d _c g/ml			30			
"C"	0.3153	4	v _c ml/g			40			
MR (Obs.)	38.940	4	t _c °C			Sugd.	303.9	5	
MR (Calc.) (nD-d/2)	39.349	5	P _c mm			Exp. L. l. %/wt. u.			
Dielectric			PV/RT 25°C	1.0003	5	Dispersion			
A 122 to	7.37378	5	30 mm	1.0000	5	Flash Point °C			
B 276 °C	1883.3	5	BP	0.9307	5	Fire Point			
C 197.		5	t _e	0.9120	5	M. Spec. Ultra V. X-Ray Dif. Infrared			
A* 122 to	2.15063	5	t _c			Solubility in ⁺			
B* 266 °C	1794.0	5	ΔHc kcal/m			Acetone			
K			ΔHf			Carbon tet.			
t _k to			ΔFf			Benzene			
t _x °C			Viscosity centistokes			Ether			
A' to			η °C			n-Heptane			
B' °C			B ^v to			Ethanol			
C' °C			A ^v °C			Water			
A'* to			(B ^v)			Water in			
B'* °C			(A ^v)						
Ac to			c _p liq. °C						
Bc °C			c _p vap. °K						
Cc °C			c _v vap.						
Cryos. A* consts. B*									
t _e °C	245.67	5							

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1, 2, 3-Tribromobutane			STRUCTURAL FORMULA		
					CH ₂ BrCHBrCHBrCH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₇ Br ₃	Molecular Weight	294.844		
F. P. °C	-19.	3					
F. P. 100%							
B. P. °C							
760 mm	220.	3		131.7	5		
100	152.	5		0.0531	5		
30	121.	5		0.0343	5		
10	97.	5					
1	57.	5		0.7805	5		
Pressure mm 25°C	0.09	5					
t _e	1310.8	5					
Density g/ml 20°C	2.190	3					
d _t 25	2.186	3					
d ₄ 30							
a	2.2060	5					
b	-0.03800	5					
Ref. Index n _D 20°C	1.568	3					
25	1.566	3					
30							
"C"	0.3384	4					
MR (Obs.)	44.044	4					
MR (Calc.) (n _D -d/2)	43.967	5					
Dielectric							
A 121 to	7.36880	5					
B 273 °C	1871.5	5					
C	197.	5					
A* 121 to	2.16850	5					
B* 263 °C	1782.6	5					
K							
c							
t _x to							
t _x °C							
A' to							
B' °C							
C'							
A'* to							
B'* °C							
Ac to							
Bc t _c °C							
Cc							
Cryos. A° const.							
B°							
t _e °C	243.22	5					
dt/dP °C/mm 25°C							
BP							
t _e 30 mm							
ΔHm cal/g							
ΔHv cal/g 25°C							
30 mm							
BP							
t _e							
t _e (d, e)							
ΔHv/T _e							
d 121 to							
e 263 °C							
d' to							
e' °C							
d _c g/ml							
v _c ml/g							
t _c °C							
P _c mm							
PV/RT 25°C							
30 mm							
BP							
t _e							
t _c							
ΔHc kcal/m							
ΔHf							
ΔFf							
Viscosity centistokes							
η °C							
B ^v to							
A ^v °C							
(B ^v) to							
(A ^v) °C							
c _p liq. °K							
c _p vap. °K							
c _v vap.							
f to							
g °K							
h							
f' to							
g' °K							
h'							
m to							
n °K							
o							
m' to							
n' °K							
o'							
Surface tension dynes/cm. 20°C							
30							
40							
Parachor [P] 20°C							
30							
40							
Sugd.							
Exp. L. l. %/wt. u.							
Dispersion							
Flash Point °C							
Fire Point							
M Spec. Ultra V. X-Ray Dif. Infrared							
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 77

NAME		1, 2, 4-Tribromobutane			STRUCTURAL FORMULA		
					CH ₂ BrCHBrCH ₂ CH ₂ Br		
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₇ Br ₃	Molecular Weight 294.844				
		Ref.			Ref.		
F. P. °C	-18.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°C
B. P. °C			25°C	102.1	5	h	
760 mm	215.	3	BP	0.0526	5		
100	147.	5	t _e	0.0342	5	f'	to
30	117.	5	30 mm	0.7730	5	g'	°C
10	93.	5	ΔHm cal/g			h'	
1	54.	5	ΔHv cal/g			m	to
Pressure mm 25°C	0.11	5	25°C	51.50	5	n	°K
t _e	1298.2	5	30 mm	44.14	5	o	
Density g/ml 20°C	2.17	3	BP	37.32	5	m'	to
d ^t 25	2.18	3	t _e	35.95	5	n'	°K
d ⁴ 30			t _e (d, e)	35.76	5	o'	
a	2.1300	5	ΔHv/T _e	20.75	5	Surface tension dynes/cm. 20°C	
b	-0.00200	5	d 117 to	52.22	5	γ	40.56
Ref. Index			e 258 °C	0.0693	5		5
n _D 20°C	1.5608	3	d'				42.08
25	1.5588	3	e'				43.64
30			d _c g/ml			Parachor [P]	
"C"	0.3375	4	v _c ml/g				20°C
MR (Obs.)	43.986	4	t _c °C				30
MR (Calc.)	43.967	5	P _c mm				40
Dielectric			PV/RT			Sugd.	342.9
A 117	7.36844	5	25°C	1.0017	5	Exp. L. l. %/wt.	
B 268 °C	1853.4	5	30 mm	1.0000	5	u.	
C 198.		5	BP	0.9317	5	Dispersion	
A* 117	2.17088	5	t _e	0.9136	5	Flash Point °C	
B* 258 °C	1764.9	5	t _c			Fire Point	
K			ΔHc kcal/m			M. Spec.	
t _k to			ΔHf			Ultra V.	
t _x °C			ΔFf			X-Ray Dif.	
A' to			Viscosity centistokes			Infrared	
B' °C			η			Solubility in ⁺	
C' °C			B ^v to			Acetone	
A'* to			A ^v °C			Carbon tet.	
B'* °C			(B ^v)			Benzene	
Ac to			(A ^v)			Ether	
Bc t _c °C			c _p liq. °C			n-Heptane	
Cc °C			c _p vap. °K			Ethanol	
Cryos. A°			c _v vap.			Water	
const. B°						Water in	
t _e °C	237.57	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2, 3, 3-Tribromobutane			STRUCTURAL FORMULA		
					CH ₃ CHBrCBr ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₇ Br ₃	Molecular Weight	294.844		
F. P. °C	1.85	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	64.86	5	g	
B. P. °C			BP	0.0517	5	h	
760 mm	206.	3	t _e	0.0341	5	f'	to °K
100	139.	5	30 mm	0.7598	5	g'	
30	109.	5	ΔHm cal/g			h'	
10	86.	5	ΔHv cal/g			m	to °K
1	47.	5	25°C	49.82	5	n	
Pressure mm 25°C	0.19	5	30 mm	43.24	5	o	
t _e	1275.7	5	BP	36.63	5	m'	to °K
Density g/ml 20°C	2.1724	3	t _e	35.31	5	n'	
d ₄ ²⁵	2.1708	3	t _e (d, e)	35.16	5	o'	
d ₄ ³⁰			ΔHv/T _e	20.80	5	Surface tension dynes/cm. 20°C	
a	2.1788	5	d 109 to	50.71	5	γ	40.74
b	-0.03320	5	e 247 °C	0.0684	5	30	40.50
Ref. Index n _D 20°C	1.560	3	e'			40	40.26
25	1.558	3	d _v g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.3367	4	t _c °C			30	
MR (Obs.)	43.886	4	P _c mm			40	
MR (Calc.) (n _D -d/2)	43.967	5	PV/RT			Sugd.	342.9
Dielectric			25°C	1.0031	5	Exp. L. l. %/wt. u.	
A 109 to	7.37006	5	30 mm	1.0000	5	Dispersion	
B 257 °C	1822.6	5	BP	0.9333	5	Flash Point °C	
C	200.	5	t _e	0.9160	5	Fire Point	
A* 109 to	2.17708	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 247 °C	1734.5	5	ΔHc kcal/m			Solubility in +	
K			ΔHf			Acetone	
c			ΔFf			Carbon tet.	
t _k to °C			Viscosity centistokes			Benzene	
t _x to °C			γ °C			Ether	
A' to °C			B ^v to °C			n-Heptane	
B' to °C			A ^v to °C			Ethanol	
C'			(B ^v) to °C			Water	
A ^{1*} to °C			(A ^v) to °C			Water in	
B ^{1*} to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A ¹ const. B ¹							
t _e °C	227.42	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE III. BROMOALKANES

No. 79

NAME				1, 3-Dibromo-2-(bromomethyl)-propane				STRUCTURAL FORMULA			
								CH ₂ BrCH(CH ₂ Br)CH ₂ Br			
Mole % Pur.		Ref.	Molecular Formula C ₄ H ₇ Br ₃	Molecular Weight 294.844							
		3									
		Ref.			Ref.					Ref.	
F.P. °C	-32.	3	dt/dP °C/mm			f		to			
F.P. 100%			25°C			g		°C			
B.P. °C			BP		0.0632	5	h		-----		
760 mm	320.	3	t _e		0.0356	5	g'		to		
100	239.	5	30 mm		0.9304	5	h'		°C		
30	202.	5	ΔHm cal/g				m		to		
10	173.	5	ΔHv cal/g				n		°K		
1	126.	5	25°C				o				
Pressure mm 25°C			30 mm		54.43	5	m'		to		
t _e	1556.4	5	BP		45.06	5	n'		°K		
Density g/ml 20°C	2.14	3	t _e (d, e)		42.60	5	o'				
25	2.14	3	ΔHv/T _e		19.93	5	Surface tension dynes/cm. 20°C		38.37	5	
d ₄ 30			d 202 to		70.40	5	30		38.37	5	
a	2.1400	5	e 377 °C		0.0792	5	40		38.37	5	
b			d' to				Parachor [F]				
Ref. Index n _D			e' °C				20°C				
25	1.5512	3					30				
30	1.5492	3	d _c g/ml				40				
"C"	0.3368	4	v _c ml/g				Sugd.		342.9	5	
MR (Obs.)	43.971	4	t _c °C				Exp. L. l. %/wt. u.				
MR (Calc.) (nD-d/2)	43.967	5	P _c mm				Dispersion				
Dielectric			PV/RT 25°C		1.0000	5	Flash Point °C				
A 202 to	7.38430	5	30 mm		0.9154	5	Fire Point				
B 387 °C	2242.7	5	BP		0.8877	5	M. Spec. Ultra V. X-Ray Dif. Infrared				
C	178.	5	t _e				Solubility in ⁺				
A* 202 to	2.13724	5	ΔHc kcal/m				Acetone				
B* 377 °C	2149.6	5	ΔHf				Carbon tet.				
K			ΔFf				Benzene				
c			Viscosity centistokes η				Ether				
t _k to °C							n-Heptane				
t _x to °C							Ethanol				
A' to °C							Water				
B' to °C							Water in				
C' to °C											
A'* to °C			B ^v to °C								
B'* to °C			A ^v to °C								
Ac to °C			(B ^v) to °C								
Bc to °C			(A ^v) to °C								
Cc to °C			c _p liq. °C								
Cryos. A° const. B°			c _p vap. °K								
t _e °C	356.98	5	c _v vap.								
* grams/100 grams solvent											
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula											
SOURCE: MCA											
PURIFICATION: MCA											
LITERATURE REFERENCES: 3 MCA											

NAME		1, 1, 2, 2-Tetrabromoethane			STRUCTURAL FORMULA	
					CHBr ₂ CHBr ₂	
Mole % Pur.	Ref. 3	Molecular Formula	C ₂ H ₂ Br ₄	Molecular Weight	345.700	
F.P. °C	0.	Ref.		Ref.		
F.P. 100%						
B.P. °C						
760 mm	243.5	3		445.0	5	
100	172.0	5		0.0555	5	
30	139.7	5		0.0346	5	
10	114.8	5		0.8161	5	
1	73.1	5				
Pressure mm 25°C	0.02	5				
t _e	1369.9	5				
Density g/ml 20°C	2.9656	3				
d ₄ ^t 25	2.9529	3				
d ₄ ^t 30						
"a"	3.0164	5				
"b"	-0.00254	5				
Ref. Index n _D 20°C	1.6353	3				
25	1.6323	3				
30						
"C"	0.2774	4				
MR (Obs.)	41.753	4				
MR (Calc.) (n _D -d/2)	42.496	5				
Dielectric						
A 140 to	7.37794	5				
B 300 °C	1963.0	5				
C	193.	5				
A* 140 to	2.23378	5				
B* 290 °C	1872.5	5				
K						
c						
t _k — to						
t _x — °C						
A' — to						
B' — °C						
C'						
A'* to						
B'* °C						
Ac to						
Bc t _c °C						
Cc						
Cryos. A' consts. B'						
t _e °C	269.84	5				
dt/dP °C/mm 25°C						
BP						
t _e						
30 mm						
ΔHm cal/g						
ΔHv cal/g 25°C						
30 mm						
BP						
t _e						
t _e (d, e)						
ΔHv/T _e						
d 140 to						
e 290 °C						
d' — to						
e' — °C						
d _v g/ml						
v _c ml/g						
t _c °C						
P _c mm						
PV/RT 25°C						
30 mm						
BP						
t _e						
t _c						
ΔHc kcal/m						
ΔHf						
ΔFf						
Viscosity centistokes						
η °C						
B ^v — to						
A ^v — °C						
(B ^v) — to						
(A ^v) — °C						
c _p liq. °K						
c _p vap. °K						
c _v vap.						
f — to						
g — °K						
h						
f' — to						
g' — °K						
h'						
m — to						
n — °K						
o						
m' — to						
n' — °K						
o'						
Surface tension dynes/cm. 20°C						
γ						
30						
40						
Parachor [P] 20°C						
30						
40						
Sugd.						
Exp. L. l. %/wt. u.						
Dispersion						
Flash Point °C						
Fire Point						
M Spec. Ultra V. X-Ray Dif. Infrared						
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in						
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

TABLE III. BROMOALKANES

No. 81

NAME		1, 2, 2, 3-Tetrabromopropane				STRUCTURAL FORMULA			
						$\text{CH}_2\text{BrCBBr}_2\text{CH}_2\text{Br}$			
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_3\text{H}_4\text{Br}_4$	Molecular Weight	359.720				
		Ref.			Ref.				
F.P. °C	10.7	3	dt/dP			f	to		
F.P. 100%			°C/mm			g	°C		
B.P. °C			25°C		627.7	h	---		
760 mm	250.	3	BP		0.0561	f'	to		
100	178.	5	t_e		0.0347	g'	°C		
30	145.	5	30 mm		0.8261	h'			
10	120.	5	$\Delta\text{Hm cal/g}$						
1	78.	5	$\Delta\text{Hv cal/g}$						
Pressure mm 25°C	0.02	5	25°C		47.53	m	to		
t_e	1385.7	5	30 mm		38.96	n	°K		
Density g/ml 20°C	2.703	3	BP		32.69	o			
d_t	2.690	3	t_e (d, e)		31.26	m'	to		
d_4	30	3	t_e		31.07	n'	°K		
a	2.7550	5	$\Delta\text{Hv}/T_e$		20.43	o'			
b	-0.00260	5	d	145 to	47.59	Surface tension dynes/cm. 20°C			
Ref. Index			e	297	0.0596	y	30	50.52	5
n_D	1.6200	3	d'	to			40	48.60	5
25	1.6170	3	e'	°C		Parachor [P]			
30			d_c g/ml			20°C			
"C"	0.2975	4	v_c ml/g			30			
MR (Obs.)	46.747	4	t_c °C			40			
MR (Calc.)	47.114	5	F_c mm			Sugd. 354.8			
Dielectric			PV/RT			Exp. L. l. %/wt. u.			
A	145 to	5	25°C		0.9950	Dispersion			
B	307 °C	5	30 mm		1.0000	Flash Point °C			
C	192.	5	BP		0.9262	Fire Point			
A*	145 to	5	t_e		0.9050	M. Spec. Ultra V.			
B*	297 °C	5	t_c			X-Ray Dif.			
K			$\Delta\text{Hc kcal/m}$			Infrared			
c			ΔHf			Solubility in ⁺			
t_k	to		ΔFf			Acetone			
t_x	°C		Viscosity centistokes			Carbon tet.			
A'	to		η			Benzene			
B'	°C		°C			Ether			
C'						n-Heptane			
A**	to		B^v			Ethanol			
B**	°C		A^v			Water			
Ac	to		(B^v)			Water in			
Bc	°C		(A^v)						
Cc	°C		c_p liq. °C						
Cryos. A°			c_p vap. °K						
const. B°			c_v vap.						
t_e °C	277.19	5							
+ grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

TABLE IV. IODOALKANES

No. 1

NAME		Iodomethane			STRUCTURAL FORMULA		
					CH ₃ I		
Mole % Pur.	Ref. 3	Molecular Formula	CH ₃ I	Molecular Weight	141.944		
F. P. °C	-66.45	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0641	5	g	°K
B. P. °C			BP	0.0391	5	h	
760 mm	42.43	3	t _e	0.0360	5	f'	to
100	-6.91	5	30 mm	0.5422	5	g'	°K
30	-28.59	5	ΔHm cal/g			h'	
10	-45.01	5	ΔHv cal/g			m	to
1	-72.04	5	25°C	46.35	5	n	°K
Pressure mm 25°C	405.9	5	30 mm	51.47	5	o	
t _e	844.0	5	BP	44.72	5	m'	to
Density g/ml 20°C	2.2790	3	t _e (d, e)	44.43	5	n'	°K
d ^t 25	2.2650	3	t _e	44.42	5	o'	
d ^t 30			ΔHv/T _e	19.79	5	Surface tension dynes/cm. 20°C	
a	2.3355	5	d -29 to	48.76	5	γ	10.75
b	-0.00269	5	e 66 °C	0.0950	5	30	10.20
Ref. Index			d' to			40	9.67
n _D 20°C	1.5308	3	e' °C			Parachor [P]	
25	1.5270	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.3053	4	t _c °C			40	
MR (Obs.)	19.264	4	P _c mm			Sugd.	112.9
MR (Calc.)	19.618	5	PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C	0.9705	5	u.	
A -29 to	6.87991	3	30 mm	1.0000	5	Dispersion	
B 76 °C	1093.235	3	BP	0.9547	5	Flash Point °C	
C	230.94	3	t _e	0.9517	5	Fire Point	
A* -29 to	1.49998	5	t _c			M. Spec.	
B* 66 °C	1022.67	5	ΔHc kcal/m			Ultra V.	
K			ΔHf			X-Ray Dif.	
c			ΔFf			Infrared	
t _k to			Viscosity centistokes			Solubility in ⁺	
t _x °C			η °C			Acetone	
A' to						Carbon tet.	
B' °C						Benzene	
C' °C			B ^v to			Ether	
A'* to			A ^v °C			n-Heptane	
B'* °C			(B ^v) to			Ethanol	
Ac to			(A ^v) °C			Water	
Bc t _c °C			c _p liq. °K			Water in	
Cc t _c °C			c _p vap. °K				
Cryos. A°			c _v vap.				
const. B°							
t _e °C	45.58	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Iodoethane			STRUCTURAL FORMULA		
					CH ₂ ICH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₅ I	Molecular Weight	155.970		
		Ref.			Ref.		
F.P. °C	-111.1	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C	0.1699	5	g	to °K
B.P. °C	72.30	3	BP	0.0430	5	h	
760 mm	18.06	5	t _e	0.0370	5	f'	to °K
100	-5.70	5	t _e (d, e)			g'	to °K
30	-23.66	5	ΔHm cal/g			h'	
10	-53.17	5	ΔHv cal/g			m	to °K
1			25°C	48.29	5	n	to °K
Pressure mm 25°C	136.2	5	30 mm	51.17	5	o	
t _e	924.0	5	BP	44.00	5		
Density g/ml 20°C	1.9358	3	t _e	43.44	5	m'	to °K
d ^t 25	1.9245	3	ΔHv/T _e	19.25	5	n'	to °K
d ₄ 30						o'	
a	1.9811	5	d -6 to	50.65	5	Surface tension dynes/cm. 20°C	
b	-0.00222	5	e 99 to	0.0919	5	γ	12.61
Ref. Index n _D 20°C	1.5133	3	e' to			30	12.02
25	1.5101	3	e' °C			40	11.44
30			d _c g/ml			Parachor [P]	
"C"	0.3483	4	v _c ml/g			20°C	
MR (Obs.)	24.229	4	t _c °C			30	
MR (Calc.) (n _D -d/2)	24.236	5	P _c mm			40	
Dielectric			PV/RT			Sugd.	151.9
A -6 to	6.83198	3	25°C	0.9870	5	Exp. L. l. %/wt. u.	
B 109 °C	1175.709	3	30 mm	1.0000	5	Dispersion	
C	225.26	3	BP	0.9496	5	Flash Point °C	
A* -6 to	1.46454	5	t _e	0.9436	5	Fire Point	
B* 99 °C	1101.43	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in +	
c			ΔHf			Acetone	
t _k to °C			ΔFf			Carbon tet.	
t _x to °C			Viscosity centistokes			Benzene	
A' to °C			η °C			Ether	
B' to °C			B ^v to °C			n-Heptane	
C' to °C			A ^v to °C			Ethanol	
A1* to °C			(B ^v) to °C			Water	
B1* to °C			(A ^v) to °C			Water in	
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	78.83	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE IV. IODOALKANES

No. 3

NAME		1-Iodopropane		STRUCTURAL FORMULA	
				CH ₂ ICH ₂ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₇ I	Molecular Weight 169.996		
		Ref.		Ref.	
F.P. °C	-101.3	3	dt/dP °C/mm		f to
F.P. 100%			25°C		g °K
B.P. °C			BP	0.4756	5
760 mm	102.45	3	t _e	0.0468	5
100	43.56	5	t _e 30 mm	0.0377	5
30	17.80	5	ΔHm cal/g	0.6435	5
10	-1.67	5			
1	-33.64	5			
Pressure mm 25°C	43.09	5	ΔHv cal/g 25°C	50.58	5
t _e	1004.1	5	30 mm	51.25	5
Density g/ml 20°C	1.7489	3	BP	43.68	5
d ₄ ^t 25	1.7394	3	t _e	42.83	5
d ₄ ^t 30			t _e (d, e)	42.76	5
			ΔHv/T _e	18.87	5
a	1.7869	5	d 18 to	52.84	5
b	-0.00188	5	e 133 °C	0.0894	5
Ref. Index			d' to		
n _D 20°C	1.5058	3	e' °C		
25	1.5028	3			
30			d _c g/ml		
"C"	0.3803	4	v _c ml/g		
MR (Obs.)	28.869	4	t _c °C		
MR (Calc.) (nD-d/2)	28.854	5	P _c mm		
Dielectric			PV/RT 25°C	0.9978	5
A 18 to	6.81603	3	30 mm	1.0000	5
B 143 °C	1267.062	3	BP	0.9446	5
C	219.53	3	t _e	0.9354	5
A* 18 to	1.46005	5	t _e		
B* 133 °C	1189.29	5	t _c		
K			ΔHc kcal/m		
t _k to			ΔHf		
t _x °C			ΔFf		
A' to			Viscosity centistokes		
B' °C			η °C		
C' °C					
A'* to			B ^v to		
B'* °C			A ^v °C		
Ac to			(B ^v) to		
Bc °C			(A ^v) °C		
Cc °C			c _p liq. °K		
Cryos. A°			c _p vap. °K		
const. B°			c _v vap.		
t _e °C	112.66	5			
* grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		1-Iodobutane			STRUCTURAL FORMULA			
					CH ₂ (CH ₂) ₂ CH ₃			
Mole % Pur.	Ref. 3	Molecular Formula	C ₄ H ₉ I	Molecular Weight	184.022			
		Ref.			Ref.	Ref.		
F.P. °C	-103.0	3	dt/dP °C/mm			f to		
F.P. 100%			25°C	1.319	5	g _ _ °K		
B.P. °C			BP	0.0500	5	h		
760 mm	130.53	3	t _e	0.0381	5	f' to		
100	67.57	5				g' _ _ °K		
30	40.01	5	30 mm	0.6884	5	h'		
10	19.18	5	ΔHm cal/g			m to		
1	-15.03	5	ΔHv cal/g			n _ _ °K		
Pressure mm 25°C	13.86	5	25°C	52.66	5	o		
t _e	1078.0	5	30 mm	51.27	5			
Density g/ml 20°C	1.6154	3	BP	43.38	5	m' to		
d ₄ ^t 25	1.6072	3	t _e (d, e)	42.27	5	n' _ _ °K		
d ₄ ^t 30			ΔHv/T _e	42.17	5	o'		
a	1.6482	5	d 40 to	54.75	5	Surface tension dynes/cm. 20°C		
b	-0.00163	5	e 164 °C	0.0872	5	y	16.58	5
Ref. Index n _D 20°C	1.5001	3	d' to			30	15.92	5
25	1.4973	3	e' °C			40	15.27	5
30			d v c g/ml			Parachor [P]		
"C"	0.4073	4	v c ml/g			20°C		
MR (Obs.)	33.511	4	t _c °C			30		
MR (Calc.)	33.472	5	P c mm			40		
Dielectric			Pv/RT			Sugd.	229.9	5
A 40 to	6.82262	3	25°C	1.0032	5	Exp. L. l. %/wt. u.		
B 174 °C	1358.860	3	30 mm	1.0000	5	Dispersion		
C	214.20	3	BP	0.9401	5	Flash Point °C		
A* 40 to	1.47905	5	t _e	0.9281	5	Fire Point		
B* 164 °C	1278.08	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared		
K			ΔHc kcal/m			Solubility in +		
c			ΔHf			Acetone		
t _k to			ΔFf			Carbon tet.		
t _x °C			Viscosity centistokes			Benzene		
A' to			η °C			Ether		
B' °C			B ^v to			n-Heptane		
C' °C			A ^v °C			Ethanol		
A'* to °C			(B ^v) to			Water		
B'* to °C			(A ^v) °C			Water in		
A _c to			c _p liq. °K					
B _c °C			c _p vap. °K					
C _c °C			c _v vap.					
Cryos. A ^o const. B ^o								
t _e °C	144.34	5						
							† grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

TABLE IV. IODOALKANES

No. 5

NAME		1-Iodopentane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{I}(\text{CH}_2)_3\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_5\text{H}_{11}\text{I}$	Molecular Weight 198.048				
		Ref.			Ref.		
F.P. °C	-85.6	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C		g	°K	
B.P. °C			BP	3.731	5	h	
760 mm	157.00	3	t_e	0.0527	5	f'	to
100	90.52	5	30 mm	0.0383	5	g'	°K
30	61.37	5	$\Delta\text{Hm cal/g}$	0.7287	5	h'	
10	39.31	5	$\Delta\text{Hv cal/g}$			m	to
1	3.04	5	25°C	54.71	5	n	°K
Pressure mm 25°C	4.39	5	30 mm	51.35	5	o	
t_e	1147.4	5	BP	43.21	5	m'	to
Density g/ml 20°C	1.5161	3	t_e	41.87	5	n'	°K
25	1.5088	3	t_e (d, e)	41.74	5	o'	
d_4^{30}			$\Delta\text{Hv}/T_e$	18.53	5	Surface tension dynes/cm. 20°C	
a	1.5453	5	d 61 to	56.58	5	17.95	5
b	-0.00146	5	e 194 °C	0.0851	5	30	5
Ref. Index n_D			e' to °C			40	5
20°C	1.4959	3	d_c g/ml			Parachor [P]	
25	1.4933	3	v_c ml/g			20°C	
30			t_c °C			30	
"C"	0.4306	4	P_c mm			40	
MR (Obs.)	38.153	4	PV/RT			Sugd.	268.9
MR (Calc.)	38.090	5	25°C	1.0047	5	Exp. L. l. %/wt.	
($n_D-d/2$)			30 mm	1.0000	5	u.	
Dielectric			BP	0.9364	5	Dispersion	
A 61 to	6.85172	3	t_e	0.9217	5	Flash Point °C	
B 204 °C	1454.028	3	t_c			Fire Point	
C	209.17	3	$\Delta\text{Hc kcal/m}$			M. Spec.	
A* 61 to	1.52040	5	ΔHf			Ultra V.	
B* 194 °C	1370.50	5	ΔFf			X-Ray Dif.	
K			Viscosity centistokes			Infrared	
t_k to °C			η			Solubility in ⁺	
t_x to °C						Acetone	
A' to °C			B ^v to °C			Carbon tet.	
B' to °C			A to °C			Benzene	
C' to °C			(B ^v) to °C			Ether	
A'* to °C			(A ^v) to °C			n-Heptane	
B'* to °C			c_p liq. °K			Ethanol	
Ac to °C			c_p vap. °K			Water	
Bc t_c °C			c_v vap.			Water in	
Cc t_c °C							
Cryos. A°							
consts. B°							
t_e °C	174.28	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME			1-Iodohexane			STRUCTURAL FORMULA		
						CH ₂ I(CH ₂) ₄ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₆ H ₁₃ I	Molecular Weight	212.074			
			Ref.			Ref.		
F.P. °C	-75.		3	dt/dP °C/mm		f		to
F.P. 100%				25°C	10.54	g		°K
B.P. °C				BP	0.0549	h		
760 mm	181.33		3	t _e	0.0382	f'		to
100	111.90		5			g'		°K
30	81.37		5	30 mm	0.7639	h'		
10	58.23		5	ΔHm cal/g		m		to
1	20.12		5			n		°K
Pressure mm 25°C	1.40		5	ΔHv cal/g	56.60	o		
t _e	1210.2		5	25°C	51.38			
Density g/ml 20°C	1.4397		3	30 mm	43.04			
t _e	1.4331		3	BP	41.49	m'		to
d ₄ 25				t _e (d, e)	41.33	n'		°K
d ₄ 30				ΔHv/T _e	18.53	o'		
a	1.4661		5	d 81 to	58.17	Surface tension dynes/cm. 20°C		
b	-0.00132		5	e 222 °C	0.0834	γ		19.09
Ref. Index n _D 20°C	1.4928		3	d'		30		18.40
25	1.4903		3	e'		40		17.72
30				d _c g/ml		Parachor [P]		
"C"	0.4508		4	v _c ml/g		20°C		
MR (Obs.)	42.795		4	t _c °C		30		
MR (Calc.) (n _D -d/2)	42.708		5	P _c mm		40		
Dielectric				PV/RT		Sugd.	307.9	5
A 81 to	6.8954		3	25°C	1.0037	Exp. L.l. %/wt. u.		
B 232 °C	1549.17		3	30 mm	1.0000	Dispersion		
C	204.55		3	BP	0.9329	Flash Point °C		
A* 81 to	1.5776		5	t _e	0.9159	Fire Point		
B* 222 °C	1463.47		5	t _c		M Spec. Ultra V. X-Ray Dif. Infrared		
K				ΔHc kcal/m		Solubility in +		
c				ΔHf		Acetone		
t _k				ΔFf		Carbon tet.		
t _x				Viscosity centistokes		Benzene		
A' to				η °C		Ether		
B'						n-Heptane		
C'				B ^v to		Ethanol		
A* to				A ^v		Water		
B* °C				(B ^v) to		Water in		
Ac to				(A ^v)				
Bc t _c °C				c _p liq. °K				
Cc				c _p vap. °K				
Cryos. A° const. B°				c _v vap.				
t _e °C	201.79		5					
+ grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

TABLE IV. IODOALKANES

No. 7

NAME		1-Iodoheptane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{I}(\text{CH}_2)_5\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_7\text{H}_{15}\text{I}$	Molecular Weight	226.100		
		Ref.			Ref.		
F.P. °C	-48.2	3	dt/dP			f	to
F.P. 100%			°C/mm			g	to °K
B.P. °C			25°C	30.07	5	h	
760 mm	203.95	3	BP	0.0568	5	f'	to
100	132.01	5	t_e	0.0381	5	g'	to °K
30	100.26	5	30 mm	0.7951	5	h'	
10	76.16	5	ΔHm cal/g			m	to
1	36.38	5				n	to °K
Pressure mm 25°C	0.45	5	ΔHv cal/g			o	
t_e	1268.3	5	25°C	58.35	5		
Density g/ml 20°C	1.3791	3	30 mm	51.37	5	m'	to
t	1.3730	3	BP	42.88	5	n'	to °K
d_4			t_e	41.15	5	o'	
			t_e (d, e)	40.96	5		
a	1.4035	5	$\Delta\text{Hv}/T_e$	18.59	5	Surface tension dynes/cm. 20°C	
b	-0.00122	5	d 100 to	59.58	5	γ	20.04
Ref. Index			e 247	0.0819	5		30
n_D			d'				19.34
20°C	1.4904	3	e'				40
25	1.4880	3				Parachor [P]	
30			d_c g/ml			20°C	
"C"	0.4685	4	v_c ml/g			30	
MR (Obs.)	47.433	4	t_c °C			40	
MR (Calc.)	47.326	5	P_c mm			Sugd.	346.9
(nD-d/2)			PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C	1.0008	5	u.	
A 100 to	6.9488	3	30 mm	1.0000	5	Dispersion	
B 257 °C	1644.29	3	BP	0.9298	5	Flash Point °C	
C	200.25	3	t_e	0.9109	5	Fire Point	
A* 100 to	1.6444	5	t_c			M. Spec.	
B* 247 °C	1556.67	5	ΔHc kcal/m			Ultra V.	
K			ΔHf			X-Ray Dif.	
t_k to			ΔFf			Infrared	
t_x to			Viscosity centistokes			Solubility in ⁺	
A' to			η			Acetone	
B' to						Carbon tet.	
C' to						Benzene	
A'* to			B ^v to			Ether	
B'* °C			A ^v to			n-Heptane	
Ac to			(B ^v) to			Ethanol	
Bc to			(A ^v) to			Water	
Cc to			c_p liq. °K			Water in	
Cryos. A°			c_p vap. °K				
const. B°			c_v vap.				
t_e °C	227.33	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Iodooctane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₆ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₈ H ₁₇ I	Molecular Weight	240.126		
		Ref.			Ref.		
F. P. °C	-45.7	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	86.85	5	g	
B. P. °C			BP	0.0584	5	h	
760 mm	225.11	3	t _e	0.0378	5	f'	to °K
100	150.99	5	30 mm	0.8230	5	g'	
30	118.16	5	ΔHm cal/g			h'	
10	93.19	5	ΔHv cal/g			m	to °K
1	51.88	5	25°C	59.97	5	n	
Pressure mm 25°C	0.14	5	30 mm	51.31	5	o	
t _e	1322.2	5	BP	42.70	5	m'	to °K
Density g/ml 20°C	1.3298	3	t _e	40.82	5	n'	
d ₄ ²⁵	1.3241	3	t _e (d, e)	40.60	5	o'	
d ₄ ³⁰			ΔHv/T _e	18.69	5	Surface tension dynes/cm. 20°C	
a	1.3526	5	d 118 to °C	60.82	5	30	20.86
b	-0.00114	5	e 271 to °C	0.0805	5	40	20.15
Ref. Index n _D 20°C	1.4885	3	d' to °C			40	19.46
25	1.4862	3	v _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.4841	4	t _c °C			40	
MR (Obs.)	52.071	4	P _c mm			Sugd.	385.9
MR (Calc.) (n _D -d/2)	51.944	5	PV/RT 25°C	0.9967	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 118 to °C	7.0070	3	BP	0.9271	5	Flash Point °C	
B 281 °C	1738.53	3	t _e	0.9063	5	Fire Point	
C	196.23	3	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 118 to °C	1.7162	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 271 °C	1649.30	5	ΔHf				
K			ΔFf				
t _x to °C			Viscosity centistokes				
t _x to °C			η °C				
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C'			(B ^v) to °C				
A'*			(A ^v) to °C				
B'*			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A' consts. B'							
t _e °C	251.19	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 9

NAME		1-Iodononane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{I}(\text{CH}_2)_7\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_9\text{H}_{19}\text{I}$	Molecular Weight 254.152				
		Ref.			Ref.		Ref.
F.P. °C	-20.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	251.9	5	g	°K
B.P. °C			BP	0.0598	5	h	
760 mm	245.0	3	t_e	0.0376	5	f'	to
100	168.9	5	30 mm	0.8488	5	g'	°K
30	135.1	5				h'	
10	109.3	5	ΔH_m cal/g			m	to
1	66.6	5				n	°K
Pressure mm 25°C	0.04	5	ΔH_v cal/g	61.43	5	o	
t_e	1372.5	5	25°C	51.16	5		
Density g/ml 20°C	1.2890	3	30 mm	42.47	5	m'	to
t	1.2836	3	BP	40.45	5	n'	°K
d_4			t_e (d, e)	40.21	5	o'	
30			$\Delta H_v/T_e$	18.80	5		
a	1.3106	5	d 135 to	61.85	5	Surface tension dynes/cm. 20°C	
b	-0.00108	5	e 294 to	0.0791	5	30	21.57
Ref. Index			e' to			40	20.85
n_D 20°C	1.4870	3					20.16
25	1.4848	3	d_c g/ml			Parachor [P]	
30			v_c ml/g			20°C	
"C"	0.4979	4	t_c °C			30	
MR (Obs.)	56.708	4	P_c mm			40	
MR (Calc.)	56.562	5				Sugd.	424.9
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 135 to	7.0645	3	25°C	0.9919	5	Dispersion	
B 304 °C	1830.37	3	30 mm	1.0000	5	Flash Point °C	
C	192.5	3	BP	0.9246	5	Fire Point	
A* 135 to			t_e	0.9022	5	M. Spec.	
B* 294 °C	1.7872	5	t_c			Ultra V.	
K	1739.77	5	ΔH_c kcal/m			X-Ray Dif.	
t_k to			ΔH_f			Infrared	
t_x to			ΔF_f			Solubility in *	
A' to			Viscosity centistokes			Acetone	
B' to			η			Carbon tet.	
C' to						Benzene	
A'* to			B ^v to			Ether	
B'* °C			A ^v to			n-Heptane	
Ac to			(B ^v) to			Ethanol	
Bc to			(A ^v) to			Water	
Cc to			(A ^v) °C			Water in	
Cryos. A°			c_p liq. °K				
const. B°			c_p vap. °K				
t_e °C	273.60	5	c_v vap.				
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Iododecane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₈ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₀ H ₂₁ I	Molecular Weight	268.178		
		Ref.			Ref.		
F. P. °C	-16.3	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	737.8	5	g	
B. P. °C			BP	0.0610	5	h	
760 mm	263.7	3	t _e	0.0373	5	f'	to °K
100	185.9	5	30 mm	0.8722	5	g'	
30	151.2	5	ΔHm cal/g			h'	
10	124.7	5	ΔHv cal/g			m	to °K
1	80.7	5	25°C	62.83	5	n	
Pressure mm 25°C	0.01	5	30 mm	50.98	5	o	
t _e	1419.0	5	BP	42.25	5		
Density g/ml 20°C	1.2546	3	t _e	40.06	5	m'	to °K
d ^t 25	1.2494	3	t _e (d, e)	39.84	5	n'	
d ₄ 30			ΔHv/T _e	18.92	5	o'	
a	1.2754	5	d 151 to °C	62.72	5	Surface tension dynes/cm. 20°C	
b	-0.00104	5	e 315 to °C	0.0776	5	γ	22.18 5
Ref. Index n _D 20°C	1.4858	3	e' to °C			30	21.46 5
25	1.4836	3	d _c g/ml			40	20.75 5
30			t _c ml/g			Parachor [P]	
"C"	0.5104	4	t _c °C			20°C	
MR (Obs.)	61.349	4	P _c mm			30	
MR (Calc.) (n _D -d/2)	61.180	5	PV/RT			40	
Dielectric			25°C	0.9873	5	Sugd.	463.9 5
A 151 to °C	7.1220	3	30 mm	1.0000	5	Exp. L. l. %/wt. u.	
B 325 °C	1919.75	3	BP	0.9230	5	Dispersion	
C	188.9	3	t _e	0.8982	5	Flash Point °C	
A* 151 to °C	1.8586	5	t _c			Fire Point	
B* 315 °C	1828.20	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHf			Solubility in +	
c			ΔFf			Acetone	
t _x to °C			Viscosity centistokes			Carbon tet.	
t _x to °C			η °C			Benzene	
A' to °C			B ^v to °C			Ether	
B' to °C			A ^v to °C			n-Heptane	
C' to °C			(B ^v) to °C			Ethanol	
A'*	to °C		(A ^v) to °C			Water	
B'*	to °C		c _p liq. °K			Water in	
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A°							
consts. B°							
t _e °C	294.66	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 11

NAME	1-Iodoundecane				STRUCTURAL FORMULA			
					$\text{CH}_2\text{I}(\text{CH}_2)_9\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{11}\text{H}_{23}\text{I}$	Molecular Weight 282.204					
		Ref.			Ref.			Ref.
F. P. °C	2.0	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C	2166.	5	g	°K	
B. P. °C			BP	0.0621	5	h		
760 mm	281.5	3	t _e	0.0370	5	f'	to	
100	202.0	5	30 mm	0.8939	5	g'	°K	
30	166.5	5	ΔHm cal/g			h'		
10	139.3	5				m	to	
1	94.0	5	ΔHv cal/g			n	°K	
Pressure mm 25°C			25°C	64.12	5	o		
t _e	1462.7	5	30 mm	50.74	5			
Density g/ml 20°C	1.2253	3	BP	41.89	5	m'	to	
t	1.2203	3	t _e	39.64	5	n'	°K	
d ₄ 30			t _e (d, e)	39.34	5	o'		
			ΔHv/T _e	19.04	5	Surface tension dynes/cm. 20°C		
a	1.2453	5	d 167 to	63.54	5	γ	30	22.73
b	-0.00100	5	e 335 °C	0.0769	5		40	22.00
Ref. Index			d' to			Parachor [P]		
n _D 20°C	1.4848	3	e' °C				20°C	
25	1.4827	3					30	
30			d _c g/ml				40	
"C"	0.5216	4	v _c ml/g				Sugd.	502.9
MR (Obs.)	65.985	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Calc.)	65.798	5	P _c mm			Dispersion		
Dielectric			PV/RT 25°C	0.9825	5	Flash Point °C		
A 167 to	7.1772	3	30 mm	1.0000	5	Fire Point		
B 345 °C	2006.28	3	BP	0.9192	5	M. Spec.		
C	185.5	3	t _e	0.8945	5	Ultra V.		
A* 167 to	1.9274	5	t _c			X-Ray Dif.		
B* 335 °C	1913.95	5	ΔHc kcal/m			Infrared		
K			ΔHf			Solubility in ⁺		
c			ΔFf			Acetone		
t _k to			Viscosity centistokes			Carbon tet.		
t _x °C			η °C			Benzene		
A' to						Ether		
B' °C			B ^v to			n-Heptane		
C' °C			A ^v °C			Ethanol		
A'* to			(B ^v) to			Water		
B'* °C			(A ^v) °C			Water in		
Ac to			c _p liq. °K					
Bc t _c °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	314.57	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Iodododecane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₁₀ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₂ H ₂₅ I	Molecular Weight	296.230		
		Ref.			Ref.		
F.P. °C	0.3	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C			h	
760 mm	298.2	3	BP	0.0632	5	f'	to
100	217.3	5	t _e	0.0368	5	g'	°K
30	181.0	5	30 mm	0.9143	5	h'	
10	153.1	5	ΔHm cal/g			m	to
1	106.7	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1503.4	5	30 mm	50.42	5	m'	to
Density g/ml 20°C	1.1999	3	BP	41.58	5	n'	°K
d ₄ ^t 25	1.1951	3	t _e (d, e)	39.19	5	o'	
d ₄ ^t 30			t _e	38.93	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	19.14	5	30	23.21
a	1.2191	5	d	181	to	40	22.48
b	-0.03960	5	e	353	°C		21.76
Ref. Index n _D 20°C	1.4840	3	d'		°C	Parachor [P] 20°C	
25	1.4819	3	e'			30	
30			d	g/ml		40	
"C"	0.5318	4	v	ml/g		Sugd.	541.9
MR (Obs.)	70.632	4	c	°C		Exp. L.l. %/wt. u.	
MR (Calc.) (nD-d/2)	70.416	5	P	mm		Dispersion	
Dielectric			PV/RT			Flash Point °C	
A	181	to	25°C			Fire Point	
B	363	°C	30 mm	1.0000	5	M Spec. Ultra V. X-Ray Dif. Infrared	
C	2089.47	3	BP	0.9182	5	Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
A*	181	to	t _e	0.8909	5		
B*	353	°C	t _c				
K	1996.66	5	ΔHc kcal/m				
c			ΔHf				
t _x			ΔFf				
t _x			Viscosity centistokes				
A'		to	γ	°C			
B'		°C					
C'			B ^v		to		
A*		to	A ^v		°C		
B*		°C	(B ^v)		to		
A ^c		to	(A ^v)		°C		
B ^c		°C	c _p liq.		*K		
C ^c			c _p vap.		*K		
Cryos. A ^c const. B ^c			c _v vap.				
t _e °C	333.37	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE IV. IODOALKANES

No. 13

NAME		1-Iodotridecane			STRUCTURAL FORMULA			
					$\text{CH}_2(\text{CH}_2)_{11}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{13}\text{H}_{27}\text{I}$	Molecular Weight	310.256			
		Ref.			Ref.			Ref.
F. P. °C	12.3	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C			g	°K	
B. P. °C			BP	0.0641	5	h		
760 mm	314.	3	t _e	0.0365	5	f'	to	
100	232.	5	t _e 30 mm	0.9335	5	g'	°K	
30	195.	5	ΔHm cal/g			h'		
10	167.	5	ΔHv cal/g			m	to	
1	119.	5	25°C			n	°K	
Pressure mm 25°C			30 mm	50.11	5	o		
t _e	1542.6	5	BP	41.52	5	m'	to	
Density g/ml 20°C			t _e	38.73	5	n'	°K	
25	1.1778	3	t _e (d, e)	38.81	5	o'		
d ^t 25	1.1731	3	ΔHv/T _e	19.23	5	Surface tension dynes/cm. 20°C		
d ^t 30						30	23.65	5
a	1.1966	5	d 195 to	64.19	5	40	22.90	5
b	-0.03940	5	e 372 °C	0.0722	5		22.17	5
Ref. Index			d' °C			Parachor [P]		
n _D 20°C	1.4833	3	e' °C			20°C		
25	1.4812	3				30		
30			d _c g/ml			40		
"C"	0.5411	4	v _c ml/g			Sugd.	580.9	5
MR (Obs.)	75.271	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Calc.)	75.034	5	P _c mm			Dispersion		
Dielectric			PV/RT			Flash Point °C		
A 195 to	7.277	3	25°C	1.0000	5	Fire Point		
B 382 °C	2169.2	3	30 mm	0.9237	5	M. Spec.		
C 179.		3	BP	0.8876	5	Ultra V.		
A* 195 to	2.054	5	t _e			X-Ray Dif.		
B* 372 °C	2076.1	5	t _c			Infrared		
K			ΔHc kcal/m			Solubility in ⁺		
c			ΔHf			Acetone		
t _k to			ΔFf			Carbon tet.		
t _x °C			Viscosity centistokes			Benzene		
			η °C			Ether		
A' to						n-Heptane		
B' °C			B ^v to			Ethanol		
C' °C			A ^v °C			Water		
A'* to			(B ^v) to			Water in		
B'* °C			(A ^v) °C					
Ac to			c _p liq. °K					
Bc t _c °C			c _p vap. °K					
Cc t _c °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	351.53	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Iodotetradecane		STRUCTURAL FORMULA	
				CH ₂ I(CH ₂) ₁₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₁₄ H ₂₉ I	Molecular Weight	324.282
F. P. °C	13.6	3	dt/dP °C/mm		
F. P. 100%			25°C		
B. P. °C			BP	0.0651	5
760 mm	329.	3	t _e	0.0363	5
100	246.	5	30 mm	0.9515	5
30	208.	5	ΔHm cal/g		
10	179.	5	ΔHv cal/g		
1	131.	5	25°C		
Pressure mm 25°C			30 mm	49.72	5
t _e	1579.1	5	BP	41.22	5
Density g/ml 20°C	1.1584	3	t _e	38.23	5
d ^t 25	1.1538	3	t _e (d, e)	38.44	5
d ₄ 30			ΔHv/T _e	19.32	5
a	1.1768	5	d 208 to	64.35	5
b	-0.03920	5	e 389 °C	0.0703	5
Ref. Index n _D 20°C	1.4827	3	e' to °C		
25	1.4806	3	d _c g/ml		
30			v _c ml/g		
"C"	0.5495	4	t _c °C		
MR (Obs.)	79.907	4	P _c mm		
MR (Calc.) (n _D -d/2)	79.652	5	PV/RT 25°C	1.0000	5
Dielectric			30 mm	0.9248	5
A 208 to	7.322	3	BP	0.8845	5
B 399 °C	2245.4	3	t _e		
C	176.	3	t _c		
A* 208 to	2.112	5	ΔHc kcal/m		
B* 389 °C	2152.0	5	ΔHf		
K			ΔFf		
c			Viscosity centistokes		
t _k to °C			η °C		
t _x to °C			B ^v to °C		
A' to °C			A ^v to °C		
B' to °C			(B ^v) to °C		
C' to °C			(A ^v) to °C		
A* to °C			c _p liq. °K		
B* to °C			c _p vap. °K		
Ac to °C			c _v vap.		
Bc to °C					
Cc to °C					
Cryos. A° const. B°					
t _e °C	368.53	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE IV. IODOALKANES

No. 15

NAME		1-Iodopentadecane			STRUCTURAL FORMULA	
					$\text{CH}_2(\text{CH}_2)_{13}\text{CH}_3$	
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{15}\text{H}_{31}\text{I}$	Molecular Weight	338.308	
F. P. °C	24.0	3				
F. P. 100%						
B. P. °C						
760 mm	344.	3		0.0660	5	
100	259.	5		0.0362	5	
30	220.	5		0.9697	5	
10	191.	5				
1	141.	5				
Pressure mm 25°C						
t_e	1612.3	5				
Density g/ml 20°C	1.1411 ^a	3				
d_4^{25}	1.1366	3				
d_4^{30}						
"a"	1.1591	5				
"b"	-0.03900	5				
Ref. Index n_D						
20°C	1.4822 ^a	3				
25	1.4801	3				
30						
"C"	0.5573	4				
MR (Obs.)	84.552	4				
MR (Calc.) (nD-d/2)	84.270	5				
Dielectric						
A 220 to	7.360	3				
B 414 °C	2318.3	3				
C — °C	174.	3				
A* 220 to	2.163	5				
B* 404 °C	2224.5	5				
K						
t_k — to						
t_x — to						
A' — to						
B' — °C						
C' — °C						
A'* to						
B'* °C						
Ac to						
Bc t_c °C						
Cc — °C						
Cryos. A°						
consts. B°						
t_g °C	384.28	5				
dt/dP °C/mm 25°C						
BP						
t_e						
30 mm						
ΔH_m cal/g						
ΔH_v cal/g 25°C						
30 mm	49.10	5				
BP	39.92	5				
t_e	37.60	5				
t_e (d, e)	36.94	5				
$\Delta H_v/T_e$	19.35	5				
d 220 to	65.40	5				
e 404 °C	0.0741	5				
d' — to						
e' — °C						
d _s g/ml						
v _s ml/g						
t_c °C						
P _c mm						
PV/RT 25°C						
30 mm	1.0000	5				
BP	0.9034	5				
t_e	0.8815	5				
t_c						
ΔH_c kcal/m						
ΔH_f						
ΔF_f						
Viscosity centistokes						
η °C						
B ^v — to						
A ^v — °C						
(B ^v) — to						
(A ^v) — °C						
c _p liq. °K						
c _p vap. °K						
c _v vap.						
f						
g						
h						
f'						
g'						
h'						
m						
n						
o						
m'						
n'						
o'						
Surface tension dynes/cm. 20°C						
γ						
30	24.40	5				
40	23.64	5				
40	22.89	5				
Parachor [P] 20°C						
30						
40						
Sugd.	658.9	5				
Exp. L. l. %/wt. u.						
Dispersion						
Flash Point °C						
Fire Point						
M. Spec. Ultra V.						
X-Ray Dif.						
Infrared						
Solubility in ⁺						
Acetone						
Carbon tet.						
Benzene						
Ether						
n-Heptane						
Ethanol						
Water						
Water in						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodohexadecane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₁₄ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₆ H ₃₃ I	Molecular Weight	352.334		
F. P. °C	24.7	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0668	5	h	
760 mm	357.	3	t _e	0.0360	5	f'	to
100	271.	5	30 mm	0.9851	5	g'	°K
30	232.	5	ΔHm cal/g			h'	
10	202.	5	ΔHv cal/g			m	to
1	152.	5	25°C			n	°K
Pressure mm 25°C			30 mm	48.70	5	o	
t _e	1644.9	5	BP	40.02	5	m'	to
Density g/ml 20°C	1.1257 ^a	3	t _e	37.12	5	n'	°K
d ^t 25	1.1213	3	t _e (d, e)	37.06	5	o'	
d ^t 30			ΔHv/T _e	19.44	5	Surface tension dynes/cm. 20°C	
a	1.1433	5	d 232 to	64.84	5	y	24.72
b	-0.03880	5	e 420 to	0.0695	5		23.96
Ref. Index			d' to				23.21
n _D 20°C	1.4818 ^a	3	e' °C			Parachor [P]	
25	1.4797	3				20°C	
30			d _c g/ml			30	
"C"	0.5645	4	t _c ml/g			40	
MR (Obs.)	89.199	4	°C			Sugd.	697.9
MR (Calc.)	88.888	5	P _c mm			Exp. L. l. %/wt. u.	
(n _D -d/2)			PV/RT			Dispersion	
Dielectric			25°C	1.0000	5	Flash Point °C	
A 232 to	7.401	3	30 mm	0.9154	5	Fire Point	
B 430 °C	2388.0	3	BP	0.8788	5	M Spec.	
C	171.	3	t _e			Ultra V.	
A* 232 to	2.217	5	t _c			X-Ray Dif.	
B* 420 °C	2294.3	5	ΔHc kcal/m			Infrared	
K			ΔHf			Solubility in ⁺	
c			ΔFf			Acetone	
t _k to			Viscosity centistokes			Carbon tet.	
t _x °C			η °C			Benzene	
A' to			B ^v to			Ether	
B' °C			A ^v °C			n-Heptane	
C'			(B ^v) to			Ethanol	
A'* to			(A ^v) °C			Water	
B'* °C			c _p liq. °K			Water in	
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
consts. B°							
t _e °C	399.63	5					

* For undercooled liquid below normal F. P. + grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 17

NAME		1-Iodoheptadecane			STRUCTURAL FORMULA		
					$\text{CH}_2(\text{CH}_2)_{15}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{17}\text{H}_{35}\text{I}$	Molecular Weight	366.360		
		Ref.			Ref.		
F. P. °C	33.7	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C			g	to °K
B. P. °C			BP	0.0676	5	h	to °K
760 mm	371.	3	t _e	0.0358	5	f'	to °K
100	283.	5	30 mm	1.0004	5	g'	to °K
30	244.	5	ΔHm cal/g			h'	to °K
10	213.	5	ΔHv cal/g			m	to °K
1	162.	5	25°C			n	to °K
Pressure mm 25°C			30 mm	48.29	5	o	to °K
t _e	1675.9	5	BP	39.20	5	m'	to °K
Density g/ml 20°C	1.1119 ^a	3	t _e	36.60	5	n'	to °K
d ^t 25	1.1076 ^a	3	t _e (d, e)	36.08	5	o'	to °K
d ^t 30			ΔHv/T _e	19.50	5	Surface tension dynes/cm. 20°C	
a	1.1291	5	d	244 to	65.73	5	25.02
b	-0.03860	5	e	435 °C	0.0715	5	30 24.25
Ref. Index			d'	to °C			40 23.51
n _D 20°C	1.4814 ^a	3	e'				
25	1.4794 ^a	3	d	g/ml			Parachor [P]
30			v _c	ml/g			20°C
"C"	0.5710	4	t _c	°C			30
MR (Obs.)	93.834	4	P _c	mm			40
MR (Calc.)	93.506	5	PV/RT				Sugd.
(n _D -d/2)			25°C				736.9
Dielectric			30 mm				
A	244 to	3	BP		1.0000	5	Exp. L. l. %/wt.
B	445 °C	3	t _e		0.9030	5	u.
C	168.	3	t _c		0.8758	5	Dispersion
A*	244 to	5	ΔHc kcal/m				Flash Point °C
B*	435 °C	5	ΔHf				Fire Point
K	2361.4		ΔFi				M. Spec.
c			Viscosity				Ultra V.
t _k	to °C		centistokes				X-Ray Dif.
t _x	to °C		η				Infrared
A'	to °C						Solubility in ⁺
B'	to °C						Acetone
C'	to °C						Carbon tet.
A'*	to °C						Benzene
B'*	to °C						Ether
Acl	to °C						n-Heptane
Bc	to °C						Ethanol
Cc	to °C						Water
Cryos. A*							Water in
consts. B*							
t _e °C	414.66	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodooctadecane			STRUCTURAL FORMULA		
					CH ₂ (CH ₂) ₁₆ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₁₈ H ₃₇ I	Molecular Weight	380.386		
F. P. °C	34.0	3					
F. P. 100%							
B. P. °C							
760 mm	383.	3		0.0684	5		
100	295.	5		0.0357	5		
30	254.	5		1.0156	5		
10	223.	5					
1	171.	5					
Pressure mm 25°C							
t _e	1704.0	5					
Density g/ml 20°C	1.0994 ^a	3					
d ^t 25	1.0952 ^a	3					
d ⁴ 30							
a	1.1162	5					
b	-0.03840	5					
Ref. Index n _D 20°C	1.4810 ^a	3					
25	1.4790 ^a	3					
30							
"C"	0.5771	4					
MR (Obs.)	98.464	4					
MR (Calc.) (n _D -d/2)	98.124	5					
Dielectric							
A 254 to	7.469	3					
B 458 °C	2518.7	3					
C	166.	3					
A* 254 to	2.311	5					
B* 448 °C	2425.6	5					
K							
c							
t _x to °C							
t _x to °C							
A' to °C							
B' to °C							
C' to °C							
A' * to °C							
B' * to °C							
Ac to °C							
Bc to °C							
Cc to °C							
Cryos. A° const. B°							
t _e °C	428.38	5					
dt/dP °C/mm 25°C							
BP							
t _e 30 mm							
ΔHm cal/g							
ΔHv cal/g 25°C							
30 mm BP							
t _e							
t _e (d, e)							
ΔHv/T _e							
d 254 to °C							
e 448 to °C							
d' to °C							
e' to °C							
d _v g/ml							
c _v ml/g							
t _c °C							
P _c mm							
PV/RT 25°C							
30 mm BP							
t _e							
t _c							
ΔHc kcal/m							
ΔHf							
ΔFf							
Viscosity centistokes							
η °C							
B ^v to °C							
A ^v to °C							
(B ^v) to °C							
(A ^v) to °C							
c _p liq. °K							
c _p vap. °K							
c _v vap.							
f to °K							
g to °K							
h to °K							
f' to °K							
g' to °K							
h' to °K							
m to °K							
n to °K							
o to °K							
m' to °K							
n' to °K							
o' to °K							
Surface tension dynes/cm. 20°C							
γ 30							
40							
Parachor [P] 20°C							
30							
40							
Sugd.							
Exp. L. l. %/wt. u. Dispersion							
Flash Point °C							
Fire Point							
M Spec. Ultra V. X-Ray Dif. Infrared							
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in							
a For undercooled liquid below normal F. P.							
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE IV. IODOALKANES

No. 19

NAME		1-Iodononadecane			STRUCTURAL FORMULA				
					$\text{CH}_2(\text{CH}_2)_{17}\text{CH}_3$				
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{19}\text{H}_{39}\text{I}$	Molecular Weight	394.412				
	Ref.								Ref.
F.P. °C	42.0	3							
F.P. 100%									
B.P. °C									
760 mm	395.	3		0.0692	5				
100	305.	5		0.0357	5				
30	265.	5		1.0305	5				
10	233.	5							
1	180.	5							
Pressure mm 25°C									
t_e	1731.9	5		47.11	5				
Density g/ml 20°C	1.0881 ^a	3		38.23	5				
t 25	1.0839 ^a	3		35.41	5				
d_4 30				35.04	5				
a	1.1049	5		19.53	5				
b	-0.03840	5							
Ref. Index n_D 20°C	1.4807 ^a	3							
25	1.4787 ^a	3							
30									
"C"	0.5827	4							
MR (Obs.)	103.100	4							
MR (Calc.) (nD-d/2)	102.742	5							
Dielectric									
A 265 to	7.498	3							
B 472 °C	2580.6	3							
C	164.	3							
A* 265 to	2.351	5							
B* 462 °C	2487.5	5							
K									
t_k to									
t_x to									
A' to									
B' to									
C' to									
A'* to									
B'* °C									
Ac to									
Bc to									
Cc to									
Cryos. A°									
const. B°									
t_e °C	441.85	5							

^aFor undercooled liquid below normal F.P.⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodoicosane			STRUCTURAL FORMULA					
					CH ₂ [(CH ₂) ₁₈ CH ₃]					
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₄₁ I	Molecular Weight	408.438					
		Ref.			Ref.					
F.P. °C	41.9	3	dt/dP °C/mm			f	to			
F.P. 100%			25°C			g	°K			
B.P. °C			BP		0.0700	5	h			
760 mm	407.	3	t _e		0.0356	5	f'			
100	316.	5	30 mm		1.0456	5	g'			
30	275.	5	ΔHm cal/g				h'			
10	243.	5	ΔHv cal/g				m			
1	189.	5	25°C				n			
Pressure mm 25°C			30 mm		46.54	5	o			
t _e	1758.7	5	BP		37.60	5	m'			
Density g/ml 20°C	1.0778 ^a	3	t _e		34.82	5	n'			
d ^t 25	1.0736 ^a	3	t _e (d, e)		34.34	5	o'			
d ⁴ 30			ΔHv/T _e		19.52	5				
a	1.0946	5	d 275 to		65.11	5	Surface tension dynes/cm. 20°C			
b	-0.03840	5	e 475 °C		0.0676	5	γ	25.78	5	
Ref. Index n _D 20°C	1.4805 ^a	3	d'				30	24.99	5	
25	1.4785 ^a	3	e'				40	24.21	5	
30										
"C"	0.5881	4	d _c g/ml				Parachor [P]			
MR (Obs.)	107.749	4	v _c ml/g				20°C			
MR (Calc.)	107.360	5	t _c °C				30			
Dielectric			P _c mm				40			
A 275 to	7.524	3					Sugd.		853.9	5
B 485 °C	2640.9	3	PV/RT				Exp. L. l. %/wt. u.			
C	162.	3	25°C				Dispersion			
A* 275 to	2.389	5	30 mm		1.0000	5	Flash Point °C			
B* 475 °C	2548.2	5	BP		0.8986	5	Fire Point			
K			t _e		0.8678	5	M Spec. Ultra V. X-Ray Dif. Infrared			
c			t _c				Solubility in +			
t _x			ΔHc kcal/m				Acetone			
t _x			ΔHf				Carbon tet.			
A'			ΔFf				Benzene			
B'			Viscosity centistokes				Ether			
C'			η °C				n-Heptane			
A'* to			B ^v				Ethanol			
B'* °C			A ^v				Water			
Ac			(B ^v)				Water in			
Bc			(A ^v)							
Cc			c _p liq. °K							
Cryos. A°			c _p vap. °K							
const. B°			c _v vap.							
t _e °C	455.20	5								

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 21

NAME		1-Iodoheneicosane			STRUCTURAL FORMULA	
					CH ₂ I(CH ₂) ₁₉ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula C ₂₁ H ₄₃ I	Molecular Weight 422.464			
		Ref.			Ref.	Ref.
F.P. °C	49.1	3	dt/dP °C/mm			f to °K
F.P. 100%			25°C			g to °K
B.P. °C			BP	0.0738	5	h
760 mm	418.	3	t _e	0.0373	5	f' to °K
100	323.	5	30 mm	1.0832	5	g' to °K
30	280.	5	ΔHm cal/g			h'
10	247.	5	ΔHv cal/g			m to °K
1	192.	5	25°C			n to °K
Pressure mm 25°C			30 mm	44.28	5	o
t _e	1784.4	5	BP	35.65	5	m' to °K
Density g/ml 20°C	1.0683 ^a	3	t _e	32.72	5	n' to °K
25	1.0642 ^a	3	t _e (d, e)	32.39	5	o'
d ₄ 30			ΔHv/T _e	18.59	5	Surface tension dynes/cm. 20°C
a	1.0847	5	d 280 to °C	61.79	5	25.99
b	-0.03820	5	e 490 to °C	0.0625	5	30 25.20
Ref. Index n _D 20°C	1.4802 ^a	3	d' to °C			40 24.43
25	1.4782 ^a	3	e'			Parachor [P] 20°C
30			d _c g/ml			30
"C"	0.5929	4	v _c ml/g			40
MR (Obs.)	112.380	4	t _c °C			Sugd. 892.9
MR (Calc.) (nD-d/2)	111.978	5	P _c mm			Exp. L.l./wt. u.
Dielectric			PV/RT 25°C			Dispersion
A 280 to °C	7.35811	5	30 mm	1.0000	5	Flash Point °C
B 500 °C	2587.9	5	BP	0.8997	5	Fire Point
C	160.	5	t _e	0.8628	5	M. Spec. Ultra V. X-Ray Dif. Infrared
A* 280 to °C	2.23324	5	t _c			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
B* 490 °C	2494.2	5	ΔHc kcal/m			
K			ΔHf			
t _k to °C			ΔFf			
t _x to °C			Viscosity centistokes η °C			
A' to °C			B ^v to °C			
B' to °C			A ^v to °C			
C' to °C			(B ^v) to °C			
A'* to °C			(A ^v) °C			
B'* to °C			c _p liq. °K			
Ac to °C			c _p vap. °K			
Bc to °C			c _v vap.			
Cc to °C						
Cryos. A ^a consts. B ^a						
t _e °C	470.17	5				

^aFor undercooled liquid below normal F.P.⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iododocosane		STRUCTURAL FORMULA		
				CH ₂ I(CH ₂) ₂₀ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂₂ H ₄₅ I	Molecular Weight	436.490	
		Ref.		Ref.	Ref.	
F. P. °C	48.8	3	dt/dP °C/mm		f to °K	
F. P. 100%			25°C		g °K	
B. P. °C			BP	0.0746	5	h °K
760 mm	428.	3	t _e	0.0374	5	f' to °K
100	332.	5	t _e 30 mm	1.0967	5	g' °K
30	288.	5	ΔHm cal/g			h' °K
10	255.	5	ΔHv cal/g			m to °K
1	199.	5	25°C			n °K
Pressure mm 25°C			30 mm	43.62	5	o °K
t _e	1807.2	5	BP	35.05	5	m' to °K
Density g/ml 20°C	1.0596 ^a	3	t _e	32.07	5	n' °K
d ₄ ^t 25	1.0555 ^a	3	t _e (d, e)	31.76	5	o' °K
d ₄ ^t 30			ΔHv/T _e	18.55	5	
a	1.0760	5	d 288 to °C	61.33	5	Surface tension dynes/cm. 20°C
b	-0.03820	5	e 502 to °C	0.0614	5	30 26.19 5
Ref. Index n _D 20°C	1.4800 ^a	3	d' to °C			40 25.39 5
25	1.4780 ^a	3	e' to °C			24.61 5
30			d v c g/ml			Parachor [P] 20°C
"C"	0.5976	4	v c ml/g			30
MR (Obs.)	117.023	4	t c °C			40
MR (Calc.)	116.596	5	P c mm			Sugd. 931.9 5
(n _D -d/2)			PV/RT 25°C			Exp. L. l. %/wt. u.
Dielectric			30 mm	1.0000	5	Dispersion
A 288 to °C	7.36980	5	BP	0.8983	5	Flash Point °C
B 512 to °C	2630.5	5	t _e	0.8606	5	Fire Point
C	158.	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared
A* 288 to °C	2.25619	5	ΔHf			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
B* 502 to °C	2537.1	5	ΔFf			
K			Viscosity centistokes			
t _x to °C			η °C			
t _x to °C			B ^v to °C			
A' to °C			A ^v to °C			
B' to °C			(B ^v) to °C			
C' to °C			(A ^v) to °C			
A ^{1*} to °C			c _p liq. °K			
B ^{1*} to °C			c _p vap. °K			
Ac to °C			c _v vap.			
Bc to °C						
Cc to °C						
Cryos. A ^o const. B ^o						
t _e °C	481.60	5				

^aFor undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 23

NAME		1-Iodotricosane			STRUCTURAL FORMULA	
					$\text{CH}_2\text{I}(\text{CH}_2)_{21}\text{CH}_3$	
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{23}\text{H}_{47}\text{I}$	Molecular Weight	450.516	
		Ref.			Ref.	Ref.
F. P. °C	55.2	3	dt/dP °C/mm			f to
F. P. 100%			25°C			g °K
B. P. °C			BP	0.0755	5	h
760 mm	439.	3	t _e	0.0374	5	f' to
100	342.	5	30 mm	1.1117	5	g' °K
30	298.	5	ΔHm cal/g			h'
10	264.	5				m to
1	207.	5				n °K
Pressure mm 25°C			ΔHv cal/g			o
t _e	1831.8	5	25°C			m' to
Density g/ml 20°C			30 mm	43.07	5	n' °K
d ₄ ^t	1.0516 ^a	3	BP	34.53	5	o'
25	1.0476 ^a	3	t _e	31.52	5	Surface tension dynes/cm. 20°C
30			t _e (d, e)	31.20	5	γ
			ΔHv/T _e	18.51	5	30
a	1.0676	5	d 298 to	61.03	5	40
b	-0.03800	5	e 514 °C	0.0603	5	26.38
Ref. Index			d' to			25.59
n _D 20°C	1.4798 ^a	3	e' °C			24.81
25	1.4778 ^a	3	d _c g/ml			Parachor [P]
30			v _c ml/g			20°C
"C"	0.6019	4	t _c °C			30
MR (Obs.)	121.659	4	P _c mm			40
MR (Calc.) (nD-d/2)	121.214	5	PV/RT 25°C			Sugd. 970.9
Dielectric			30 mm	1.0000	5	Exp. L. l. %/wt. u.
A 298 to	7.38393	5	BP	0.8967	5	Dispersion
B 524 °C	2679.4	5	t _e	0.8581	5	Flash Point °C
C	156.	5	t _c			Fire Point
A* 298 to	2.28107	5	ΔHc kcal/m			M. Spec. Ultra V. X-Ray Dif. Infrared
B* 514 °C	2586.3	5	ΔHf			Solubility in [†]
K			ΔFf			Acetone
c			Viscosity centistokes			Carbon tet.
t _k to			η °C			Benzene
t _x °C						Ether
A' to			B ^v to			n-Heptane
B' °C			A ^v °C			Ethanol
C'			(B ^v) to			Water
A'* to			(A ^v) °C			Water in
B'* °C			c _p liq. °K			
Ac to			c _p vap. °K			
Bc t _c °C			c _v vap.			
Cc °C						
Cryos. A°						
const. B°						
t _e °C	494.16	5				

^a For undercooled liquid below normal F. P.[†] grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodotetracosane		STRUCTURAL FORMULA	
				$\text{CH}_2\text{I}(\text{CH}_2)_{22}\text{CH}_3$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{24}\text{H}_{49}\text{I}$	Molecular Weight	464.542
		Ref.			Ref.
F. P. °C	54.7	3	dt/dP °C/mm		f to °K
F. P. 100%			25°C BP	0.0763	5
B. P. °C	449.	3	t _e	0.0374	5
760 mm	351.	5	30 mm	1.1252	5
100	306.	5	ΔHm cal/g		f' to °K
30	272.	5	ΔHv cal/g		h' to °K
10	214.	5	25°C		m to °K
1			30 mm	42.48	5
Pressure mm 25°C	1854.3	5	BP	33.99	5
t _e			t _e	30.94	5
Density g/ml 20°C	1.0442 ^a	3	t _e (d, e)	30.63	5
d ^t 25	1.0402 ^a	3	ΔHv/T _e	18.46	5
d ⁴ 30			d 306 to °C	60.64	5
a	1.0602	5	d' 526 to °C	0.0594	5
b	-0.03800	5	d' to °C		
Ref. Index n _D 20°C	1.4797 ^a	3	d _v g/ml		
25	1.4777 ^a	3	v _c ml/g		
30			t _c °C		
"C"	0.6060	4	P _c mm		
MR (Obs.)	126.313	4	PV/RT 25°C		
MR (Calc.)	125.832	5	30 mm	1.0000	5
(n _D -d/2)			BP	0.8953	5
Dielectric			t _e	0.8558	5
A 306 to °C	7.39507	5	t _c		
B 536 to °C	2722.1	5	ΔHc kcal/m		
C	154.	5	ΔHf		
A* 306 to °C	2.30280	5	ΔFf		
B* 526 to °C	2629.4	5	Viscosity centistokes		
K			η °C		
c			B ^v to °C		
t _x to °C			A ^v to °C		
t _x to °C			(B ^v) to °C		
A' to °C			(A ^v) to °C		
B' to °C			c _p liq. °K		
C' to °C			c _p vap. °K		
A' * to °C			c _v vap.		
B' * to °C					
Ac to °C					
Bc to °C					
Cc to °C					
Cryos. A' consts. B'					
t _e °C	505.60	5			

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 25

NAME		1-Iodopentacosane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₂₃ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂₅ H ₅₁ I	Molecular Weight	478.568		
F. P. °C	60.6	Ref.	3	dt/dP °C/mm		Ref.	
F. P. 100%				25°C			
B. P. °C				BP	0.1117	5	
760 mm	458.		3	t _e	0.0593	5	
100	324.		5	30 mm	1.3461	5	
30	269.		5	ΔHm cal/g			
10	229.		5	ΔHv cal/g			
1	165.		5	25°C			
Pressure mm 25°C				30 mm	30.18	5	
t _e	1870.9		5	BP	22.64	5	
Density g/ml 20°C				t _e	19.87	5	
d ₄ ²⁵	1.0373 ^a		3	t _e (d, e)	19.16	5	
d ₄ ³⁰	1.0333 ^a		3	ΔHv/T _e	11.61	5	
a	1.0533		5	d 269 to	40.90	5	
b	-0.03800		5	e 565 °C	0.0399	5	
Ref. Index				d'			
n _D 20°C	1.4795 ^a		3	e'			
25	1.4775 ^a		3	d _c g/ml			
30				v _c ml/g			
"C"	0.6098		4	t _c °C			
MR (Obs.)	130.945		4	P _c mm			
MR (Calc.) (nD-d/2)	130.450		5	PV/RT 25°C			
Dielectric				30 mm	1.0000	5	
A 269 to				BP	0.8774	5	
B 575 °C	6.00236		5	t _e	0.8215	5	
C	1904.1		5	t _c			
	152.		5	ΔHc kcal/m			
A* 269 to				ΔHf			
B* 565 °C	0.91721		5	ΔFf			
K	1804.7		5	Viscosity centistokes			
c				η °C			
t _k to							
t _x °C							
A' to				B ^v to			
B' °C				A ^v °C			
C'				(B ^v) to			
A'* to				(A ^v) °C			
B'* °C				c _p liq. °K			
Ac to				c _p vap. °K			
Bc t _c °C				c _v vap.			
Cc							
Cryos. A°							
const. B°							
t _e °C	545.41		5				

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodohexacosane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₂₄ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₆ H ₅₃ I	Molecular Weight	492.594		
F.P. °C	59.9	3		dt/dP °C/mm		f	to
F.P. 100%				25°C		g	°K
B.P. °C				BP	0.0778	h	
760 mm	467.	3		t _e	0.0375	f'	to
100	367.	5		30 mm	1.1491	g'	°K
30	321.	5		ΔHm cal/g		h'	
10	286.	5		ΔHv cal/g		m	to
1	227.	5		25°C		n	°K
Pressure mm 25°C				30 mm	41.30	o	
t _e	1894.2	5		BP	32.91	m'	to
Density g/ml 20°C	1.0309 ^a	3		t _e	29.80	n'	°K
d ^t 25	1.0270 ^a	3		t _e (d, e)	29.50	o'	
d ^t 30				ΔHv/T _e	18.36		
a	1.0465	5		d 321 to	59.76	Surface tension dynes/cm. 20°C	
b	-0.03780	5		e 246 °C	0.0575	γ	26.87
Ref. Index n _D 20°C	1.4794 ^a	3		d' to		30	26.07
25	1.4774 ^a	3		e' °C		40	25.28
30				d _c g/ml		Parachor [P]	
"C"	0.6135	4		v _c ml/g		20°C	
MR (Obs.)	135.596	4		t _c °C		30	
MR (Calc.)	135.068	5		P mm		40	
Dielectric				PV/RT 25°C	1.0000	Sugd.	1087.9
A 321 to	7.41146	5		30 mm	0.8927	Exp. L.l. %/wt. u.	
B 556 °C	2795.4	5		BP	0.8517	Dispersion	
C	150.	5		t _e		Flash Point °C	
A* 321 to	2.34028	5		t _c		Fire Point	
B* 546 °C	2703.6	5		ΔHc kcal/m		M Spec. Ultra V. X-Ray Dif. Infrared	
K				ΔHf		Solubility in +	
c				ΔFf		Acetone	
t _x to °C				Viscosity centistokes		Carbon tet.	
t _x °C				η °C		Benzene	
A' to °C				B ^v to °C		Ether	
B' to °C				A ^v to °C		n-Heptane	
C' to °C				(B ^v) to °C		Ethanol	
A* to °C				(A ^v) to °C		Water	
B* to °C				c _p liq. °K		Water in	
Ac to °C				c _p vap. °K			
Bc to °C				c _v vap.			
Cc to °C							
Cryos. A°							
consts. B°							
t _e °C	526.20	5					

^aFor undercooled liquid below normal F.P. ⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 27

NAME		1-Iodoheptacosane			STRUCTURAL FORMULA			
					$\text{CH}_2(\text{CH}_2)_{25}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{27}\text{H}_{55}\text{I}$	Molecular Weight	506.620			
	Ref.				Ref.			Ref.
F. P. °C	65.3	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C			g	°K	
B. P. °C			BP	0.0786	5	h		
760 mm	476.	3	t _e	0.0375	5	f'	to	
100	375.	5	30 mm	1.1619	5	g'	°K	
30	329.	5	ΔHm cal/g			h'		
10	293.	5				m	to	
1	234.	5	ΔHv cal/g			n	°K	
Pressure mm 25°C			30 mm	40.72	5	o		
t _e	1913.9	5	BP	32.40	5	m'	to	
Density g/ml 20°C	1.0249 ^a	3	t _e (d, e)	29.27	5	n'	°K	
t	1.0210 ^a	3	ΔHv/T _e	18.32	5	o'		
d ₄ 30						Surface tension dynes/cm. 20°C		
a	1.0405	5	d 329 to	59.25	5	γ	27.01	5
b	-0.03780	5	e 556	0.0564	5		30	26.20
Ref. Index			d'				40	25.40
n _D 20°C	1.4793 ^a	3	e'			Parachor [F]		
25	1.4773 ^a	3	d _c g/ml			20°C		
30			v _c ml/g			30		
"C"	0.6170	4	t _c °C			40		
MR (Obs.)	140.248	4	P _c mm			Sugd.	1126.9	5
MR (Calc.)	139.686	5	PV/RT 25°C	1.0000	5	Exp. L. l. %/wt. u.		
(nD-d/2)			30 mm	0.8913	5	Dispersion		
Dielectric			BP	0.8496	5	Flash Point °C		
A 329 to	7.42699	5	t _e			Fire Point		
B 566 °C	2841.4	5	t _c			M. Spec.		
C	149.	5	ΔHc kcal/m			Ultra V.		
A* 329 to	2.36571	5	ΔHf			X-Ray Dif.		
B* 556 °C	2749.8	5	ΔFf			Infrared		
K			Viscosity centistokes			Solubility in ⁺		
t _k to			η °C			Acetone		
t _x °C						Carbon tet.		
A' to			B ^v to			Benzene		
B' °C			A ^v °C			Ether		
C' °C			(B ^v) to			n-Heptane		
A'* to			(A ^v) °C			Ethanol		
B'* °C			c _p liq. °K			Water		
Ac to			c _p vap. °K			Water in		
Bc °C			c _v vap.					
Cc t _c °C								
Cryos. A°								
const. B°								
t _e °C	536.48	5						

^aFor undercooled liquid below normal F.P. ⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodooctacosane			STRUCTURAL FORMULA		
					CH ₂ (CH ₂) ₂₆ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₈ H ₅₇ I	Molecular Weight	520.646		
		Ref.			Ref.		
F.P. °C	64.6	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0793	5	h	
760 mm	485.	3	t _e	0.0376	5	f'	to
100	383.	5	t _e (d, e)			g'	°K
30	336.	5	ΔHm cal/g			h'	
10	300.	5	ΔHv cal/g			m	to
1	240.	5	25°C			n	°K
Pressure mm 25°C			30 mm	40.21	5	o	
t _e	1933.2	5	BP	31.92	5	m'	to
Density g/ml 20°C	1.0194 ^a	3	t _e	28.75	5	n'	°K
d ^t 25	1.0155 ^a	3	ΔHv/T _e	18.26	5	o'	
d ^t 30			d 336 to	58.91	5	Surface tension dynes/cm. 20°C	
a	1.0350	5	e 567 °C	0.0557	5	30	27.16
b	-0.03780	5	d'			40	26.33
Ref. Index n _D 20°C	1.4791 ^a	3	e'			40	25.53
25	1.4771 ^a	3	d _c g/ml			Parachor [P]	
30			v _c ml/g			20°C	
"C"	0.6200	4	t _c °C			30	
MR (Obs.)	144.857	4	P mm			40	
MR (Calc.) (nD-d/2)	144.304	5	PV/RT 25°C			Sugd.	1165.9
Dielectric			30 mm	1.0000	5	Exp. L. l. %/wt. u.	
A 336 to	7.43473	5	BP	0.8899	5	Dispersion	
B 577 °C	2878.1	5	t _e	0.8474	5	Flash Point °C	
C	147.	5	t _c			Fire Point	
A* 336 to	2.38355	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 567 °C	2787.3	5	ΔHf			Solubility in +	
K			ΔFf			Acetone	
c			Viscosity centistokes			Carbon tet.	
t _k to			η °C			Benzene	
t _x °C						Ether	
A' to			B ^v to			n-Heptane	
B' °C			A ^v °C			Ethanol	
C'			(B ^v) to			Water	
A [*] to			(A ^v) °C			Water in	
B [*] °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A [*] const. B [*]							
t _e °C	546.77	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 29

NAME		1-Iodononacosane			STRUCTURAL FORMULA	
					$\text{CH}_2(\text{CH}_2)_{27}\text{CH}_3$	
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{29}\text{H}_{59}\text{I}$	Molecular Weight	534.672	
F. P. °C	69.5	3				
F. P. 100%						
B. P. °C						
760 mm	493.	3		0.0800	5	
100	390.	5		0.0376	5	
30	343.	5		1.1843	5	
10	307.	5				
1	246.	5				
Pressure mm 25°C						
t_e	1950.5	5				
Density g/ml 20°C						
d_4^{25}	1.0141 ^a	3				
d_4^{30}	1.0103 ^a	3				
a	1.0293	5				
b	-0.03760	5				
Ref. Index n_D^{20}						
25	1.4790 ^a	3				
30	1.4771 ^a	3				
"C"	0.6232	4				
MR (Obs.)	149.510	4				
MR (Calc.) (nD-d/2)	148.922	5				
Dielectric						
A 343 to	7.43984	5				
B 586 °C	2908.7	5				
C	145.	5				
A* 343 to	2.39862	5				
B* 576 °C	2818.5	5				
K						
c						
t_k to						
t_x °C						
A' to						
B' °C						
C'						
A'* to						
B'* °C						
Ac to						
Bc °C						
Cc t_c -						
Cryos. A°						
consts. B°						
t_g °C	555.93	5				
dt/dP °C/mm 25°C						
BP						
t_e						
30 mm						
ΔH_m cal/g						
ΔH_v cal/g 25°C						
30 mm						
BP	39.67	5				
t_e	31.43	5				
t_e (d, e)	28.24	5				
t_e	27.98	5				
$\Delta H_v/T_e$	18.21	5				
d 343 to	58.48	5				
e 576 °C	0.0549	5				
d' to						
e' °C						
d _c g/ml						
v _c ml/g						
t_c °C						
P _c mm						
PV/RT 25°C						
30 mm						
BP	1.0000	5				
t_e	0.8887	5				
t_c	0.8456	5				
ΔH_c kcal/m						
ΔH_f						
ΔF_f						
Viscosity centistokes η						
t_c °C						
B ^v to						
A ^v °C						
(B ^v) to						
(A ^v) °C						
c _p liq. °K						
c _p vap. °K						
c _v vap.						
f to						
g °K						
h						
f' to						
g' °K						
h'						
m to						
n °K						
o						
m' to						
n' °K						
o'						
Surface tension dynes/cm. 20°C						
γ 30	27.28	5				
40	26.47	5				
40	25.68	5				
Parachor [P] 20°C						
30						
40						
Sugd.	1204.9	5				
Exp. L. l. %/wt. u.						
Dispersion						
Flash Point °C						
Fire Point						
M. Spec. Ultra V. X-Ray Dif. Infrared						
Solubility in ⁺						
Acetone						
Carbon tet.						
Benzene						
Ether						
n-Heptane						
Ethanol						
Water						
Water in						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodotriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{I}(\text{CH}_2)_{28}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{30}\text{H}_{61}\text{I}$	Molecular Weight	548.698		
F. P. °C	68.7	Ref.					
F. P. 100%							
B. P. °C							
760 mm	501.	3		dt/dP °C/mm 25°C		f	to
100	397.	5		BP	0.0806	g	°K
30	349.	5		t_e	0.0376	h	
10	313.	5		30 mm	1.1956	f'	to
1	252.	5		$\Delta\text{Hm cal/g}$		g'	°K
						h'	
Pressure mm 25°C				$\Delta\text{Hv cal/g}$		m	to
t_e	1967.9	5		25°C		n	°K
				30 mm	39.12	o	
Density g/ml 20°C				BP	30.96	m'	to
d_4^{25}	1.0092 ^a	3		t_e	27.75	n'	°K
d_4^{30}	1.0054 ^a	3		t_e (d, e)	27.50	o'	
				$\Delta\text{Hv}/T_e$	18.16		
a	1.0244	5		d 349 to °C	57.96		
b	-0.03760	5		e 585 to °C	0.0539		Surface tension dynes/cm. 20°C
Ref. Index n_D^{20}				d' to °C			30
25	1.4789 ^a	3		e' to °C			40
30	1.4770 ^a	3					27.40
"C"	0.6261	4					26.58
MR (Obs.)	154.149	4		d c g/ml			25.78
MR (Calc.)	153.540	5		v_c ml/g			
($n_D-d/2$)				t_c °C			
Dielectric				P c mm			Parachor [P]
A 349 to	7.45223	5		PV/RT			20°C
B 595 °C	2948.6	5		25°C	1.0000		30
C	144.	5		30 mm	0.8875		40
A* 349 to	2.42029	5		BP	0.8438		Sugd. 1243.9
B* 585 °C	2858.7	5		t_e			
K				t_c			
c				$\Delta\text{Hc kcal/m}$			
t_k to °C				ΔHf			
t_x to °C				ΔFf			
A' to °C				Viscosity centistokes			
B' to °C				η °C			
C' to °C							
A'* to °C				B ^v to °C			
B'* to °C				A ^v to °C			
Ac to °C				(B ^v) to °C			
Bc to °C				(A ^v) to °C			
Cc to °C				c_p liq. °K			
Cryos. A° const. B°				c_p vap. °K			
t_e °C	565.09	5		c_v vap.			

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 31

NAME		1-Iodohentriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{I}(\text{CH}_2)_{29}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{31}\text{H}_{63}\text{I}$	Molecular Weight	562.724		
F. P. °C	73.3	Ref.	3	dt/dP °C/mm		f	to
F. P. 100%				25°C		g	°K
B. P. °C				BP	0.0813	h	
760 mm	509.		3	t_e	0.0377	f'	to
100	404.		5	30 mm	1.2060	g'	°K
30	356.		5			h'	
10	319.		5	ΔHm cal/g		m	to
1	258.		5			n	°K
Pressure mm 25°C				ΔHv cal/g		o	
t_e	1985.0		5	25°C			
Density g/ml 20°C				30 mm	38.64		
d_4^{25}	1.0046 ^a		3	BP	30.50		
	1.0008 ^a		3	t_e	27.26	m'	to
				t_e (d, e)	27.03	n'	°K
				$\Delta\text{Hv}/T_e$	18.11	o'	
a	1.0198		5	d 356 to	57.60	Surface tension dynes/cm. 20°C	
b	-0.03760		5	e 594 °C	0.0532	γ	27.51
Ref. Index				d' to			30
n_D^{20}	1.4788 ^a		3	e' °C			40
25	1.4769 ^a		3	d		Parachor [P]	
30				d_c g/ml			20°C
"C"	0.6288		4	v_c ml/g			30
MR (Obs.)	158.785		4	t_c °C			40
MR (Calc.)	158.158		5	P_c mm			Sugd. 1282.9
Dielectric				PV/RT			
A 356 to	7.45711		5	25°C			Exp. L. l. %/wt.
B 604 °C	2979.2		5	30 mm	1.0000		u.
C	142.		5	BP	0.8863		Dispersion
A* 356 to	2.43464		5	t_e	0.8419		Flash Point °C
B* 594 °C	2890.0		5	t_c			Fire Point
K				ΔHc kcal/m			M. Spec.
t_k to				ΔHf			Ultra V.
t_x °C				ΔFf			X-Ray Dif.
A' to				Viscosity			Infrared
B' °C				centistokes			Solubility in *
C' °C				η			Acetone
A'* to							Carbon tet.
B'* °C				B^v to			Benzene
				A^v °C			Ether
				(B^v) to			n-Heptane
				(A^v) °C			Ethanol
Ac to				c_p liq. °K			Water
Bc t_c °C				c_p vap. °K			Water in
Cc °C				c_v vap.			
Cryos. A°							
consts. B°							
t_e °C	574.26		5				

^a For undercooled liquid below normal F. P.

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iododotriacontane		STRUCTURAL FORMULA	
				CH ₂ I(CH ₂) ₃₀ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₃₂ H ₆₅ I	Molecular Weight	576.750
		Ref.			Ref.
F. P. °C	72.4	3	dt/dP °C/mm		
F. P. 100%			25°C		f to °K
B. P. °C			BP	0.0819	5
760 mm	516.	3	t _e	0.0377	5
100	410.	5	30 mm	1.2158	5
30	362.	5	ΔHm cal/g		
10	325.	5	ΔHv cal/g		
1	263.	5	25°C		m to °K
Pressure mm 25°C			30 mm	38.09	5
t _e	2000.4	5	BP	30.04	5
Density g/ml 20°C	1.0003 ^a	3	t _e	26.78	5
d ₄ ^t 25	0.9965 ^a	3	t _e (d, e)	26.57	5
d ₄ ^t 30			ΔHv/T _e	18.06	5
a	1.0155	5	d 362 to °C	57.03	5
b	-0.03760	5	e 602 to °C	0.0523	5
Ref. Index n _D 20°C	1.4787 ^a	3	d' to °C		
25	1.4768 ^a	3	e' to °C		
30			d v c g/ml		
"C"	0.6314	4	v c ml/g		
MR (Obs.)	163.414	4	t _c °C		
MR (Calc.) (nD-d/2)	162.776	5	P _c mm		
Dielectric			PV/RT 25°C		
A 362 to °C	7.46675	5	30 mm	1.0000	5
B 612 °C	3013.0	5	BP	0.8854	5
C	141.	5	t _e	0.8405	5
A* 362 to °C	2.45321	5	t _c		
B* 602 °C	2924.1	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to °C			Viscosity centistokes		
t _x to °C			η °C		
A' to °C			B ^v to °C		
B' to °C			A ^v to °C		
C'			(B ^v) to °C		
A' * to °C			(A ^v) to °C		
B' * to °C			c _p liq. °K		
Ac to °C			c _p vap. °K		
Bc to °C			c _v vap.		
Cc to °C					
Cryos. A* consts. B*					
t _e °C	582.29	5			

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 33

NAME		1-Iodotritriacontane			STRUCTURAL FORMULA			
					$\text{CH}_2(\text{CH}_2)_{31}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{33}\text{H}_{67}\text{I}$	Molecular Weight 590.776					
		Ref.			Ref.			Ref.
F. P. °C	76.7	3	dt/dP			f	to	
F. P. 100%			°C/mm			g	°K	
B. P. °C			25°C			h		
760 mm	524.	3	BP	0.0825	5	f'	to	
100	417.	5	t _e	0.0377	5	g'	°K	
30	369.	5	30 mm	1.2262	5	h'		
10	331.	5	ΔHm cal/g			m	to	
1	268.	5				n	°K	
Pressure mm 25°C			ΔHv cal/g			o		
t _e	2017.3	5	25°C			m'	to	
Density g/ml 20°C	0.9962 ^a	3	30 mm	37.65	5	n'	°K	
t	0.9924 ^a	3	BP	29.62	5	o'		
d ₄ 30			t _e (d, e)	26.33	5	Surface tension dynes/cm. 20°C		
a	1.0114	5	ΔHv/T _e	17.99	5	γ	30	27.73
b	-0.03760	5	d 369 to	56.73	5	40	26.90	5
Ref. Index n _D 20°C	1.4786 ^a	3	e 611 °C	0.0517	5		26.08	5
25	1.4767 ^a	3	d'			Parachor [F]		
30			e'			20°C		
"C"	0.6339	4	d _c g/ml			30		
MR (Obs.)	168.047	4	v _c ml/g			40		
MR (Calc.)	167.374	5	t _c °C			Sugd.	1360.9	5
(n _D -d/2)			P _c mm			Exp. L. l. %/wt. u.		
Dielectric			PV/RT 25°C			Dispersion		
A 369 to	7.47144	5	30 mm	1.0000	5	Flash Point °C		
B 621 °C	3043.6	5	BP	0.8842	5	Fire Point		
C	139.	5	t _e	0.8386	5	M. Spec. Ultra V. X-Ray Dif. Infrared		
A* 369 to	2.46693	5	t _c			Solubility in ⁺		
B* 611 °C	2955.5	5	ΔHc kcal/m			Acetone		
K			ΔHf			Carbon tet.		
c			ΔFf			Benzene		
t _k to			Viscosity centistokes η °C			Ether		
t _x to						n-Heptane		
A' to						Ethanol		
B' to			B ^v to			Water		
C' to			A ^v to			Water in		
A'* to			(B ^v) to					
B'* °C			(A ^v) °C					
Ac to			c _p liq. °K					
Bc to			c _p vap. °K					
Cc to			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	591.46	5						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodotettratriacontane			STRUCTURAL FORMULA	
					CH ₂ I(CH ₂) ₃₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₃₄ H ₆₉ I	Molecular Weight	604.802	
		Ref.			Ref.	Ref.
F.P. °C	75.8	3	dt/dP °C/mm			f to °K
F.P. 100%			25°C			g to °K
B.P. °C			BP	0.0831	5	h to °K
760 mm	531.	3	t _e	0.0378	5	f' to °K
100	423.	5	t _e (d, e)			g' to °K
30	375.	5	ΔHm cal/g			h' to °K
10	337.	5	ΔHv cal/g			m to °K
1	273.	5	25°C			n to °K
Pressure mm 25°C			30 mm	37.16	5	o to °K
t _e	2032.5	5	BP	29.20	5	m' to °K
Density g/ml 20°C	0.9923 ^a	3	t _e	25.89	5	n' to °K
d _t 25	0.9885 ^a	3	t _e	25.71	5	o' to °K
d ₄ 30			ΔHv/T _e	17.94	5	
a	1.0075	5	d 375 to °C	56.22	5	Surface tension dynes/cm. 20°C
b	-0.03760	5	e 619 to °C	0.0509	5	30 27.83 5
Ref. Index ⁿ _D 20°C	1.4786 ^a	3	e' to °C			40 26.99 5
25	1.4766 ^a	3	d _v g/ml			Parachor [P] 20°C
30			v _c ml/g			30
"C"	0.6364	4	t _c °C			40
MR (Obs.)	172.712	4	P _c mm			Sugd. 1399.9 5
MR (Calc.) (n _D -d/2)	172.012	5	PV/RT 25°C			Exp. L. l. %/wt. u.
Dielectric			30 mm	1.0000	5	Dispersion
A 375 to °C	7.48084	5	BP	0.8833	5	Flash Point °C
B 629 °C	3077.4	5	t _e	0.8371	5	Fire Point
C	138.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared
A* 375 to °C	2.48484	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
B* 619 °C	2989.6	5	ΔHf			
K			ΔFf			
c to °C			Viscosity centistokes °C			
t _k to °C						
t _x to °C						
A' to °C			B ^v to °C			
B' to °C			A ^v to °C			
C' to °C			(B ^v) to °C			
A' * to °C			(A ^v) to °C			
B' * to °C			c _p liq. °K			
Ac to °C			c _p vap. °K			
Bc to °C			c _v vap.			
Cc to °C						
Cryos. A ^a const. B ^a						
t _e °C	599.49	5				

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 35

NAME		1-Iodopentatriacontane			STRUCTURAL FORMULA		
					$\text{CH}_2\text{I}(\text{CH}_2)_{33}\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{35}\text{H}_{71}\text{I}$	Molecular Weight 618.828				
		Ref.			Ref.	Ref.	
F. P. °C	79.7	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°	
B. P. °C			BP	0.0837	5	h	
760 mm	538.	3	t _e	0.0378	5	f'	to
100	430.	5	30 mm	1.2457	5	g'	°
30	380.	5	ΔHm cal/g			h'	
10	342.	5					
1	278.	5	ΔHv cal/g			m	to
Pressure mm 25°C			25°C			n	°K
t _e	2046.9	5	30 mm	36.68	5	o	
Density g/ml 20°C	0.9886 ^a	3	BP	28.79	5	m'	to
d ^t 25	0.9849 ^a	3	t _e	25.48	5	n'	°K
d ^t 30			t _e (d, e)	25.31	5	o'	
			ΔHv/T _e	17.90	5		
a	1.0034	5	d 380 to	55.74	5	Surface tension dynes/cm. 20°C	
b	-0.03740	5	e 628 °C	0.0501	5	γ	27.92
Ref. Index			d' to			30	27.09
n _D 20°C	1.4785 ^a	3	e' °C			40	26.29
25	1.4765 ^a	3					
30			d _c g/ml			Parachor [P]	
"C"	0.6386	4	v _c ml/g			20°C	
MR (Obs.)	177.347	4	t _c °C			30	
MR (Calc.)	176.630	5	P _c mm			40	
Dielectric			PV/RT			Sugd.	1438.9
A 380 to	7.49011	5	25°C			Exp. L. l. %/wt. u.	
B 638 °C	3111.3	5	30 mm	1.0000	5	Dispersion	
C 137.		5	BP	0.8821	5	Flash Point °C	
A* 380 to	2.50294	5	t _e	0.8354	5	Fire Point	
B* 628 °C	3024.1	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in ⁺	
c			ΔHf			Acetone	
t _k to			ΔFf			Carbon tet.	
t _x °C			Viscosity centistokes η			Benzene	
A' to						Ether	
B' °C			B ^v to			n-Heptane	
C' °C			A ^v °C			Ethanol	
A'* to			(B ^v)			Water	
B'* °C			(A ^v)			Water in	
Ac to			c _p liq. °				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	607.50	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodohexatriacontane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₃₄ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₆ H ₇₃ I	Molecular Weight	632.854		
		Ref.			Ref.		
F. P. °C	78.8	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C			g	
B. P. °C			BP	0.0842	5	h	
760 mm	544.	3	t _e	0.0378	5	f'	to °K
100	435.	5	30 mm	1.2539	5	g'	
30	385.	5	ΔHm cal/g			h'	
10	347.	5	ΔHv cal/g			m	to °K
1	283.	5	25°C			n	
Pressure mm 25°C			30 mm	36.18	5	o	
t _e	2059.3	5	BP	28.35	5	m'	to °K
Density g/ml 20°C	0.9851 ^a	3	t _e	25.03	5	n'	
d ₄ ^t 25	0.9814 ^a	3	t _e (d, e)	24.88	5	o'	
d ₄ ^t 30			ΔHv/T _e	17.85	5	Surface tension dynes/cm. 20°C	
a	0.9999	5	d 385 to	55.21	5	30	28.01
b	-0.03740	5	e 634 °C	0.0494	5	40	27.18
Ref. Index n _D 20°C	1.4785 ^a	3	d'			40	26.36
25	1.4765 ^a	3	e'			Parachor [P] 20°C	
30			d _v g/ml			30	
"C"	0.6409	4	v _c ml/g			40	
MR (Obs.)	182.012	4	t _c °C			Sugd.	1477.9
MR (Calc.) (nD-d/2)	181.248	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 385 to	7.49695	5	30 mm	1.0000	5	Flash Point °C	
B 644 °C	3139.0	5	BP	0.8812	5	Fire Point	
C	136.	5	t _e	0.8340	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 385 to	2.51849	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 634 °C	3052.3	5	ΔHc kcal/m				
K			ΔHf				
c			ΔFf				
t _x to °C			Viscosity centistokes				
t _x °C			η °C				
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C' to °C			(B ^v) to °C				
A'* to °C			(A ^v) °C				
B'* to °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A' consts. B'							
t _e °C	614.37	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 37

NAME		1-Iodoheptatriacontane			STRUCTURAL FORMULA		
					CH ₂ I(CH ₂) ₃₅ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₇ H ₇₅ I	Molecular Weight	646.880		
		Ref.			Ref.		
F. P. °C	82.5	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0848	5	h	
760 mm	551.	3	t _e	0.0379	5	f'	to
100	441.	5	30 mm	1.2629	5	g'	°K
30	391.	5	ΔH _m cal/g			h'	
10	353.	5				m	to
1	288.	5	ΔH _v cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	2074.2	5	30 mm	35.78	5	m'	to
Density g/ml 20°C			BP	27.98	5	n'	°K
25	0.9818 ^a	3	t _e	24.63	5	o'	
d ₄ ^t	0.9781 ^a	3	t _e (d, e)	24.49	5	Surface tension dynes/cm. 20°C	
			ΔH _v /T _e	17.79	5	30	28.09
a	0.9966	5	d 391 to	54.90	5	40	27.26
b	-0.03740	5	e 642	0.0489	5	40	26.44
Ref. Index			d' to			Parachor [P]	
n _D 20°C	1.4784 ^a	3	e' °C			20°C	
25	1.4764 ^a	3				30	
30			d _c g/ml			40	
"C"	0.6429	4	v _c ml/g			Sugd.	1516.9
MR (Obs.)	186.637	4	t _c °C			Exp. L. l. %/wt.	
MR (Calc.)	185.866	5	P _c mm			u.	
Dielectric			PV/RT 25°C	1.0000	5	Dispersion	
A 391 to	7.49898	5	30 mm	0.8802	5	Flash Point °C	
B 652 °C	3163.5	5	BP	0.8324	5	Fire Point	
C	134.	5	t _e			M. Spec.	
A* 391 to	2.52885	5	t _c			Ultra V.	
B* 642 °C	3077.5	5	ΔH _c kcal/m			X-Ray Dif.	
K			ΔH _f			Infrared	
t _k to			ΔF _f			Solubility in ⁺	
t _x °C			Viscosity centistokes			Acetone	
A' to			η °C			Carbon tet.	
B' °C			B ^v to			Benzene	
C' °C			A ^v °C			Ether	
A'* to			(B ^v) to			n-Heptane	
B'* °C			(A ^v) °C			Ethanol	
Ac to			c _p liq. °K			Water	
Bc t _c °C			c _p vap. °K			Water in	
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	622.42	5					

^aFor undercooled liquid below normal F. P. ⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Iodooctatriacontane			STRUCTURAL FORMULA		
					CH ₂ (CH ₂) ₃₆ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₈ H ₇₇ I	Molecular Weight	660.906		
		Ref.			Ref.		
F.P. °C	81.6	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0853	5	h	
760 mm	557.	3	t _e	0.0379	5	f'	to
100	447.	5	30 mm	1.2711	5	g'	°K
30	396.	5	ΔHm cal/g			h'	
10	358.	5	ΔHv cal/g			m	to
1	292.	5	25°C			n	°K
Pressure mm 25°C			30 mm	35.32	5	o	
t _e	2086.5	5	BP	27.58	5	m'	to
Density g/ml 20°C	0.9787 ^a	3	t _e (d, e)	24.21	5	n'	°K
d ₄ ^t 25	0.9750 ^a	3	ΔHv/T _e	24.09	5	o'	
d ₄ ^t 30				17.73	5		
a	0.9935	5	d 396 to	54.42	5	Surface tension dynes/cm. 20°C	
b	-0.03740	5	e 649 °C	0.0482	5	γ	28.18
Ref. Index n _D 20°C	1.4784 ^a	3	d' to			30	27.34
25	1.4764 ^a	3	e' °C			40	26.52
30							
"C"	0.6449	4	d _c g/ml			Parachor [P]	
MR (Obs.)	191.288	4	v _c ml/g			20°C	
MR (Calc.) (nD-d/2)	190.484	5	t _c °C			30	
Dielectric			P _c mm			40	
A 396 to	7.50568	5	PV/RT 25°C	1.0000	5	Sugd.	1555.9
B 652 °C	3191.2	5	30 mm	0.8793	5	Exp. L.l. %/wt. u.	
C	133.	5	BP	0.8310	5	Dispersion	
A* 396 to	2.54389	5	t _e			Flash Point °C	
B* 649 °C	3105.8	5	t _c			Fire Point	
K			ΔHc kcal/m			M Spec.	
c			ΔHf			Ultra V.	
t _k to			ΔFf			X-Ray Dif.	
t _x °C			Viscosity centistokes			Infrared	
A' to			η °C			Solubility in +	
B' °C			B ^v to			Acetone	
C'			A ^v °C			Carbon tet.	
A'* to			(B ^v) to			Benzene	
B'* °C			(A ^v) °C			Ether	
Ac to			c _p liq. °K			n-Heptane	
Bc °C			c _p vap. °K			Ethanol	
Cc °C			c _v vap.			Water	
Cryos. A° const. B°						Water in	
t _e °C	629.29	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE IV. IODOALKANES

No. 39

NAME		1-Iodononatriacontane			STRUCTURAL FORMULA			
					$\text{CH}_2\text{I}(\text{CH}_2)_{37}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{39}\text{H}_{79}\text{I}$	Molecular Weight 674.932					
F. P. °C	85.0	3	dt/dP °C/mm		Ref.	f	to	Ref.
F. P. 100%			25°C			g	°K	
B. P. °C			BP	0.0857	5	h		
760 mm	563.	3	t_e	0.0379	5	f'	to	
100	452.	5	30 mm	1.2793	5	g'	°K	
30	401.	5				h'		
10	362.	5	$\Delta\text{Hm cal/g}$			m	to	
1	296.	5				n	°K	
Pressure mm 25°C			$\Delta\text{Hv cal/g}$			o		
t_e	2099.6	5	25°C					
Density g/ml 20°C			30 mm	34.88	5			
t			BP	27.20	5			
d^t	0.9757 ^a	3	t_e	23.82	5	m'	to	
d^t	0.9720 ^a	3	t_e (d, e)	23.72	5	n'	°K	
			$\Delta\text{Hv}/T_e$	17.68	5	o'		
a	0.9905	5	d 401 to	53.94	5	Surface tension dynes/cm. 20°C		
b	-0.03740	5	e 656 °C	0.0475	5	30	28.26	5
Ref. Index			e' to °C			40	27.41	5
n_D 20°C	1.4783 ^a	3					26.58	5
25	1.4763 ^a	3	d_c g/ml			Parachor [P]		
30			v_c ml/g			20°C		
"C"	0.6468	4	t_c °C			30		
MR (Obs.)	195.913	4	P_c mm			40		
MR (Calc.)	195.102	5	PV/RT			Sugd.	1594.9	5
(nD-d/2)			25°C			Exp. L. l. %/wt.		
Dielectric			30 mm	1.0000	5	u.		
A 401 to	7.51230	5	BP	0.8786	5	Dispersion		
B 666 °C	3218.9	5	t_e	0.8299	5	Flash Point °C		
C	132.	5	t_c			Fire Point		
A* 401 to	2.55817	5	$\Delta\text{Hc kcal/m}$			M. Spec.		
B* 656 °C	3133.8	5	ΔHf			Ultra V.		
K			ΔFf			X-Ray Dif.		
t_k to °C			Viscosity centistokes			Infrared		
t_x to °C			η			Solubility in ⁺		
A' to °C						Acetone		
B' to °C			B^v to °C			Carbon tet.		
C' to °C			A to °C			Benzene		
A* to °C			(B ^v) to °C			Ether		
B* to °C			(A ^v) to °C			n-Heptane		
Ac to °C			c_p liq. °K			Ethanol		
Bc to °C			c_p vap. °K			Water		
Cc to °C			c_v vap.			Water in		
Cryos. A°								
const. B°								
t_e °C	636.20	5						
^a For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Iodotetracontane			STRUCTURAL FORMULA		
					CH ₂ (CH ₂) ₃₈ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₄₀ H ₈₁ I	Molecular Weight	688.958		
		Ref.			Ref.		
F.P. °C	84.1	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0862	5	h	
760 mm	569.	3	t _e	0.0380	5	f'	to
100	457.	5	30 mm	1.2876	5	g'	°K
30	406.	5	ΔHm cal/g			h'	
10	367.	5	ΔHv cal/g			m	to
1	301.	5	25°C			n	°K
Pressure mm 25°C			30 mm	34.46	5	o	
t _e	2111.9	5	BP	26.84	5	m'	to
Density g/ml 20°C			t _e (d, e)	23.47	5	n'	°K
d ₄ ^t 25	0.9728 ^a	3	ΔHv/T _e	17.65	5	o'	
d ₄ ³⁰	0.9692 ^a	3	d 406 to	53.48	5	Surface tension dynes/cm. 20°C	
a	0.9872	5	e 663 °C	0.0468	5	γ	28.33
b	-0.03720	5	d' to			30	27.50
Ref. Index n _D 20°C			e' °C			40	26.69
25	1.4782 ^a	3	d c g/ml			Parachor [P]	
30	1.4763 ^a	3	v c ml/g			20°C	
"C"	0.6486	4	t c °C			30	
MR (Obs.)	200.545	4	P c mm			40	
MR (Calc.) (n _D -d/2)	199.720	5	PV/RT 25°C			Sugd.	1633.9
Dielectric			30 mm	1.0000	5	Exp. L. l. %/wt. u.	
A 406 to	7.51884	5	BP	0.8777	5	Dispersion	
B 673 °C	3246.6	5	t _e	0.8284	5	Flash Point °C	
C	131.	5	t _c			Fire Point	
A* 406 to	2.57273	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 663 °C	3162.15	5	ΔHf			Solubility in +	
K			ΔFf			Acetone	
c			Viscosity centistokes			Carbon tet.	
t _k to			η °C			Benzene	
t _x °C						Ether	
A' to			B ^v to			n-Heptane	
B' °C			A ^v °C			Ethanol	
C'			(B ^v) to			Water	
A** to			(A ^v) °C			Water in	
B** °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc							
Cryos. A°							
const. B°							
t _e °C	643.08	5					
^a For undercooled liquid below normal F.P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE IV. IODOALKANES

No. 41

NAME		Diiodomethane			STRUCTURAL FORMULA		
					CH ₂ I ₂		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂ H ₂ I ₂	Molecular Weight	267.846		
		Ref.			Ref.		
F. P. °C	6.1	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	11.64	5	g	°K
B. P. °C			BP	0.0543	5	h	
760 mm	182.	3	t _e	0.0377	5	f'	to
100	113.	5	30 mm	0.7598	5	g'	°K
30	83.	5	ΔHm cal/g			h'	
10	60.	5				m	to
1	22.	5	ΔHv cal/g			n	°K
Pressure mm 25°C	1.25	5	25°C	45.57	5	o	
t _e	1212.4	5	30 mm	41.25	5		
Density g/ml 20°C	3.3345	3	BP	34.65	5	m'	to
t	3.3079	3	t _e	33.44	5	n'	°K
d ₄ 30			t _e (d, e)	33.29	5	o'	
			ΔHv/T _e	18.84	5		
a	3.4409	5	d 83 to	46.77	5	Surface tension dynes/cm. 20°C	
b	-0.00532	5	e 222 to	0.0666	5	γ	62.44
			d'			30	58.55
Ref. Index			e'			40	54.84
n _D 20°C	1.741	3				Parachor [P]	
25	1.738	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.2845	4	t _c °C			40	
MR (Obs.)	32.428	4	P _c mm			Sugd.	225.8
MR (Calc.)	32.418	5	PV/RT			Exp. L. l. %/wt.	
(n _D -d/2)			25°C	1.0037	5	u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 83 to	6.94246	5	BP	0.9333	5	Flash Point °C	
B 232 °C	1567.8	5	t _e	0.9165	5	Fire Point	
C	204.	5	t _c			M. Spec.	
A* 83 to	1.72537	5	ΔHc kcal/m			Ultra V.	
B* 222 °C	1482.1	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
t _k to			Viscosity centistokes			Solubility in ⁺	
t _x °C			η °C			Acetone	
A' to						Carbon tet.	
B' °C			B ^v to			Benzene	
C' °C			A ^v °C			Ether	
A'* to			(B ^v) to			n-Heptane	
B'* °C			(A ^v) °C			Ethanol	
Ac to			c _p liq. °K			Water	
Bc t _c °C			c _p vap. °K			Water in	
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	202.29	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1, 2-Diiodoethane		STRUCTURAL FORMULA	
				CH ₂ ICH ₂ I	
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₄ I ₂	Molecular Weight	281.872
F. P. °C	81.	Ref.	3	dt/dP °C/mm	
F. P. 100%				25°C	26.86
B. P. °C				BP	0.0558
760 mm	200.		3	t _e	0.0376
100	129.		5	30 mm	0.7850
30	98.		5	ΔHm cal/g	
10	74.		5	ΔHv cal/g	
1	35.		5	25°C	46.60
Pressure mm	0.50		5	30 mm	41.20
25°C	1258.7		5	BP	34.56
t _e				t _e	33.27
Density g/ml	3.325 ^a		3	t _e (d, e)	33.09
20°C	3.31 ^a		3	ΔHv/T _e	18.91
25				d 98 to	47.57
d ^t 30				e 243 °C	0.0651
a	3.3850		5	d' to	
b	-0.00300		5	e' °C	
Ref. Index				d c g/ml	
n _D 20°C	1.871 ^a		3	v _c ml/g	
25	1.871 ^a		3	t _c °C	
30				P _c mm	
"C"	0.3312		4	PV/RT	
MR (Obs.)	38.539		4	25°C	1.0014
MR (Calc.)	37.036		5	30 mm	1.0000
(nD-d/2)				BP	0.9309
Dielectric				t _e	0.9126
A 98 to	6.98834		5	t _c	
B 253 °C	1647.1		5	ΔHc kcal/m	
C	201.		5	ΔHf	
A* 98 to	1.78151		5	ΔFf	
B* 243 °C	1559.7		5	Viscosity centistokes	
K				η °C	
t _k to				B ^v to	
t _x °C				A ^v °C	
A' to				(B ^v) to	
B' °C				(A ^v) °C	
C'				c _p liq. °K	
A'* to				c _p vap. °K	
B'* °C				c _v vap.	
Ac to					
Bc °C					
Cc °C					
Cryos. A°					
consts. B°					
t _e °C	222.60		5		

^a For undercooled liquid below normal F.P.		⁺ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula			
SOURCE: MCA			
PURIFICATION: MCA			
LITERATURE REFERENCES: 3 MCA			

No. 43

NAME		2, 2-Diiodopropane			STRUCTURAL FORMULA	
					CH ₃ Cl ₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₆ I ₂	Molecular Weight	295.898	
F. P. °C		Ref.		Ref.		Ref.
F. P. 100%			dt/dP °C/mm		f	to °K
B. P. °C			25°C	7.751	g	to °K
760 mm	173.	3	BP	0.0536	h	to °K
100	105.	5	t _e	0.0378	f'	to °K
30	75.	5	30 mm	0.7477	g'	to °K
10	53.	5	ΔHm cal/g		h'	to °K
1	15.	5	ΔHv cal/g		m	to °K
Pressure mm 25°C	1.95	5	25°C	39.65	n	to °K
t _e	1189.3	5	30 mm	36.35	o	to °K
Density g/ml 20°C	2.5755 ^a	3	BP	30.58	m'	to °K
t	2.571 ^a	3	t _e (d, e)	29.45	n'	to °K
d ₄ 30			ΔHv/T _e	18.80	o'	to °K
a	2.5935	5	d 75 to	40.81	Surface tension dynes/cm. 20°C	
b	-0.03898	5	e 212 °C	0.0591	γ	48.89
Ref. Index n _D 20°C	1.651 ^a	3	e' to °C			48.21
25	1.649 ^a	3	d _c g/ml			47.53
30			v _c ml/g		Parachor [P] 20°C	
"C"	0.3267	4	t _c °C			30
MR (Obs.)	41.956	4	P _c mm			40
MR (Calc.) (nD-d/2)	41.654	5	PV/RT 25°C	1.0043		Sugd. 303.8
Dielectric			30 mm	1.0000	Exp. L. l. %/wt. u.	
A 75 to	6.92413	5	BP	0.9346	Dispersion	
B 222 °C	1532.4	5	t _e	0.9187	Flash Point °C	
C	206.	5	t _c		Fire Point	
A* 75 to	1.75582	5	ΔHc kcal/m		M. Spec. Ultra V.	
B* 212 °C	1447.4	5	ΔHf		X-Ray Dif.	
K			ΔFf		Infrared	
c			Viscosity centistokes		Solubility in ⁺	
t _k to °C			η °C		Acetone	
t _x to °C					Carbon tet.	
A' to °C					Benzene	
B' to °C			B ^v to °C		Ether	
C' to °C			A ^v to °C		n-Heptane	
A'* to °C			(B ^v) to °C		Ethanol	
B'* to °C			(A ^v) to °C		Water	
A _c to °C			c _p liq. °K		Water in	
B _c to °C			c _p vap. °K			
C _c to °C			c _v vap.			
Cryos. A° const. B°						
t _e °C	192.15	5				

^aFor undercooled liquid below normal F. P. ⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE V. HALOALKENES

No. 1

NAME		Chloroethene			STRUCTURAL FORMULA	
					CH ₂ =CHCl	
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₃ Cl	Molecular Weight 62.501			
	Ref.			Ref.		Ref.
F.P. °C	-153.79	3	dt/dP °C/mm		f	to
F.P. 100%			25°C	0.0118	g	°K
B.P. °C			BP	0.0326	h	
760 mm	-13.37	3	t _e	0.0351	f'	to
100	-54.54	5	30 mm	0.4524	g'	°K
30	-72.63	5	ΔHm cal/g		h'	
10	-86.33	5	ΔHv cal/g		m	to
1	-108.89	5	25°C	76.01	n	°K
Pressure mm	2862.1	5	30 mm	94.18	o	
t _e	692.1	5	BP	83.22		
Density g/ml	0.9106 ^a	3	t _e	83.65	m'	to
25°C	0.9013 ^a	3	t _e (d, e)	83.64	n'	°K
t			ΔHv/T _e	20.31	o'	
d ₄						
a	0.9514	5	d -73 to	80.74		
b	-0.00159	5	e 36 to	0.1849		
Ref. Index			d' °C			
n _D			e' °C			
25°C	1.370 ^a	3				
25	1.366 ^a	3	d _c g/ml			
30			v _c ml/g			
"C"	0.5441	4	t _c °C			
MR (Obs.)	15.525	4	P _c mm			
MR (Calc.)	15.836	5	PV/RT			
(nD-d/2)			25°C	0.9197		
Dielectric			30 mm	1.0000		
A -73 to	6.88054	5	BP	0.9637		
B 46 °C	912.5	5	t _e	0.9661		
C	242.	5	t _c			
A* -73 to	1.20831	5	ΔHc kcal/m			
B* 36 °C	849.8	5	ΔHf			
K			ΔFf			
t _k to			Viscosity centistokes			
t _k °C			η			
A' to						
B' °C			B ^v to			
C' °C			A ^v °C			
A'* to			(B ^v) to			
B'* °C			(A ^v) °C			
Ac to			c _p liq. °K			
Bc t _c °C			c _p vap. °K			
Cc °C			c _v vap.			
Cryos. A°						
const. B°						
t _e °C	-15.67	5				

^a For the liquid at saturation pressure ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		cis-1-Chloro-1-propene		STRUCTURAL FORMULA	
				CHCl=CHCH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₅ Cl	Molecular Weight	76.527
		Ref.			Ref.
F. P. °C	-134.8	3	dt/dP °C/mm		
F. P. 100%			25°C	0.0469	5
B. P. °C	+32.8	3	BP	0.0376	5
760 mm	-14.7	5	t _e	0.0354	5
100	-35.7	5	30 mm	0.5243	5
30	-51.6	5	ΔHm cal/g		
10	-77.8	5	ΔHv cal/g		
1			25°C	82.53	5
Pressure mm 25°C	573.5	5	30 mm	93.07	5
t _e	818.3	5	BP	81.19	5
Density g/ml 20°C	0.9347	3	t _e	80.82	5
d ^t 25	0.9271	3	t _e (d, e)	80.82	5
d ₄ 30			ΔHv/T _e	20.08	5
a	0.9656	5	d -36 to	86.88	5
b	-0.00144	5	e 55 °C	0.1736	5
Ref. Index n _D 20°C	1.4055	3	d' to		
25	1.400	3	e' °C		
30			d _c g/ml		
"C"	0.5780	4	v _c ml/g		
MR (Obs.)	20.089	4	t _c °C		
MR (Calc.) (n _D -d/2)	20.454	5	P _c mm		
Dielectric			PV/RT		
A -36 to	6.92478	5	25°C	0.9640	5
B 65 °C	1074.9	5	30 mm	1.0000	5
C	233.	5	BP	0.9567	5
A* -36 to	1.28551	5	t _e	0.9547	5
B* 55 °C	1005.3	5	t _c		
K			ΔHc kcal/m		
c			ΔHf		
t _x to			ΔFf		
t _x °C			Viscosity centistokes		
A' to			η °C		
B' °C			B ^v to		
C'			A ^v °C		
A'° to			(B ^v) to		
B'° °C			(A ^v) °C		
Ac to			c _p liq. °K		
Bc t _c °C			c _p vap. °K		
Cc			c _v vap.		
Cryos. A° const. B°					
t _e °C	34.93	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE V. HALOALKENES

No. 3

NAME		trans-1-Chloro-1-propene			STRUCTURAL FORMULA		
					CHCl=CHCH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₅ Cl	Molecular Weight 76.527				
		Ref.			Ref.		
F.P. °C	-99.0	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.0543	5	g	°K
B.P. °C			BP	0.0381	5	h	
760 mm	37.4	3	t _e	0.0355	5	f'	to
100	-10.8	5	30 mm	0.5313	5	g'	°K
30	-32.0	5	ΔHm cal/g			h'	
10	-48.1	5				m	to
1	-74.7	5	ΔHv cal/g			n	°K
Pressure mm 25°C	484.9	5	25°C	84.67	5	o	
t _e	831.0	5	30 mm	94.72	5		
Density g/ml 20°C	0.935	3	BP	82.51	5	m'	to
25	0.927	3	t _e	82.06	5	n'	°K
d ₄ ^t			t _e (d, e)	82.06	5	o'	
30			ΔHv/T _e	20.05	5		
a	0.9674	5	d -32 to	89.09	5	Surface tension dynes/cm. 20°C	
b	-0.00153	5	e 60 to	0.1759	5	γ	21.91
Ref. Index n _D			d' to				30
20°C	1.4054	3	e' to				20.37
25	1.400	3					40
30			d _c g/ml			Parachor [P]	
"C"	0.5777	4	v _c ml/g			20°C	
MR (Obs.)	20.078	4	t _c °C			30	
MR (Calc.)	20.454	5	P _c mm			40	
(nD-d/2)			PV/RT			Sugd.	177.4
Dielectric			25°C	0.9676	5	Exp. L.l./wt. u.	
A -32 to	6.92615	5	30 mm	1.0000	5	Dispersion	
B 70 °C	1089.8	5	BP	0.9562	5	Flash Point °C	
C	232.	5	t _e	0.9538	5	Fire Point	
A* -32 to	1.28179	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
B* 60 °C	1019.6	5	ΔHc kcal/m			Solubility in ⁺	
K			ΔHf			Acetone	
t _k to			ΔFf			Carbon tet.	
t _x to			Viscosity centistokes			Benzene	
A' to			η °C			Ether	
B' to			B ^v to			n-Heptane	
C' to			A ^v to			Ethanol	
A'* to			(B ^v) to			Water	
B'* to			(A ^v) to			Water in	
Ac to			c _p liq. °K				
Bc to			c _p vap. °K				
Cc to			c _v vap.				
Cryos. A* consts. B*							
t _e °C	40.01	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		2-Chloro-1-propene			STRUCTURAL FORMULA		
					CH ₂ =CClCH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₅ Cl	Molecular Weight	76.527		
		Ref.			Ref.		
F. P. °C	-137.4	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0341	5	g	°K
B. P. °C	22.65	3	BP	0.0365	5	h	
760 mm	-23.49	5	t _e	0.0353	5	f'	to
30	-43.82	5	30 mm	0.5086	5	g'	°K
10	-59.23	5	ΔHm cal/g			h'	
1	-84.64	5	ΔHv cal/g			m	to
Pressure mm 25°C	826.6	5	25°C	77.89	5	n	°K
t _e	790.9	5	30 mm	89.49	5	o	
Density g/ml 20°C	0.9017	3	BP	78.29	5	m'	to
d ₄ ^t	0.894 ^a	3	t _e	78.10	5	n'	°K
			t _e (d, e)	78.10	5	o'	
			ΔHv/T _e	20.13	5		
a	0.9333	5	d -44 to	82.10	5	Surface tension dynes/cm. 20°C	
b	-0.00143	5	e 44 °C	0.1684	5	30	18.84
			e' to °C			40	17.48
Ref. Index n _D	1.3973	3	e' to °C			40	16.15
25	1.392 ^a	3	d c g/ml			Parachor [P]	
30			v c ml/g			20°C	
"C"	0.5877	4	t c °C			30	
MR (Obs.)	20.452	4	P c mm			40	
MR (Calc.)	20.454	5	Pv/RT			Sugd.	177.4
(n _D -d/2)			25°C	0.9562	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A -44 to	6.91824	5	BP	0.9585	5	Flash Point °C	
B 54 °C	1040.2	5	t _e	0.9574	5	Fire Point	
C	235.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* -44 to	1.28964	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 44 °C	972.0	5	ΔHf				
K			ΔFf				
c			Viscosity centistokes °C				
t _x to °C							
t _x to °C							
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C'			(B ^v) to °C				
A'*	to °C		(A ^v) to °C				
B'*	°C		c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Crys. A' consts. B'							
t _e °C	23.76	5					

^a For the liquid at saturation pressure ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE V. HALOALKENES

No. 5

NAME		3-Chloro-1-propene			STRUCTURAL FORMULA		
					CH ₂ =CHCH ₂ Cl		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₅ Cl	Molecular Weight 76.527				
		Ref.		Ref.			Ref.
F. P. °C	-134.5	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°K	
B. P. °C			BP	0.0693	5		
760 mm	44.96	3	t _e	0.0389	5		
100	-4.25	5	30 mm	0.0356	5	f'	to
30	-25.94	5	ΔHm cal/g	0.5430	5	g'	°K
10	-42.40	5				h'	
1	-69.54	5	ΔHv cal/g			m	to
Pressure mm 25°C	366.8	5	25°C	88.20	5	n	°K
t _e	851.4	5	30 mm	97.40	5	o	
Density g/ml 20°C	0.9376	3	BP	84.66	5	m'	to
t	0.9311	3	t _e	84.07	5	n'	°K
d ₄ 25			t _e (d, e)	84.06	5	o'	
d ₄ 30			ΔHv/T _e	20.01	5		
a	0.9638	5	d -26 to	92.74	5	Surface tension dynes/cm. 20°C	
b	-0.00125	5	e 68 °C	0.1796	5	γ	22.19
Ref. Index n _D 20°C	1.4157	3	d'			30	20.93
25	1.4116	3	e'			40	19.69
30			d _c g/ml			Parachor [P]	
"C"	0.5899	4	v _c ml/g			20°C	
MR (Obs.)	20.469	4	t _c °C			30	
MR (Calc.)	20.454	5	P _c mm			40	
Dielectric			P _c mm			Sugd.	177.4
A -26 to	6.93053	5	PV/RT			Exp. L. l. %/wt. u.	
B 78 °C	1115.5	5	25°C	0.9727	5	Dispersion	
C	231.	5	30 mm	1.0000	5	Flash Point °C	
A* -26 to	1.27856	5	BP	0.9550	5	Fire Point	
B* 68 °C	1044.4	5	t _e	0.9518	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
K			t _c			Solubility in ⁺	
c			ΔHc kcal/m			Acetone	
t _k to			ΔHf			Carbon tet.	
t _x °C			ΔFf			Benzene	
A' to			Viscosity centistokes			Ether	
B' °C			η			n-Heptane	
C' °C						Ethanol	
A'* to			B ^v to			Water	
B'* °C			A ^v °C			Water in	
Ac to			(B ^v) to				
Bc t _c °C			(A ^v) °C				
Cc °C			c _p liq. °K				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	48.36	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Bromoethene			STRUCTURAL FORMULA		
					CH ₂ =CHBr		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₃ Br	Molecular Weight	106.960		
		Ref.				Ref.	
F.P. °C	-137.8	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.0277	5	g	°K
B.P. °C	15.80	3	BP	0.0357	5	h	
760 mm	-29.39	5	t _e	0.0353	5	f'	to
100	-49.28	5	t _e (d, e)	0.4977	5	g'	°K
30	-64.36	5	ΔHm cal/g			h'	
10	-89.21	5	ΔHv cal/g			m	to
1			25°C	53.55	5	n	°K
Pressure mm	1053.8	5	30 mm	62.35	5	o	
25°C	772.1	5	BP	54.63	5	m'	to
t _e			t _e	54.58	5	n'	°K
Density g/ml	1.4933 ^a	3	t _e (d, e)	54.58	5	o'	
20°C			ΔHv/T _e	20.17	5	Surface tension dynes/cm. 20°C	
d ₄ ^t	1.4738 ^a	3	d -49 to	56.51	5	30	10.34
25			e 36 °C	0.1186	5	40	9.24
30			d' to				8.21
			e' °C			Parachor [P]	
Ref. Index	1.441 ^a	3	d g/ml			20°C	
n _D 20°C	1.435 ^a	3	v _c ml/g			30	
25			t _c °C			40	
30			P _c mm			Sugd.	128.9
"C"	0.3916	4	PV/RT			Exp. L.l. %/wt.	
MR (Obs.)	18.915	4	25°C	0.9501	5	u.	
MR (Calc.)	18.734	5	30 mm	1.0000	5	Dispersion	
(n _D -d/2)			BP	0.9594	5	Flash Point °C	
Dielectric			t _e	0.9590	5	Fire Point	
A -49 to	6.90776	5	t _c			M Spec.	
B 46 °C	1014.0	5	ΔHc kcal/m			Ultra V.	
C	236.	5	ΔHf			X-Ray Dif.	
A* -49 to	1.43295	5	ΔFf			Infrared	
B* 36 °C	946.9	5	Viscosity centistokes			Solubility in +	
K			η °C			Acetone	
c						Carbon tet.	
t _k to						Benzene	
t _x °C						Ether	
A' to			B ^v to			n-Heptane	
B' °C			A ^v °C			Ethanol	
C'			(B ^v) to			Water	
A ^{1*} to			(A ^v) °C			Water in	
B ^{1*} °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc							
Cryos. A ^o							
const. B ^o							
t _e °C	16.23	5					
^a For the liquid at saturation pressure			⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE V. HALOALKENES

No. 7

NAME		cis-1-Bromo-1-propene			STRUCTURAL FORMULA		
					CHBr=CHCH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₅ Br	Molecular Weight 120.986				
		Ref.		Ref.			Ref.
F. P. °C	-113.	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	0.1059	g	°K	
B. P. °C			BP	0.0403	h		
760 mm	57.8	3	t _e	0.0357	f'	to	
100	6.8	5	30 mm	0.5629	g'	°K	
30	-15.7	5	ΔHm cal/g		h'		
10	-32.7	5	ΔHv cal/g		m	to	
1	-60.9	5	25°C	59.65	n	°K	
Pressure mm 25°C	226.4	5	30 mm	64.48	o		
t _e	886.0	5	BP	55.86			
Density g/ml 20°C	1.4291	3	t _e	55.31	m'	to	
t	1.4197	3	t _e (d, e)	55.29	n'	°K	
d ₄ 30			ΔHv/T _e	19.93	o'		
a	1.4668	5	d -16 to	62.64	Surface tension dynes/cm. 20°C		
b	-0.00183	5	e 83 °C	0.1174	30 15.42 5		
			d' to		40 14.60 5		
Ref. Index n _D 20°C	1.4560	3	e' °C		Parachor [P] 20°C		
25	1.4508	3	d _c g/ml		30		
30			v _c ml/g		40		
"C"	0.4222	4	t _c °C		Sugd. 167.9 5		
MR (Obs.)	23.013	4	P _c mm		Exp. L. l. %/wt. u.		
MR (Calc.)	23.352	5	PV/RT 25°C	0.9804	Dispersion		
(nD-d/2)			30 mm	1.0000	Flash Point °C		
Dielectric			BP	0.9531	Fire Point		
A -16 to	6.93827	5	t _e	0.9486	M. Spec. Ultra V. X-Ray Dif. Infrared		
B 93 °C	1159.6	5	t _c		Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
C °C	228.	5	ΔHc kcal/m				
A* -16 to	1.47250	5	ΔHf				
B* 83 °C	1086.8	5	ΔFf				
K			Viscosity centistokes η °C				
t _k to °C							
t _x °C							
A' to °C			B ^v to °C				
B' °C			A ^v °C				
			(B ^v) to °C				
A'* to °C			(A ^v) °C				
B'* °C			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	62.57	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		trans-1-Bromo-1-propene			STRUCTURAL FORMULA		
					CHBr=CHCH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₅ Br	Molecular Weight	120.986		
		Ref.			Ref.		
F.P. °C	-76.5	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C	0.1271	5	h	
760 mm	63.2	3	BP	0.0408	5	f'	to
100	11.5	5	t _e	0.0357	5	g'	°K
30	-11.3	5	30 mm	0.5713	5	h'	
10	-28.7	5	ΔHm cal/g			m	to
1	-57.2	5	ΔHv cal/g			n	°K
Pressure mm 25°C	184.2	5	25°C	61.30	5	o	
t _e	900.4	5	30 mm	65.68	5	m'	to
Density g/ml 20°C	1.4155	3	BP	56.81	5	n'	°K
d ₄ ²⁵	1.4061	3	t _e	56.20	5	o'	
d ₄ ³⁰			t _e (d, e)	56.17	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	19.90	5	30	14.85
a	1.4532	5	d	-11 to	5	40	14.05
b	-0.00184	5	e	89 °C	5		13.28
Ref. Index			d'	to		Parachor [P]	
20°C	1.456	3	e'	°C		20°C	
25	1.451	3	v _c			30	
30			v _c			40	
"C"	0.4263	4	t _c			Sugd.	167.9
MR (Obs.)	23.234	4	P _c	mm		Exp. L. l. %/wt.	
MR (Calc.)	23.352	5	PV/RT			u.	
(n _D -d/2)			25°C	0.9832	5	Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A	-11 to		BP	0.9521	5	Fire Point	
B	92 °C	5	t _e	0.9471	5	M Spec.	
C		5	t _c			Ultra V.	
A*	-11 to		ΔHc kcal/m			X-Ray Dif.	
B*	89 °C	5	ΔHf			Infrared	
K			ΔFf			Solubility in +	
c			Viscosity centistokes			Acetone	
t _x			η			Carbon tet.	
t _x						Benzene	
A'			B ^v			Ether	
B'			A ^v			n-Heptane	
C'			(B ^v)			Ethanol	
A ^{1*}			(A ^v)			Water	
B ^{1*}			c _p liq.			Water in	
C ^{1*}			c _p vap.				
A ^c			c _v vap.				
B ^c							
C ^c							
Cryos. A ^c							
consts. B ^c							
t _e °C	68.56	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE V. HALOALKENES

No. 9

NAME		cis-1-Bromo-1-butene			STRUCTURAL FORMULA		
					CHBr=CHCH ₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₄ H ₇ Br	Molecular Weight 135.012				
		Ref.			Ref.		Ref.
F.P. °C			dt/dP °C/mm		f	to	
F.P. 100%			25°C	0.2825	g	°K	
B.P. °C			BP	0.0433	h		
760 mm	86.15	3	t _e	0.0360	f'	to	
100	31.26	5	30 mm	0.6072	g'	°K	
30	7.01	5	ΔHm cal/g		h'		
10	-11.40	5			m	to	
1	-41.80	5	ΔHv cal/g		n	°K	
Pressure mm 25°C	74.96	5	25°C	61.35	o		
t _e	962.0	5	30 mm	63.41			
Density g/ml 20°C	1.3192	3	BP	54.56	m'	to	
t	1.3119	3	t _e	53.71	n'	°K	
d ₄ 25			t _e (d, e)	53.67	o'		
30			ΔHv/T _e	19.75			
a	1.3484	5	d 7 to	64.19		Surface tension dynes/cm. 20°C	
b	-0.00144	5	e 114 °C	0.1118		30	16.68
Ref. Index n _D 20°C	1.456	3	d'			40	15.94
25	1.453	3	e'				15.22
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.4574	4	v _c ml/g			30	
MR (Obs.)	27.821	4	t _c °C			40	
MR (Calc.) (nD-d/2)	27.970	5	P _c mm			Sugd.	206.9
Dielectric			PV/RT 25°C	0.9934	5	Exp. L. l. %/wt. u.	
A 7 to	6.96077	5	30 mm	1.0000	5	Dispersion	
B 124 °C	1261.3	5	BP	0.9487	5	Flash Point °C	
C	223.	5	t _e	0.9415	5	Fire Point	
A* 7 to	1.51612	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
B* 114 °C	1184.8	5	ΔHc kcal/m			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			ΔHf				
c			ΔFf				
t _k to			Viscosity centistokes η °C				
t _x to							
A' to			B ^v to				
B' °C			A ^v °C				
C' °C			(B ^v) to				
A'* to			(A ^v) °C				
B'* °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
const. B°							
t _e °C	94.11	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		trans-1-Bromo-1-butene		STRUCTURAL FORMULA	
				CHBr=CHCH ₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₇ Br	Molecular Weight	135.012
		Ref.			Ref.
F. P. °C	-100.3	3	dt/dP °C/mm		
F. P. 100%			25°C	0.3845	5
B. P. °C	94.7	3	BP	0.0442	5
760 mm	38.7	5	t _e	0.0361	5
100	13.9	5	30 mm	0.6196	5
30	-4.9	5			
10	-35.9	5	ΔHm cal/g		
1					
Pressure mm 25°C	53.03	5	ΔHv cal/g		
t _e	984.8	5	25°C	63.91	5
			30 mm	65.24	5
Density g/ml 20°C	1.3202	3	BP	55.92	5
d ₄ ²⁵	1.3129	3	t _e	54.94	5
d ₄ ³⁰			t _e (d, e)	54.88	5
			ΔHv/T _e	19.69	5
a	1.3494	5	d 14 to °C	66.84	5
b	-0.00144	5	d' 124 to °C	0.1153	5
Ref. Index			d'' to °C		
n _D ^{20°C}	1.456	3	d''' to °C		
25	1.453	3	d _c g/ml		
30			v _c ml/g		
"C"	0.4571	4	t _c °C		
MR (Obs.)	27.799	4	P _c mm		
MR (Calc.) (n _D -d/2)	27.970	5	PV/RT		
Dielectric			25°C	0.9963	5
A 14 to	6.95355	5	30 mm	1.0000	5
B 134 °C	1283.7	5	BP	0.9473	5
C	221.	5	t _e	0.9393	5
A* 14 to	1.50250	5	t _c		
B* 124 °C	1206.7	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to °C			Viscosity centistokes		
t _x to °C			η °C		
A' to °C			B ^v to °C		
B' to °C			A ^v to °C		
C' to °C			(B ^v) to °C		
A' * to °C			(A ^v) to °C		
B' * to °C			c _p liq. °K		
Ac to °C			c _p vap. °K		
Bc to °C			c _v vap.		
Cc to °C					
Cryos. A' consts. B'					
t _e °C	103.65	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE V. HALOALKENES

No. 11

NAME		2-Bromo-1-butene			STRUCTURAL FORMULA		
					$\text{CH}_2=\text{CBrCH}_2\text{CH}_3$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_4\text{H}_7\text{Br}$	Molecular Weight 135.012				
		Ref.		Ref.			Ref.
F. P. °C	-133.4	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	0.2353	g	°K	
B. P. °C			BP	0.0427	h		
760 mm	81.0	3	t_e	0.0359	f'	to	
100	26.8	5	30 mm	0.5993	g'	°K	
30	2.9	5	ΔH_m cal/g		h'		
10	-15.3	5	ΔH_v cal/g		m	to	
1	-45.3	5	25°C	59.88	n	°K	
Pressure mm 25°C	92.00	5	30 mm	62.38	o		
t_e	948.2	5	BP	53.74			
Density g/ml 20°C	1.3136	3	t_e	52.96	m'	to	
25	1.3063	3	t_e (d, e)	52.92	n'	°K	
d_4^{30}			$\Delta H_v/T_e$	19.78	o'		
a	1.3428	5	d 3 to	62.69	Surface tension dynes/cm. 20°C		
b	-0.00143	5	e 108 °C	0.1106	f	30	16.39
Ref. Index			d'			40	15.66
n_D^{20}	1.4537	3	e'		Parachor [P]		
25	1.4507	3	d_c g/ml		20°C		
30			v_c ml/g		30		
"C"	0.4572	4	t_c °C		40		
MR (Obs.)	27.817	4	P_c mm		Sugd.	206.9	5
MR (Calc.)	27.970	5	PV/RT		Exp. L. l. %/wt. u.		
(nD-d/2)			25°C	0.9914	Dispersion		
Dielectric			30 mm	1.0000	Flash Point °C		
A 3 to	6.95820	5	BP	0.9494	Fire Point		
B 118 °C	1243.6	5	t_e	0.9427	M. Spec. Ultra V.		
C	224.	5	t_c		X-Ray Dif.		
A* 3 to	1.51816	5	ΔH_c kcal/m		Infrared		
B* 108 °C	1167.7	5	ΔH_f		Solubility in ⁺		
K			ΔF_f		Acetone		
t_k to			Viscosity centistokes		Carbon tet.		
t_x °C			η		Benzene		
A' to					Ether		
B' °C			B ^v to		n-Heptane		
C' °C			A ^v °C		Ethanol		
A* to			(B ^v) to		Water		
B* °C			(A ^v) °C		Water in		
Ac to			c_p liq. °K				
Bc t_c °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A°							
const. B°							
t_e °C	88.36	5					

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		2-Bromo-cis-2-butene			STRUCTURAL FORMULA		
					CH ₃ CBr=CHCH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₇ Br	Molecular Weight	135.012		
		Ref.				Ref.	Ref.
F. P. °C	-111.2	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	0.2790	5	g	
B. P. °C			BP	0.0433	5	h	
760 mm	85.8	3	t _e	0.0360	5	f'	to °K
100	31.0	5	30 mm	0.6066	5	g'	
30	6.7	5	ΔHm cal/g			h'	
10	-11.7	5	ΔHv cal/g			m	to °K
1	-42.0	5	25°C	61.25	5	n	
Pressure mm 25°C	76.00	5	30 mm	63.35	5	o	
t _e	961.0	5	BP	54.50	5		
Density g/ml 20°C	1.3237	3	t _e	53.66	5	m'	to °K
d ^t 25	1.3167	3	t _e (d, e)	53.62	5	n'	
d ^t 30			ΔHv/T _e	19.75	5	o'	
a	1.3517	5	d 7 to	64.10	5	Surface tension dynes/cm. 20°C	
b	-0.00138	5	e 114 °C	0.1119	5	30	16.91
Ref. Index n _D 20°C	1.4580	3	e' to °C			40	16.19
25	1.4550	3	d _c g/ml				15.49
30			v _c ml/g			Parachor [P] 20°C	
"C"	0.4577	4	t _c °C			30	
MR (Obs.)	27.831	4	P _c mm			40	Sugd.
MR (Calc.) (n _D -d/2)	27.970	5	PV/RT 25°C	0.9932	5	Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 7 to	6.95966	5	BP	0.9487	5	Flash Point °C	
B 124 °C	1259.6	5	t _e	0.9415	5	Fire Point	
C	223.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 7 to	1.51550	5	ΔHc kcal/m			Solubility in +	
B* 114 °C	1183.1	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes °C			Benzene	
t _k to °C						Ether	
t _x to °C						n-Heptane	
A' to °C			B ^v to °C			Ethanol	
B' to °C			A ^v to °C			Water	
C'			(B ^v) to °C			Water in	
A'*			(A ^v) to °C				
B'*			c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* const. B'							
t _e °C	93.71	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE V. HALOALKENES

No. 13

NAME	2-Bromo-trans-2-butene			STRUCTURAL FORMULA				
					$\text{CH}_3\text{CBr}=\text{CHCH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_4\text{H}_7\text{Br}$	Molecular Weight 135.012					
		Ref.					Ref.	
F. P. °C	-115.4	3	dt/dP °C/mm			f		
F. P. 100%			25°C	0.3858	5	g	to °K	
B. P. °C			BP	0.0442	5	h		
760 mm	94.8	3	t_e	0.0361	5	f'	to °K	
100	38.7	5	30 mm	0.6203	5	g'		
30	14.0	5	ΔH_m cal/g			h'		
10	-4.9	5	ΔH_v cal/g			m	to °K	
1	-35.9	5	25°C	63.89	5	n		
Pressure mm 25°C	52.9	5	30 mm	65.19	5	o		
t_e	985.1	5	BP	55.94	5	m'	to °K	
Density g/ml 20°C	1.3291	3	t_e (d, e)	54.97	5	n'		
t 25	1.3221	3	$\Delta H_v/T_e$	19.69	5	o'	to °K	
d 4 30			d 14 to	66.79	5	Surface tension dynes/cm. 20°C		
a	1.3571	5	e 124 °C	0.1144	5	γ	17.19	5
b	-0.00138	5	d'			30	16.47	5
Ref. Index			e'			40	15.76	5
n_D 20°C	1.457	3	d_c g/ml			Parachor [F]		
25	1.455	3	v_c ml/g			20°C		
30			t_c °C			30		
"C"	0.4549	4	P_c mm			40		
MR (Obs.)	27.666	4	PV/RT			Sugd.	206.9	5
MR (Calc.)	27.970	5	25°C	0.9963	5	Exp. L. l. %/wt. u.		
(nD-d/2)			30 mm	1.0000	5	Dispersion		
Dielectric			BP	0.9474	5	Flash Point °C		
A 14 to	6.96061	5	t_e	0.9394	5	Fire Point		
B 134 °C	1288.4	5	t_c			M. Spec. Ultra V.		
C	221.	5	ΔH_c kcal/m			X-Ray Dif.		
A* 14 to	1.50879	5	ΔH_f			Infrared		
B* 124 °C	1211.0	5	ΔF_f			Solubility in ⁺		
K			Viscosity centistokes			Acetone		
t_k to °C			η			Carbon tet.		
t_x to °C						Benzene		
A' to °C						Ether		
B' to °C						n-Heptane		
C' to °C						Ethanol		
A* to °C						Water		
B* to °C						Water in		
Ac to °C								
Bc to °C								
Cc to °C								
Cryos. A°								
const. B°								
t_e °C	103.77	5	c_p liq. °K					
			c_p vap. °K					
			c_v vap.					
								⁺ grams/100 grams solvent
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		cis-1-Bromo-1-heptene		STRUCTURAL FORMULA	
		trans-1-Bromo-1-heptene		CHBr=CH(CH ₂) ₄ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₇ H ₁₃ Br	Molecular Weight	177.090
		Ref.			Ref.
F. P. °C	-98.	3	dt/dP °C/mm		f to
F. P. 100%			25°C	5.535	g °K
B. P. °C	163.	3	BP	0.0516	h to
760 mm	98.	5	t _e	0.0369	f' to
100	69.	5	30 mm	0.7260	g' °K
30	47.	5	ΔHm cal/g		h' to
10	10.	5	ΔHv cal/g		m to
1			25°C	64.85	n °K
Pressure mm 25°C	2.79	5	30 mm	60.15	o to
t _e	1163.9	5	BP	50.74	m' to
Density g/ml 20°C	1.1532	3	t _e	49.13	n' to
d ^t 25	1.147	3	t _e (d, e)	49.00	o' °K
d ⁴ 30			ΔHv/T _e	19.18	
a	1.1780	5	d 69 to	66.97	Surface tension
b	-0.00124	5	e 200 °C	0.0996	dynes/cm. 20°C
Ref. Index			d' to		30 19.79
n _D 20°C	1.461	3	e' °C		40 18.95
25	1.458	3	d c g/ml		40 18.14
30			v c ml/g		Parachor [P]
"C"	0.5286	4	t c °C		20°C
MR (Obs.)	42.138	4	P c mm		30
MR (Calc.)	41.824	5	PV/RT		40
(nD-d/2)			25°C	1.0051	Sugd. 323.9
Dielectric			30 mm	1.0000	Exp. L. l. %/wt.
A 69 to	6.99161	5	BP	0.9368	u.
B 210 °C	1525.1	5	t _e	0.9221	Dispersion
C	208.	5	t _c		Flash Point °C
A* 69 to	1.60633	5	ΔHc kcal/m		Fire Point
B* 200 °C	1440.8	5	ΔHf		M Spec.
K			ΔFf		Ultra V.
c			Viscosity		X-Ray Dif.
t _k to			centistokes		Infrared
t _x °C			η °C		Solubility in +
A' to			B ^v to		Acetone
B' °C			A ^v °C		Carbon tet.
C'			(B ^v) to		Benzene
A'* to			(A ^v) °C		Ether
B'* °C			c _p liq. °K		n-Heptane
Ac to			c _p vap. °K		Ethanol
Bc °C			c _v vap.		Water
Cc °C					Water in
Cryos. A°					
consts. B°					
t _e °C	180.49	5			
† grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE V. HALOALKENES

No. 15

NAME		3-Iodo-1-propene			STRUCTURAL FORMULA		
					CH ₂ =CHCH ₂ I		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₅ I	Molecular Weight 167.980				
		Ref.			Ref.		
F. P. °C	-99.3	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.5022	5	g	°K
B. P. °C			BP	0.0450	5	h	
760 mm	102.	3	t _e	0.0362	5	f'	to
100	45.	5	30 mm	0.6318	5	g'	°K
30	20.	5	ΔHm cal/g			h'	
10	1.	5	ΔHv cal/g			m	to
1	-31.	5	25°C	53.01	5	n	°K
Pressure mm 25°C	39.43	5	30 mm	53.52	5	o	
t _e	1004.1	5	BP	45.90	5	m'	to
Density g/ml 20°C	1.8494	3	t _e (d, e)	45.05	5	n'	°K
t 25	1.8394	3	t _e	44.99	5	o'	
d ₄ 30			ΔHv/T _e	19.66	5	Surface tension dynes/cm. 20°C	
a	1.8894	5	d 20 to	55.34	5	γ	19.50
b	-0.00199	5	e 132 °C	0.0926	5		30 18.66
Ref. Index			d' °C				40 17.85
n _D 20°C	1.5530	3	e' °C			Parachor [P]	
25	1.550	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.3909	4	t _c °C			40	
MR (Obs.)	29.066	4	P _c mm			Sugd.	190.9
MR (Calc.) (nD-d/2)	28.387	5	PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C	0.9983	5	Dispersion	
A 20 to	6.96930	5	30 mm	1.0000	5	Flash Point °C	
B 142 °C	1316.5	5	BP	0.9462	5	Fire Point	
C	220.	5	t _e	0.9375	5	M. Spec. Ultra V.	
A* 20 to	1.60612	5	t _c			X-Ray Dif.	
B* 132 °C	1238.1	5	ΔHc kcal/m			Infrared	
K			ΔHf			Solubility in ⁺	
c			ΔFf			Acetone	
t _k to			Viscosity centistokes			Carbon tet.	
t _x °C			η °C			Benzene	
A' to			B ^v to			Ether	
B' °C			A ^v °C			n-Heptane	
C' °C			(B ^v) to			Ethanol	
A'* to			(A ^v) °C			Water	
B'* °C			c _p liq. °K			Water in	
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	111.82	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 1

NAME	Aminomethane			STRUCTURAL FORMULA		
	Methylamine			CH ₃ NH ₂		
Mole % Pur.	Ref. 3	Molecular Formula CH ₅ N	Molecular Weight 31.058			
	Ref.			Ref.		Ref.
F.P. °C	-92.5	3	dt/dP °C/mm		f	to
F.P. 100%			25°C	0.0106	g	°
B.P. °C			BP	0.0289	h	-----
760 mm	-6.45	3	t _e	0.0304	f'	to
100	-43.91	5	30 mm	0.4311	g'	°
30	-60.96	5	ΔHm cal/g		h'	
10	-74.13	5	ΔHv cal/g		m	to
1	-96.28	5	25°C	186.51	n	°K
Pressure mm 25°C	2680.2	5	30 mm	222.72	o	
t _e	715.9	5	BP	199.95	m'	to
Density g/ml 20°C	0.6624 ^a	3	t _e	200.50	n'	°K
25	0.6562 ^a	3	t _e (d, e)	200.49	o'	
d ₄ 30			ΔHv/T _e	23.46		
a	0.6883	5	d -61 to	197.25	Surface tension dynes/cm. 20°C	
b	-0.00109	5	e -28 °C	0.4178	γ	100.59 5
Ref. Index			d' to			30 92.25 5
n _D 20°C	1.3527 ^a	3	e' °C			40 83.97 5
25	1.3491 ^a	3	d _c g/ml		Parachor [P]	
30			v _c ml/g			20°C
"C"	0.7147	4	t _c °C			30
MR (Obs.)	10.159	4	P _c mm			40
MR (Calc.)	10.368	5	PV/RT	0.9352		Sugd. 149.4 5
(nD-d/2)			25°C	1.0000	Exp. L.l. %/wt. u.	
Dielectric			30 mm	0.9684	Dispersion	
A -61 to	7.4969	3	BP	0.9696	Flash Point °C	
B 38 °C	1079.15	3	t _e		Fire Point	
C 240.23	240.23	3	t _c		M. Spec. Ultra V. X-Ray Dif. Infrared	
A* -61 to	1.5015	5	ΔHc kcal/m		Solubility in ⁺	
B* 28 °C	1013.55	5	ΔHf		Acetone	
K			ΔFf		Carbon tet.	
c			Viscosity centistokes		Benzene	
t _k to °C			η °C		Ether	
t _x to °C			B ^v to °C		n-Heptane	
A' to °C			A ^v to °C		Ethanol	
B' to °C			(B ^v) to °C		Water	
C' to °C			(A ^v) to °C		Water in	
A'*	to		c _p liq. °			
B'*	°C		c _p vap. °K			
Ac to °C			c _v vap.			
Bc t _c °C						
Cc to °C						
Cryos. A°						
consts. B°						
t _e °C	-7.76	5				

^a For the liquid at saturation pressure⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Aminoethane			STRUCTURAL FORMULA		
		Ethylamine			CH ₃ (CH ₂)NH ₂		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₇ N	Molecular Weight	45.084		
		Ref.			Ref.		
F.P. °C	-81.0	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C	0.0245	5	h	
760 mm	16.58	3	BP	0.0320	5	f'	to
100	-24.70	5	t _e	0.0314	5	g'	°K
30	-43.38	5	30 mm	0.4715	5	h'	
10	-57.76	5	ΔHm cal/g			m	to
1	-81.87	5	ΔHv cal/g			n	°K
Pressure mm 25°C	1062.2	5	25°C	143.56	5	o	
t _e	778.1	5	30 mm	164.48	5	o'	
Density g/ml 20°C	0.6829 ^a	3	BP	146.15	5	m'	to
d ^t 25	0.6769 ^a	3	t _e	145.97	5	n'	°K
d ⁴ 30			t _e (d, e)	145.98	5	o'	
a	0.7073	5	ΔHv/T _e	22.67	5	Surface tension dynes/cm. 20°C	
b	-0.00111	5	d -43 to	151.22	5	30	65.46
Ref. Index n _D 20°C	1.3663 ^a	3	e 37 °C	0.3057	5	40	60.58
25	1.3627 ^a	3	d' to				55.77
30			e' °C			Parachor [P]	
"C"	0.7186	4	d c g/ml			20°C	
MR (Obs.)	14.799	4	v c ml/g			30	
MR (Calc.) (nD-d/2)	14.986	5	t c °C			40	
Dielectric			P c mm			Sugd.	188.4
A -43 to	7.3862	3	PV/RT			Exp. L. l. %/wt.	
B 47 °C	1137.30	3	25°C	0.9558	5	u.	
C	235.85	3	30 mm	1.0000	5	Dispersion	
A* -43 to	1.5274	5	BP	0.9639	5	Flash Point °C	
B* 37 °C	1068.66	5	t _e	0.9633	5	Fire Point	
K			ΔHc kcal/m			M Spec.	
c			ΔHf			Ultra V.	
t _x to			ΔFf			X-Ray Dif.	
t _x °C			Viscosity centistokes			Infrared	
A' to			η °C			Solubility in +	
B' °C			B ^v to			Acetone	
C' °C			A ^v °C			Carbon tet.	
A'* to			(B ^v) to			Benzene	
B'* °C			(A ^v) °C			Ether	
A _c to			c _p liq. °K			n-Heptane	
B _c t _c °C			c _p vap. °K			Ethanol	
C _c °C			c _v vap.			Water	
Cryos. A°						Water in	
const. B°							
t _e °C	17.15	5					

^a For the liquid at saturation pressure⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 3

NAME	1-Aminopropane			STRUCTURAL FORMULA		
	Propylamine			CH ₃ (CH ₂) ₂ NH ₂		
Mole % Pur.	Ref. 3	Molecular Formula C ₃ H ₉ N	Molecular Weight 59.110			
		Ref.		Ref.		Ref.
F. P. °C	-83.0	3	dt/dP °C/mm		f	to
F. P. 100%			25°C		g	°
B. P. °C			BP	0.0752	5	
760 mm	47.8	3	t _e	0.0362	5	h
100	1.4	5	30 mm	0.0327	5	f'
30	-19.5	5	ΔHm cal/g	0.5260	5	g'
10	-35.5	5				h'
1	-62.3	5				
Pressure mm 25°C	307.9	5	ΔHv cal/g			m
t _e	861.6	5	25°C	125.87	5	n
			30 mm	137.03	5	o
Density g/ml 20°C	0.7173	3	BP	120.22	5	
t	0.7123	3	t _e	119.36	5	m'
d ₄ 30			t _e (d, e)	119.34	5	n'
			ΔHv/T _e	21.75	5	o'
a	0.7374	5	d -20 to	132.15	5	Surface tension
b	-0.03963	5	e 71 °C	0.2497	5	dynes/cm. 20°C
			d' to			30
Ref. Index			e' °C			40
n _D 20°C	1.3879	3				57.72
25	1.3848	3				54.43
30						51.19
"C"	0.7223	4				
MR (Obs.)	19.441	4	d _c g/ml			Parachor [P]
MR (Calc.)	19.604	5	v _c ml/g			20°C
(n _D -d/2)			t _c °C			30
			P _c mm			40
Dielectric			PV/RT			Sugd. 227.4
A -20 to	7.2672	3	25°C	0.9770	5	Exp. L. l. %/wt.
B 81 °C	1218.1	3	30 mm	1.0000	5	u.
C 229.9		3	BP	0.9577	5	Dispersion
			t _e	0.9545	5	Flash Point °C
A* -20 to	1.4954	5	t _e			Fire Point
B* 71 °C	1145.7	5	t _c			M. Spec.
K			ΔHc kcal/m			Ultra V.
			ΔHf			X-Ray Dif.
c			ΔFf			Infrared
t _x to			Viscosity			Solubility in ⁺
t _x °C			centistokes			Acetone
			η °C			Carbon tet.
A' to						Benzene
B' °C						Ether
C' °C						n-Heptane
						Ethanol
A'* to						Water
B'* °C						Water in
Ac to						
Bc t _c °C						
Cc °C						
Cryos. A°						
consts. B°						
t _e °C	51.29	5				
† grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

NAME		1-Aminobutane		STRUCTURAL FORMULA	
		Butylamine		$\text{CH}_3(\text{CH}_2)_3\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_4\text{H}_{11}\text{N}$	Molecular Weight	73.136
		Ref.			Ref.
F. P. °C	-49.1	3	dt/dP °C/mm		
F. P. 100%			25°C	0.2247	5
B. P. °C			BP	0.0398	5
760 mm	77.8	3	t_e	0.0336	5
100	26.8	5	30 mm	0.5757	5
30	3.9	5	ΔH_m cal/g		
10	-13.6	5	ΔH_v cal/g		
1	-42.8	5	25°C	116.13	5
Pressure mm 25°C	91.75	5	30 mm	120.74	5
t_e	941.6	5	BP	104.93	5
Density g/ml 20°C	0.7414	3	t_e	103.50	5
d_4^{25}	0.7369	3	t_e (d, e)	103.50	5
			$\Delta H_v/T_e$	21.17	5
a	0.7594	5	d 4 to	121.58	5
b	-0.03885	5	e 104 °C	0.2140	5
Ref. Index n_D^{20}	1.4031	3	e' to		
25	1.4004	3	e' °C		
30			d c g/ml		
"C"	0.7246	4	v c ml/g		
MR (Obs.)	24.078	4	t c °C		
MR (Calc.) (nD-d/2)	24.222	5	P c mm		
Dielectric			PV/RT		
A 4 to	7.213	3	25°C	0.9916	5
B 114 °C	1308.4	3	30 mm	1.0000	5
C	224.2	3	BP	0.9530	5
A* 4 to	1.507	5	t_e	0.9464	5
B* 104 °C	1232.4	5	t_c		
K			ΔH_c kcal/m		
c			ΔH_f		
t_k to			ΔF_f		
t_x °C			Viscosity centistokes		
A' to			η °C		
B' °C			B ^v to		
C' °C			A ^v °C		
A'*	to		(B ^v) to		
B'*	°C		(A ^v) °C		
Ac to			c_p liq. °K		
Bc t c °C			c_p vap. °K		
Cc °C			c_v vap.		
Cryos. A°					
consts. B°					
t_e °C	84.45	5			

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 5

NAME	1-Aminopentane			STRUCTURAL FORMULA				
	Pentylamine							
			CH ₃ (CH ₂) ₄ NH ₂					
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₁₃ N	Molecular Weight 87.162					
F. P. °C	-55.	3	dt/dP °C/mm					
F. P. 100%			25°C	0.6088	5	f to		
B. P. °C			BP	0.0428	5	g °		
760 mm	104.4	3	t _e	0.0341	5	h		
100	49.2	5	30 mm	0.6179	5	f' to		
30	24.7	5	ΔHm cal/g			g' °		
10	5.9	5				h'		
1	-25.4	5	ΔHv cal/g			m to		
Pressure mm 25°C	30.53	5	25°C	109.02	5	n °K		
t _e	1011.3	5	30 mm	109.08	5	o		
Density g/ml 20°C	0.7547	3	BP	93.26	5	m' to		
t	0.7505	3	t _e	92.36	5	n' °K		
d ₄ 25			t _e (d, e)	91.43	5	o'		
d ₄ 30			ΔHv/T _e	20.81	5	Surface tension dynes/cm. 20°C		
a	0.7715	5	d 25 to	113.97	5	γ	48.87	5
b	-0.03833	5	e 134 °C	0.1984	5	30	46.71	5
Ref. Index			d' to °C			40	44.60	5
n _D 20°C	1.4118	3	e'			Parachor [P]		
25	1.4091	3	d _c g/ml			20°C		
30			v _c ml/g			30		
"C"	0.7263	4	t _c °C			40		
MR (Obs.)	28.725	4	P _c mm			Sugd.	305.4	5
MR (Calc.)	28.840	5	PV/RT			Exp. L, l. %/wt. u.		
Dielectric			25°C	0.9999	5	Dispersion		
A 25 to	7.198	3	30 mm	1.0000	5	Flash Point °C		
B 144 °C	1396.9	3	BP	0.9382	5	Fire Point		
C	219.5	3	t _e	0.9397	5	M. Spec.		
A* 25 to	1.545	5	t _c			Ultra V.		
B* 134 °C	1317.8	5	ΔHc kcal/m			X-Ray Dif.		
K			ΔHf			Infrared		
c			ΔFf			Solubility in ⁺		
t _k to °C			Viscosity centistokes			Acetone		
t _x			η			Carbon tet.		
A' to °C						Benzene		
B'						Ether		
C' °C			B ^v to °C			n-Heptane		
A'* to °C			A ^v			Ethanol		
B'* °C			(B ^v)			Water		
Ac to °C			(A ^v)			Water in		
Bc t _c °C			c _p liq. °					
Cc °C			c _p vap. °K					
Cryos. A°			c _v vap.					
const. B°								
t _e °C	113.64	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		1-Aminohexane		STRUCTURAL FORMULA	
		Hexylamine		$\text{CH}_3(\text{CH}_2)_5\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_6\text{H}_{15}\text{N}$	Molecular Weight	101.188
F.P. °C	-22.9	Ref.	3	dt/dP °C/mm	
F.P. 100%				25°C	1.884
B.P. °C				BP	0.0462
760 mm	132.7		3	t_e	0.0348
100	73.7		5	30 mm	0.6638
30	47.3		5	ΔH_m cal/g	
10	27.1		5	ΔH_v cal/g	
1	-6.5		5	25°C	105.25
Pressure mm 25°C	8.85		5	30 mm	101.21
t_e	1086.2		5	BP	86.50
Density g/ml 20°C	0.7660		3	t_e	84.46
d_4^{25}	0.7620		3	t_e (d,e)	84.27
				$\Delta H_v/T_e$	20.40
a	0.7820		5	d 47 to	109.35
b	-0.03798		5	e 166 °C	0.1722
Ref. Index n_D				d' to	
20°C	1.4190		3	e' °C	
25	1.4165		3	d_c g/ml	
30				v_c ml/g	
"C"	0.7274		4	t_c °C	
MR (Obs.)	33.360		4	P_c mm	
MR (Calc.)	33.458		5	PV/RT	
Dielectric				25°C	1.0047
A 47 to	7.170		3	30 mm	1.0000
B 176 °C	1486.1		3	BP	0.9426
C	213.8		3	t_e	0.9322
A* 47 to	1.561		5	t_c	
B* 166 °C	1404.3		5	ΔH_c kcal/m	
K				ΔH_f	
c				ΔF_f	
t_x to				Viscosity centistokes	
t_x °C				η	
A' to					
B' °C				B^v to	
C'				A^v °C	
A'*	to			(B ^v) to	
B'*	°C			(A ^v) °C	
Ac to				c_p liq. °K	
Bc t_c °C				c_p vap. °K	
Cc t_c °C				c_v vap.	
Cryos. A* const. B*					
t_e °C	145.68		5		
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE VI. AMINOALKANES

No. 7

NAME		1-Aminoheptane			STRUCTURAL FORMULA		
		Heptylamine			$\text{CH}_3(\text{CH}_2)_6\text{NH}_2$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_7\text{H}_{17}\text{N}$	Molecular Weight 115.214				
		Ref.		Ref.			Ref.
F. P. °C	-18.	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°	
B. P. °C			BP	5.276	5	h	
760 mm	156.9	3	t_e	0.0486	5	f'	to
100	94.7	5	30 mm	0.0350	5	g'	°
30	66.9	5	$\Delta\text{Hm cal/g}$	0.7003	5	h'	
10	45.6	5				m	to
1	10.1	5	$\Delta\text{Hv cal/g}$			n	°K
Pressure mm 25°C	2.87	5	25°C	102.00	5	o	
t_e	1149.3	5	30 mm	94.89	5	m'	to
Density g/ml 20°C	0.7754	3	BP	80.70	5	n'	°K
t 25	0.7716	3	t_e	78.36	5	o'	
d_4 30			t_e (d, e)	78.19	5	Surface tension dynes/cm. 20°C	
			$\Delta\text{Hv}/T_e$	20.24	5	30	44.33
a	0.7906	5	d 67 to	105.43	5	40	42.61
b	-0.03759	5	e 193 °C	0.1576	5	40	40.94
Ref. Index n_D 20°C	1.4251	3	d'			Parachor [P] 20°C	
25	1.4227	3	e'			30	
30			d_c g/ml			40	
"C"	0.7285	4	v_c ml/g			Sugd.	383.4
MR (Obs.)	38.001	4	t_c °C			Exp. L. l. %wt. u.	
MR (Calc.)	38.076	5	P_c mm			Dispersion	
Dielectric			PV/RT 25°C	1.0059	5	Flash Point °C	
A 67 to	7.184	3	30 mm	1.0000	5	Fire Point	
B 203 °C	1575.4	3	BP	0.9396	5	M. Spec. Ultra V.	
C	209.2	3	t_e	0.9262	5	X-Ray Dif.	
A* 67 to	1.614	5	t_c			Infrared	
B* 193 °C	1491.3	5	$\Delta\text{Hc kcal/m}$			Solubility in +	
K			ΔHf			Acetone	
t_k to			ΔFf			Carbon tet.	
t_x °C			Viscosity centistokes η °C			Benzene	
A' to						Ether	
B' °C			B_v to			n-Heptane	
C' °C			A_v °C			Ethanol	
A* to			(B v)			Water	
B* °C			(A v)			Water in	
Ac to			c_p liq. °				
Bc t_c °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A°							
const. B°							
t_e °C	172.85	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Aminooctane			STRUCTURAL FORMULA	
		Octylamine			CH ₃ (CH ₂) ₇ NH ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₈ H ₁₉ N	Molecular Weight	129.240	
F. P. °C	0.0	3				
F. P. 100%						
B. P. °C						
760 mm	179.6	3		14.88	5	
100	114.7	5		0.0507	5	
30	85.5	5		0.0351	5	
10	63.2	5				
1	26.1	5		0.7329	5	
Pressure mm 25°C	0.93	5				
t _e	1208.1	5				
Density g/ml 20°C	0.7826	3				
d ₄ ^t	0.7790	3				
"a"	0.7970	5				
"b"	-0.03720	5				
Ref. Index n _D 20°C	1.4294	3				
25	1.4275	3				
30						
"C"	0.7286	4				
MR (Obs.)	42.608	4				
MR (Calc.)	42.694	5				
Dielectric						
A 86 to	7.214	3				
B 228 °C	1666.2	3				
C	204.9	3				
A* 86 to	1.679	5				
B* 218 °C	1580.1	5				
K						
t _x — to						
t _x — °C						
A' — to						
B' — °C						
C' — °C						
A'*	to					
B'*	°C					
Ac — to						
Bc — °C						
Cc — °C						
Cryos. A°						
consts. B°						
t _e °C	198.35	5				
dt/dP °C/mm 25°C						
BP						
t _e						
30 mm						
ΔHm cal/g						
ΔHv cal/g 25°C						
30 mm						
BP						
t _e						
t _e (d, e)						
ΔHv/T _e						
d 86 to	102.47	5				
e 218 °C	0.1463	5				
d' — to						
e' — °C						
d _c g/ml						
v _c ml/g						
t _c °C						
P _c mm						
PV/RT 25°C						
30 mm						
BP						
t _e						
t _c						
ΔHc kcal/m						
ΔHf						
ΔFf						
Viscosity centistokes °C						
γ						
B ^v — to						
A ^v — °C						
(B ^v) — to						
(A ^v) — °C						
c _p liq. °K						
c _p vap. °K						
c _v vap.						
f — to						
g — °K						
h — to						
f' — to						
g' — °K						
h' — to						
m — to						
n — °K						
o — to						
m' — to						
n' — °K						
o' — to						
Surface tension dynes/cm. 20°C						
30	42.80	5				
40	41.25	5				
40	39.73	5				
Parachor [P] 20°C						
30						
40						
Sugd.	422.4	5				
Exp. L. l. %/wt. u.						
Dispersion						
Flash Point °C						
Fire Point						
M Spec. Ultra V. X-Ray Dif. Infrared						
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in						
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

TABLE VI. AMINOALKANES

No. 9

NAME		1-Aminononane			STRUCTURAL FORMULA		
		Nonylamine			$\text{CH}_3(\text{CH}_2)_8\text{NH}_2$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_9\text{H}_{21}\text{N}$	Molecular Weight 143.266				
		Ref.			Ref.		Ref.
F.P. °C	-1.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	43.96	5	g	°
B.P. °C			BP	0.0528	5	h	
760 mm	202.2	3	t_e	0.0352	5	f'	to
100	134.5	5	30 mm	0.7652	5	g'	°
30	104.1	5	$\Delta\text{Hm cal/g}$			h'	
10	80.8	5				m	to
1	41.9	5	$\Delta\text{Hv cal/g}$			n	°K
Pressure mm 25°C	0.29	5	25°C	98.24	5	o	
t_e	1265.3	5	30 mm	85.96	5		
Density g/ml 20°C	0.7886	3	BP	72.36	5	m'	to
t 25	0.7853	3	t_e	69.70	5	n'	°K
d_4 30			t_e (d, e)	69.38	5	o'	
a	0.8018	5	$\Delta\text{Hv}/T_e$	20.10	5	Surface tension dynes/cm. 20°C	
b	-0.03660	5	d 104 to	100.38	5	30	41.61
Ref. Index			e 244 °C	0.1386	5	40	40.23
n_D 20°C	1.4336	3	d'			40	38.89
25	1.4316	3	e'			Parachor [P]	
30			d_c g/ml			20°C	
"C"	0.7298	4	v_c ml/g			30	
MR (Obs.)	47.273	4	t_c °C			40	
MR (Calc.)	47.312	5	P_c mm			Sugd.	461.4
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 104 to	7.241	3	25°C	1.0028	5	Dispersion	
B 254 °C	1756.1	3	30 mm	1.0000	5	Flash Point °C	
C	200.6	3	BP	0.9317	5	Fire Point	
A* 104 to	1.738	5	t_e	0.9153	5	M. Spec. Ultra V.	
B* 244 °C	1668.4	5	t_c			X-Ray Dif.	
K			$\Delta\text{Hc kcal/m}$			Infrared	
t_k to			ΔHf			Solubility in +	
t_x °C			ΔFf			Acetone	
A' to			Viscosity centistokes			Carbon tet.	
B' °C			η			Benzene	
C' °C						Ether	
A'* to			B ^v to			n-Heptane	
B'* °C			A ^v °C			Ethanol	
Ac to			(B ^v)			Water	
Bc t_c °C			(A ^v)			Water in	
Cc °C			c_p liq. °				
Cryos. A°			c_p vap. °K				
const. B°			c_v vap.				
t_e °C	223.70	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Aminodecane		STRUCTURAL FORMULA	
		Decylamine		CH ₃ (CH ₂) ₉ NH ₂	
Mole % Pur.	Ref. 3	Molecular Formula C ₁₀ H ₂₃ N	Molecular Weight 157.292		
F.P. °C	16.1	3	dt/dP °C/mm		f to
F.P. 100%			25°C	118.2	g °K
B.P. °C			BP	0.0540	h
760 mm	220.5	3	t _e	0.0349	f' to
100	151.1	5	t _e (d, e)		g' °K
30	119.8	5	ΔHm cal/g	0.7882	h'
10	95.8	5	ΔHv cal/g		m to
1	55.7	5	25°C	96.70	n °K
Pressure mm 25°C	0.10	5	30 mm	82.49	o
t _e	1312.0	5	BP	69.36	m' to
Density g/ml 20°C	0.7936	3	t _e	66.50	n' °K
d ₄ ^t 25	0.7905	3	t _e	66.27	o'
d ₄ ^t 30			ΔHv/T _e	20.22	
a	0.8060	5	d 120 to	98.11	Surface tension dynes/cm. 20°C
b	-0.03620	5	e 264 °C	0.1304	30
Ref. Index n _D 20°C	1.4369	3	d' to		40
25	1.4350	3	e' °C		39.38
30			d _c g/ml		38.15
"C"	0.7304	4	v _c ml/g		Parachor [P] 20°C
MR (Obs.)	51.916	4	t _c °C		30
MR (Calc.)	51.930	5	P _c mm		40
Dielectric			PV/RT 25°C	0.9999	Sugd. 500.4
A 120 to	7.298	3	25°C	1.0000	Exp. L.l. %/wt. u.
B 274 °C	1844.7	3	30 mm	0.9308	Dispersion
C	197.1	3	BP	0.9115	Flash Point °C
A* 120 to	1.824	5	t _e		Fire Point
B* 264 °C	1755.7	5	t _c		M Spec. Ultra V. X-Ray Dif. Infrared
K			ΔHc kcal/m		Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
t _k to °C			ΔHf		
t _x to °C			ΔFf		
A' to °C			Viscosity centistokes η °C		
B' to °C			B ^v to °C		
C' to °C			A ^v to °C		
A'* to °C			(B ^v) to °C		
B'* to °C			(A ^v) to °C		
Ac to °C			c _p liq. °K		
Bc to °C			c _p vap. °K		
Cc to °C			c _v vap.		
Cryos. A° const. B°					
t _e °C	244.21	5			

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 11

NAME		1-Aminoundecane			STRUCTURAL FORMULA		
		Undecylamine			$(\text{CH}_2)_9\text{CH}_2\text{NH}_2$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{11}\text{H}_{25}\text{N}$	Molecular Weight	171.318		
		Ref.			Ref.	Ref.	
F.P. °C	15.5	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	364.5	5	g	°
B.P. °C			BP	0.0559	5	h	-----
760 mm	241.7	3	t _e	0.0350	5	f'	to
100	169.7	5	30 mm	0.8180	5	g'	°
30	137.3	5	ΔHm cal/g			h'	
10	112.3	5				m	to
1	70.6	5	ΔHv cal/g			n	°K
Pressure mm 25°C	0.03	5	25°C	95.99	5	o	
t _e	1365.0	5	30 mm	79.60	5	n'	to
Density g/ml 20°C	0.7979	3	BP	66.54	5	m'	°K
t	0.7948	3	t _e	63.65	5	n'	
d ₄ 25			t _e (d, e)	63.25	5	o'	
d ₄ 30			ΔHv/T _e	20.15	5	Surface tension dynes/cm. 20°C	
a	0.8103	5	d 137 to	96.76	5	γ	39.83
b	-0.03620	5	e 288 °C	0.1250	5		30
Ref. Index			d' to				40
n _D 20°C	1.4398	3	e' °C			Parachor [P]	
25	1.4378	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.7310	4	t _c °C			40	
MR (Obs.)	56.565	4	P _c mm			Sugd.	539.4
MR (Calc.)	56.548	5	PV/RT			Exp. L. l. %/wt.	
(nD-d/2)			25°C	0.9956	5	u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 137 to	7.324	3	BP	0.9258	5	Flash Point °C	
B 298 °C	1931.6	3	t _e	0.9066	5	Fire Point	
C 193.1	193.1	3	t _c			M. Spec.	
A* 137 to	1.876	5	ΔHc kcal/m			Ultra V.	
B* 288 °C	1841.3	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
c			Viscosity, centistokes			Solubility in ⁺	
t _k to			η °C			Acetone	
t _x °C						Carbon tet.	
A' to			B ^v to			Benzene	
B' °C			A °C			Ether	
C' °C			(B ^v)			n-Heptane	
A'* to			(A ^v)			Ethanol	
B'* °C			c _p liq. °			Water	
Ac to			c _p vap. °K			Water in	
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
consts. B°							
t _e °C	268.03	5					

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminododecane		STRUCTURAL FORMULA	
		Dodecylamine		$\text{CH}_3(\text{CH}_2)_{11}\text{NH}_2$	
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{12}\text{H}_{27}\text{N}$	Molecular Weight 185.344		
				Ref.	Ref.
F.P. °C	28.26	3	dt/dP °C/mm		f to
F.P. 100%			25°C	1016.	g °K
B.P. °C			BP	0.0572	h
760 mm	259.2	3	t_e	0.0349	f' to
100	185.5	5	30 mm	0.8404	g' °K
30	152.1	5	$\Delta\text{Hm cal/g}$		h'
10	126.5	5	$\Delta\text{Hv cal/g}$		m to
1	83.6	5	25°C	95.01	n °K
Pressure mm	0.01	5	30 mm	76.89	o
t_e	1408.5	5	BP	64.11	
Density g/ml 20°C	0.8015 ^b	3	t_e	61.12	m' to
d_4^t	0.7986 ^b	3	t_e (d, e)	60.71	n' °K
d_4^{30}			$\Delta\text{Hv}/T_e$	20.20	o'
a	0.8131	5	d 152 to	95.06	Surface tension
b	-0.03580	5	e 308 °C	0.1194	dynes/cm. 20°C
Ref. Index n_D 20°C	1.4421 ^b	3	d' to		30
25	1.4403 ^b	3	e' °C		40
30					36.92
"C"	0.7313	4	d		Parachor [P] 20°C
MR (Obs.)	61.198	4	e		30
MR (Calc.)	61.166	5	t_c		40
(nD-d/2)			P		Sugd.
Dielectric			P _c mm		578.4
A 152 to	7.367	3	PV/RT		Exp. L.l. %/wt.
B 118 °C	2014.0	3	25°C	0.9918	u.
C	189.8	3	30 mm	1.0000	Dispersion
A* 152 to	1.945	5	BP	0.9234	Flash Point °C
B* 308 °C	1922.8	5	t_e	0.9027	Fire Point
K			t_c		M Spec.
t_x to			$\Delta\text{Hc kcal/m}$		Ultra V.
t_x °C			ΔHf		X-Ray Dif.
A' to			ΔFf		Infrared
B' °C			Viscosity centistokes °C		Solubility in +
C' °C			η		Acetone
A'*	to		B^v to		Carbon tet.
B'*	°C		A^v °C		Benzene
A _c to			(B^v) to		Ether
B _c °C			(A^v) °C		n-Heptane
C _c °C			c_p liq. °K		Ethanol
Cryos. A° const. B°			c_p vap. °K		Water
t_e °C	287.65	5	c_v vap.		Water in

^d For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 13

NAME		1-Aminotridecane		STRUCTURAL FORMULA	
		Tridecylamine		CH ₃ (CH ₂) ₁₂ NH ₂	
Mole % Pur.	Ref. 3	Molecular Formula C ₁₃ H ₂₉ N	Molecular Weight 199.370		
F. P. °C	27.4	3		Ref.	
F. P. 100%					
B. P. °C					
760 mm	275.8	3	dt/dP °C/mm 25°C 2844.	5	f to
100	200.5	5	BP 0.0583	5	g °
30	166.4	5	t _e 0.0348	5	h
10	140.1	5	30 mm 0.8612	5	f' to
1	96.0	5	ΔHm cal/g		g' °
Pressure mm 25°C			ΔHv cal/g 25°C 94.33	5	h'
t _e	1449.0	5	30 mm 74.50	5	m to
Density g/ml 20°C	0.8049 ^b	3	BP 61.94	5	n °K
d ₄ ²⁵	0.8019 ^b	3	t _e 58.86	5	o
d ₄ ³⁰			t _e (d, e) 58.45	5	m' to
			ΔHv/T _e 20.25	5	n' °K
a	0.8169	5	d 166 to	5	o'
b	-0.03600	5	e 326 °C	5	Surface tension dynes/cm. 20°C 38.60
Ref. Index			d' °C		30 37.46
n _D 20°C	1.4443 ^b	3	e' °C		40 36.35
25	1.4425 ^b	3	d _c g/ml		Parachor [P] 20°C
30			v _c ml/g		30
"C"	0.7316	4	t _c °C		40
MR (Obs.)	65.834	4	P _c mm		Sugd. 617.4
MR (Calc.) (nD-d/2)	65.784	5	PV/RT 25°C 0.9886	5	Exp. L. l. %/wt. u.
Dielectric			30 mm 1.0000	5	Dispersion
A 166 to	7.410	3	BP 0.9210	5	Flash Point °C
B 336 °C	2094.0	3	t _e 0.8989	5	Fire Point
C 186.6		3	ΔHc kcal/m		M. Spec. Ultra V. X-Ray Dif. Infrared
A* 166 to	2.012	5	ΔHf		Solubility in ⁺
B* 326 °C	2002.3	5	ΔFf		Acetone
K			Viscosity centistokes η °C		Carbon tet.
c					Benzene
t _k to					Ether
t _x °C					n-Heptane
A' to					Ethanol
B' °C					Water
C' °C					Water in
A'* to					
B'* °C					
Ac to					
Bc t _c °C					
Cc °C					
Cryos. A* consts. B*					
t _e °C	306.23	5			

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminotetradecane		STRUCTURAL FORMULA	
		Tetradecylamine		$\text{CH}_3(\text{CH}_2)_{13}\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{14}\text{H}_{31}\text{N}$	Molecular Weight	213.396
F.P. °C	38.19				
F.P. 100%					
B.P. °C					
760 mm	291.3	3		0.0594	5
100	214.5	5		0.0346	5
30	179.7	5		0.8805	5
10	152.8	5			
1	107.6	5			
Pressure mm 25°C					
t_e	1487.3	5			
Density g/ml 20°C					
d_4^{25}	0.8079 ^b	3			
d_4^{30}	0.8049 ^b	3			
"a"	0.8199	5			
"b"	-0.03600	5			
Ref. Index n_D 20°C					
25	1.4463 ^b	3			
30	1.4444 ^b	3			
"C"	0.7319	4			
MR (Obs.)	70.478	4			
MR (Calc.) (nD-d/2)	70.402	5			
Dielectric					
A 180 to	7.451	3			
B 354 °C	2170.6	3			
C	183.7	3			
A* 180 to	2.075	5			
B* 344 °C	2078.3	5			
K					
t_k — to					
t_x — °C					
A' — to					
B' — °C					
C' — °C					
A'* to					
B'* °C					
Ac to					
Bc t_c °C					
Cc — °C					
Cryos. A°					
const. B°					
t_e °C	323.61	5			
dt/dP °C/mm					
25°C					
BP					
t_e					
30 mm					
ΔH_m cal/g					
ΔH_v cal/g					
25°C					
30 mm					
BP					
t_e					
t_e (d, e)					
$\Delta H_v/T_e$					
d 180 to	92.04	5			
e 344 °C	0.1101	5			
d' — to					
e' — °C					
d g/ml					
v c ml/g					
t c °C					
P c mm					
PV/RT 25°C					
30 mm					
BP					
t_e					
t_c					
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes					
η °C					
B ^v — to					
A ^v — °C					
(B ^v) — to					
(A ^v) — °C					
c_p liq. °K					
c_p vap. °K					
c_v vap.					
f — to					
g — °K					
h — to					
g' — °K					
h' — to					
m — to					
n — °K					
o — to					
m' — °K					
n' — to					
o' — °K					
Surface tension dynes/cm. 20°C					
γ 30	38.14	5			
40	37.02	5			
40	35.92	5			
Parachor [P] 20°C					
30					
40					
Sugd.	656.4	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in					

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 15

NAME	1-Aminopentadecane			STRUCTURAL FORMULA $\text{CH}_3(\text{CH}_2)_{14}\text{NH}_2$				
	Pentadecylamine							
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{15}\text{H}_{33}\text{N}$	Molecular Weight 227.422					
F. P. °C	37.3	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C			g	°	
B. P. °C			BP	0.0607	5	h	---	
760 mm	307.6	3	t_e	0.0346	5	f'	to	
100	229.1	5	30 mm	0.9024	5	g'	°	
30	193.4	5	ΔH_m cal/g			h'		
10	165.8	5	ΔH_v cal/g			m	to	
1	119.5	5	25°C			n	°K	
Pressure mm 25°C			30 mm	70.23	5	o		
t_e	1526.4	5	BP	58.16	5	m'	to	
Density g/ml 20°C	0.8104 ^b	3	t_e	54.83	5	n'	°K	
25	0.8072 ^b	3	t_e (d, e)	54.52	5	o'		
d ^t 25			$\Delta H_v/T_e$	20.27	5	Surface tension dynes/cm. 20°C		
30						30	37.71	5
a	0.8232	5	d 193 to	90.68	5	40	36.53	5
b	-0.03640	5	e 362 °C	0.1057	5		35.38	5
Ref. Index n _D 20°C	1.4480 ^b	3	d'			Parachor [P] 20°C		
25	1.4459 ^b	3	e'			30		
30			d _c g/ml			40		
"C"	0.7323	4	v _c ml/g			Sugd.	695.4	5
MR (Obs.)	75.126	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	75.020	5	P _c mm			Dispersion		
Dielectric			PV/RT 25°C	1.0000	5	Flash Point °C		
A 193 to	7.477	3	30 mm	0.9181	5	Fire Point		
B 372 °C	2243.9	3	BP	0.8918	5	M. Spec. Ultra V.		
C	180.6	3	t_e			X-Ray Dif.		
A* 193 to	2.123	5	t_c			Infrared		
B* 362 °C	2151.4	5	ΔH_c kcal/m			Solubility in [†]		
K			ΔH_f			Acetone		
c			ΔF_f			Carbon tet.		
t _k to			Viscosity centistokes			Benzene		
t _x °C			η °C			Ether		
A' to						n-Heptane		
B' °C			B ^v to			Ethanol		
C'			A ^v °C			Water		
A* to			(B ^v)			Water in		
B* °C			(A ^v)					
Ac to			c _p liq. °					
Bc t _c °C			c _p vap. °K					
Cc °C			c _v vap.					
Cryos. A° const. B°								
t _e °C	342.05	5						

^b For undercooled liquid below normal F. P.[†] grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminohexadecane Hexadecylamine			STRUCTURAL FORMULA $\text{CH}_3(\text{CH}_2)_{15}\text{NH}_2$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{16}\text{H}_{35}\text{N}$	Molecular Weight 241.448				
		Ref.			Ref.	Ref.	
F.P. °C	46.77	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C			g	
B.P. °C			BP	0.0618	5	h	
760 mm	322.5	3	t _e	0.0346	5	f'	to °K
100	242.5	5	30 mm	0.9213	5	g'	
30	206.0	5	ΔHm cal/g			h'	
10	177.9	5	ΔHv cal/g			m	to °K
1	130.5	5	25°C			n	
Pressure mm 25°C			30 mm	68.36	5	o	
t _e	1562.2	5	BP	56.43	5	m'	to °K
Density g/ml 20°C	0.8129 ^b	3	t _e	53.09	5	n'	
25	0.8099 ^b	3	t _e (d, e)	52.72	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.29	5	Surface tension dynes/cm. 20°C	
a	0.8249	5	d 206 to	89.45	5	30	37.38
b	-0.03600	5	e 379 °C	0.1024	5	40	36.28
Ref. Index n _D 20°C	1.4496 ^b	3	d' to °C			40	35.22
25	1.4477 ^b	3	e' to °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.7325	4	v _c ml/g			40	
MR (Obs.)	79.760	4	t _c °C			Sugd.	734.4
MR (Calc.) (nD-d/2)	79.638	5	P _c mm			Exp. L.l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0000	5	Dispersion	
A 206 to	7.507	3	30 mm	0.9153	5	Flash Point °C	
B 389 °C	2313.9	3	BP	0.8885	5	Fire Point	
C	177.7	3	t _e			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 206 to	2.173	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 379 °C	2221.1	5	ΔHc kcal/m				
K			ΔHf				
c			ΔFf				
t _x to °C			Viscosity centistokes				
A' to °C			η °C				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A'*	to °C		(B ^v) to °C				
B'*	to °C		(A ^v) to °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	358.76	5					

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 17

NAME		1-Aminoheptadecane		Heptadecylamine		STRUCTURAL FORMULA				
						$\text{CH}_3(\text{CH}_2)_{14}\text{NH}_2$				
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{17}\text{H}_{37}\text{N}$	Molecular Weight	255.474					
		Ref.			Ref.	Ref.				
F.P. °C	46.	3	dt/dP °C/mm			f	to			
F.P. 100%			25°C			g	°			
B.P. °C			BP		0.0627	5	h	---		
760 mm	335.9	3	t _e		0.0345	5	f'	to		
100	254.6	5	30 mm		0.9379	5	g'	°		
30	217.5	5	ΔHm cal/g				h'			
10	188.9	5	ΔHv cal/g				m	to		
1	140.6	5	25°C				n	°K		
Pressure mm 25°C			30 mm		66.54	5	o			
t _e	1594.3	5	BP		54.82	5	m'	to		
Density g/ml 20°C	0.8150 ^b	3	t _e		51.42	5	n'	°K		
d ₄ ^t	0.8119 ^b	3	t _e (d, e)		51.07	5	o'			
30			ΔHv/T _e		20.31	5	Surface tension dynes/cm. 20°C		37.06	5
a	0.8274	5	d 218 to °C		88.07	5	30		35.94	5
b	-0.03620	5	e 394 to °C		0.0990	5	40		34.85	5
Ref. Index n _D 20°C	1.4510 ^b	3	d _e g/ml				Parachor [P] 20°C			
25	1.4490 ^b	3	v _c ml/g				30			
30			t _c °C				40			
"C"	0.7328	4	P _c mm				Sugd.		773.4	5
MR (Obs.)	84.402	4	PV/RT 25°C				Exp. L. l. %/wt. u.			
MR (Calc.) (nD-d/Z)	84.256	5	30 mm		1.0000	5	Dispersion			
Dielectric			BP		0.9136	5	Flash Point °C			
A 218 to °C	7.539	3	t _e		0.8857	5	Fire Point			
B 404 °C	2380.7	3	t _c				M. Spec. Ultra V.			
C	175.2	3	ΔHc kcal/m				X-Ray Dif.			
A* 218 to °C	2.224	5	ΔHf				Infrared			
B* 394 °C	2287.8	5	ΔFf				Solubility in ⁺			
K			Viscosity centistokes η °C				Acetone			
t _k to °C			B ^v to °C				Carbon tet.			
t _x to °C			A ^v to °C				Benzene			
A' to °C			(B ^v) to °C				Ether			
B' to °C			(A ^v) to °C				n-Heptane			
C' to °C			c _p liq. °				Ethanol			
A** to °C			c _p vap. °K				Water			
B** to °C			c _v vap. °				Water in			
Ac to °C										
Bc to °C										
Cc to °C										
Cryos. A° const.										
B°										
t _e °C	373.80	5								

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminooctadecane		STRUCTURAL FORMULA	
		Octadecylamine		$\text{CH}_3(\text{CH}_2)_{15}\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{18}\text{H}_{39}\text{N}$	Molecular Weight	269.500
		Ref.			Ref.
F.P. °C	52.86	3	dt/dP °C/mm		
F.P. 100%			25°C		f to
B.P. °C	348.8	3	BP	0.0636	5
760 mm	266.3	5	t_e	0.0344	5
100	228.6	5	30 mm	0.9537	5
30	199.5	5	$\Delta\text{Hm cal/g}$		
10	150.3	5	$\Delta\text{Hv cal/g}$		
1			25°C		m to
Pressure mm 25°C			30 mm	64.87	5
t_e	1624.8	5	BP	53.36	5
Density g/ml 20°C	0.8168 ^b	3	t_e	49.90	5
25	0.8138 ^b	3	t_e (d, e)	49.57	5
30			$\Delta\text{Hv}/T_e$	20.33	5
d_4^{25}			d 229 to	86.77	5
a	0.8288	5	e 408 °C	0.0958	5
b	-0.03600	5	d' to		
Ref. Index n_D 20°C	1.4522 ^b	3	e' °C		
25	1.4503 ^b	3	d_c g/ml		
30			v_c ml/g		
"C"	0.7330	4	t_c °C		
MR (Obs.)	89.044	4	P mm		
MR (Calc.) (nD-d/2)	88.874	5	PV/RT		
Dielectric			25°C	1.0000	5
A 229 to	7.569	3	30 mm	0.9123	5
B 418 °C	2444.9	3	BP	0.8829	5
C	172.7	3	t_e		
A* 229 to	2.273	5	t_c		
B* 408 °C	2352.0	5	$\Delta\text{Hc kcal/m}$		
K			ΔHf		
t_x to			ΔFf		
t_x °C			Viscosity centistokes		
A' to			η °C		
B' °C			B^v to		
C' °C			A^v °C		
A'*	to		(B ^v) to		
B'*	°C		(A ^v) °C		
Ac to			c_p liq. °K		
Bc to			c_p vap. °K		
Cc to			c_v vap.		
Cryos. A* const. B*					
t_e °C	388.29	5			
b For undercooled liquid below normal F.P.		+ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE VI. AMINOALKANES

No. 19

NAME		1-Aminononadecane		STRUCTURAL FORMULA			
		Nonadecylamine		$\text{CH}_3(\text{CH}_2)_9\text{NH}_2$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{19}\text{H}_{41}\text{N}$	Molecular Weight 283.526				
		Ref.			Ref.		Ref.
F. P. °C	53.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°
B. P. °C			25°C			h	
760 mm	360.3	3	BP	0.0642	5		
100	276.8	5	t _e	0.0343	5		to
30	238.7	5	30 mm	0.9667	5	g'	°
10	209.1	5	ΔHm cal/g			h'	
1	159.2	5	ΔHv cal/g			m	to
Pressure mm 25°C			25°C			n	°K
t _e	1651.1	5	30 mm	63.28	5	o	
Density g/ml 20°C			BP	51.90	5	m'	to
25	0.8185 ^b	3	t _e	48.48	5	n'	°K
d ₄ ^t	0.8156 ^b	3	t _e (d, e)	48.09	5	o'	
30			ΔHv/T _e	20.39	5		
a	0.8301	5	d 239 to °C	85.61	5	Surface tension dynes/cm. 20°C	
b	-0.03580	5	e 421 to °C	0.0936	5	y	36.50 5
Ref. Index n _D 20°C	1.4533 ^b	3	d'			30	35.47 5
25	1.4514 ^b	3	e'			40	34.47 5
30			d _c g/ml			Parachor [F]	
"C"	0.7331	4	v _c ml/g			20°C	
MR (Obs.)	93.680	4	t _c °C			30	
MR (Calc.) (nD-d/2)	93.492	5	P _c mm			40	
Dielectric			PV/RT 25°C			Sugd.	851.4 5
A 239 to °C	7.604	3	30 mm	1.0000	5	Exp. L. l. %/wt. u.	
B 431 °C	2506.8	3	BP	0.9094	5	Dispersion	
C	170.5	3	t _e	0.8803	5	Flash Point °C	
A* 239 to °C	2.326	5	t _c			Fire Point	
B* 421 °C	2414.2	5	ΔHc kcal/m			M. Spec. Ultra V.	
K			ΔHf			X-Ray Dif.	
t _k to °C			ΔFf			Infrared	
t _x to °C			Viscosity centistokes η			Solubility in ⁺	
A' to °C						Acetone	
B' to °C			B ^v to °C			Carbon tet.	
C' to °C			A ^v to °C			Benzene	
A* to °C			(B ^v)			Ether	
B* to °C			(A ^v)			n-Heptane	
Ac to °C			c _p liq. °			Ethanol	
Bc to °C			c _p vap. °K			Water	
Cc to °C			c _v vap.			Water in	
Cryos. A°							
const. B°							
t _e °C	401.02	5					
^b For undercooled liquid below normal F.P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Amineoicosane			STRUCTURAL FORMULA		
		Eicosylamine			$\text{CH}_3(\text{CH}_2)_{19}\text{NH}_2$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{20}\text{H}_{43}\text{N}$	Molecular Weight	297.552		
F. P. °C	60.	3					
F. P. 100%							
B. P. °C							
760 mm	372.4	3		0.0651	5		
100	287.8	5		0.0342	5		
30	249.0	5		0.9819	5		
10	219.0	5					
1	168.2	5					
Pressure mm 25°C							
t_e	1679.7	5					
Density g/ml 20°C	0.820 ^b	3					
d_4^{25}	0.8170 ^b	3					
"C"	0.7332	4					
MR (Obs.)	98.310	4					
MR (Calc.) (nD-d/2)	98.110	5					
Dielectric							
A 249 to	7.629	3					
B 445 °C	2567.1	3					
C	168.3	3					
A* 249 to	2.368	5					
B* 435 °C	2474.5	5					
K							
t_x to °C							
A' to °C							
B' to °C							
C' to °C							
A'*	to °C						
B'*	to °C						
Ac to °C							
Bc to °C							
Cc to °C							
Cryos. A° const. B°							
t_e °C	414.63	5					
dt/dP °C/mm 25°C							
BP							
t_e 30 mm							
ΔH_m cal/g							
ΔH_v cal/g 25°C							
30 mm BP							
t_e							
t_e (d, e)							
$\Delta H_v/T_e$							
d 249 to °C							
e 435 to °C							
d' to °C							
e' to °C							
d g/ml							
v c ml/g							
t_c °C							
P c mm							
PV/RT 25°C							
30 mm BP							
t_e							
t_c							
ΔH_c kcal/m							
ΔH_f							
ΔF_f							
Viscosity centistokes °C							
η							
B ^v to °C							
A ^v to °C							
(B ^v) to °C							
(A ^v) to °C							
c_p liq. °K							
c_p vap. °K							
c_v vap.							
f to °K							
g to °K							
h to °K							
f' to °K							
g' to °K							
h' to °K							
m to °K							
n to °K							
o to °K							
m' to °K							
n' to °K							
o' to °K							
Surface tension dynes/cm. 20°C							
30	36.27	5					
40	35.19	5					
40	34.13	5					
Parachor [P] 20°C							
30							
40							
Sugd.	890.4	5					
Exp. L. l. %/wt. u.							
Dispersion							
Flash Point °C							
Fire Point							
M Spec. Ultra V. X-Ray Dif. Infrared							
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in							

^b For undercooled liquid below normal F. P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 21

NAME	1-Aminoheneicosane			STRUCTURAL FORMULA $\text{CH}_3(\text{CH}_2)_{19}\text{CH}_2\text{NH}_2$			
	Heneicosylamine						
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{21}\text{H}_{45}\text{N}$	Molecular Weight 311.578				
		Ref.					Ref.
F. P. °C	59.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°
B. P. °C			BP	0.0695	5	h	
760 mm	384.	3	t _e	0.0364	5	f'	to
100	294.	5	30 mm	1.0251	5	g'	°
30	254.	5	ΔHm cal/g			h'	
10	223.	5					
1	170.	5	ΔHv cal/g			m	to
Pressure mm 25°C			25°C			n	°K
t _e	1706.9	5	30 mm	57.56	5	o	
Density g/ml 20°C			BP	46.74	5	m'	to
t _e 25	0.8215 ^a	3	t _e (d, e)	43.26	5	n'	°K
d ₄ 30	0.8185 ^a	3	ΔHv/T _e	19.16	5	o'	
a	0.8335	5	d 254 to °C	78.64	5	Surface tension dynes/cm. 20°C	
b	-0.03600	5	e 450 °C	0.0831	5	γ	29.35 5
Ref. Index n _D 20°C	1.4553 ^a	3	d'			30	28.50 5
25	1.4534 ^a	3	e'			40	27.67 5
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.7335	4	v _c ml/g			30	
MR (Obs.)	102.964	4	t _c °C			40	
MR (Calc.)	102.728	5	P _c mm			Sugd.	882.8 5
(n _D -d/2)			PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 254 to °C	7.40524	5	BP	0.9056	5	Flash Point °C	
B 460 °C	2488.4	5	t _e	0.8721	5	Fire Point	
C	166.	5	t _c			M. Spec. Ultra V.	
A* 254 to °C	2.15898	5	ΔHc kcal/m			X-Ray Dif.	
B* 450 °C	2394.8	5	ΔHf			Infrared	
K			ΔFf			Solubility in ⁺	
c			Viscosity centistokes			Acetone	
t _k to °C			η			Carbon tet.	
t _x to °C						Benzene	
A' to °C						Ether	
B' to °C						n-Heptane	
C' to °C						Ethanol	
A* to °C			B ^v to °C			Water	
B* to °C			A ^v to °C			Water in	
Ac to °C			(B ^v)				
Bc to °C			(A ^v)				
Cc to °C			c _p liq. °				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	430.31	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminodocosane		STRUCTURAL FORMULA					
		Docosylamine		CH ₃ (CH ₂) ₂₀ CH ₂ NH ₂					
Mole % Pur.	Ref.	Molecular Formula	C ₂₂ H ₄₇ N	Molecular Weight	325.604				
F. P. °C	66.	Ref.	3	dt/dP °C/mm	25°C	f	to	°K	Ref.
F. P. 100%				BP	0.0705	g			
B. P. °C				t _e	0.0365	h			
760 mm	395.		3	30 mm	1.0412	f'	to	°K	
100	304.		5	ΔHm cal/g		g'			
30	263.		5	ΔHv cal/g		h'			
10	231.		5	25°C		m	to	°K	
1	178.		5	30 mm	56.09	n			
Pressure mm 25°C				BP	45.44	o			
t _e	1732.2		5	t _e	41.92	m'	to	°K	
Density g/ml 20°C	0.8229 ^a		3	t _e (d, e)	41.57	n'			
d ₄ ^t 25	0.8198 ^a		3	ΔHv/T _e	19.06	o'			
d ₄ ^t 30				d 263 to	77.27	Surface tension dynes/cm. 20°C			
a	0.8353		5	e 463 °C	0.0806	30			29.33
b	-0.03620		5	d' to		40			28.45
Ref. Index n _D 20°C	1.4562 ^a		3	e' °C		40			27.60
25	1.4543 ^a		3	d c g/ml		Parachor [P]			
30				v c ml/g		20°C			
"C"	0.7336		4	t c °C		30			
MR (Obs.)	107.599		4	P c mm		40			
MR (Calc.) (nD-d/2)	107.346		5	PV/RT 25°C		Sugd.			920.8
Dielectric				30 mm	1.0000	Exp. L.l. %/wt.			
A 263 to	7.41079		5	BP	0.9039	u.			
B 473 °C	2532.3		5	t _e	0.8694	Dispersion			
C	164.		5	t _c		Flash Point °C			
A* 263 to	2.18015		5	ΔHc kcal/m		Fire Point			
B* 463 °C	2438.7		5	ΔHf		M Spec.			
K				ΔFf		Ultra V.			
c				Viscosity centistokes		X-Ray Dif.			
t _x to				η °C		Infrared			
A' to				B ^v to		Solubility in +			
B' °C				A ^v °C		Acetone			
C' °C				(B ^v) to		Carbon tet.			
A ^{1*} to				(A ^v) °C		Benzene			
B ^{1*} °C				c _p liq. °K		Ether			
Ac to				c _p vap. °K		n-Heptane			
Bc t _c °C				c _v vap.		Ethanol			
Cc °C						Water			
Cryos. A° const. B°						Water in			
t _e °C	442.94		5						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 23

NAME		1-Aminotricosane			STRUCTURAL FORMULA		
		Triacosylamine			$\text{CH}_3(\text{CH}_2)_{21}\text{CH}_2\text{NH}_2$		
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{23}\text{H}_{49}\text{N}$	Molecular Weight 339.630				
		Ref.			Ref.		
F.P. °C	64.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°
B.P. °C			BP	0.0715	5	h	
760 mm	405.	3	t _e	0.0366	5	f'	to
100	313.	5	30 mm	1.0557	5	g'	°
30	271.	5	ΔHm cal/g			h'	
10	239.	5				m	to
1	185.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1754.6	5	30 mm	54.67	5	m'	to
Density g/ml 20°C	0.8241 ^a	3	BP	44.18	5	n'	°K
t	0.8211 ^a	3	t _e	40.66	5	o'	
d ₄ 30			t _e (d, e)	40.31	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	18.98	5	30	29.42
a	0.8361	5	d 271 to	75.88	5	40	28.57
b	-0.03600	5	e 474 °C	0.0783	5	40	27.74
Ref. Index n _D			d'			Parachor [P]	
20°C	1.4570 ^a	3	e'			20°C	
25	1.4551 ^a	3	d _c g/ml			30	
30			v _c ml/g			40	
"C"	0.7337	4	t _c °C			Sugd.	959.8
MR (Obs.)	112.241	4	P _c mm			Exp. L. l. %/wt. u.	
MR (Calc.)	111.964	5	PV/RT 25°C			Dispersion	
(nD-d/2)			30 mm	1.0000	5	Flash Point °C	
Dielectric			BP	0.9021	5	Fire Point	
A 271 to	7.41418	5	t _e	0.8668	5	M. Spec. Ultra V.	
B 484 °C	2570.4	5	t _c			X-Ray Dif.	
C	162.	5	ΔHc kcal/m			Infrared	
A* 271 to	2.19920	5	ΔHf			Solubility in ⁺	
B* 474 °C	2477.2	5	ΔFf			Acetone	
K			Viscosity centistokes			Carbon tet.	
c			η			Benzene	
t _k to						Ether	
t _x °C						n-Heptane	
A' to			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C' °C			(B ^v)			Water in	
A'* to			(A ^v)				
B'* °C			c _p liq. °				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
const. B°							
t _e °C	454.41	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminotetracosane		STRUCTURAL FORMULA	
		Tetracosylamine		$\text{CH}_3(\text{CH}_2)_{22}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{24}\text{H}_{51}\text{N}$	Molecular Weight	353.656
F.P. °C	70.	3			
F.P. 100%					
B.P. °C					
760 mm	415.	3		0.0724	5
100	322.	5		0.0367	5
30	279.	5			
10	246.	5		1.0701	5
1	192.	5			
Pressure mm 25°C					
t_e	1777.5	5			
Density g/ml 20°C					
d_4^{25}	0.8252 ^a	3			
d_4^{30}	0.8222 ^a	3			
a	0.8372	5			
b	-0.03600	5			
Ref. Index n_D 20°C					
25	1.4577 ^a	3			
30	1.4558 ^a	3			
"C"	0.7338	4			
MR (Obs.)	116.874	4			
MR (Calc.)	116.582	5			
($n_D - d/2$)					
Dielectric					
A 279 to	7.41749	5			
B 496 °C	2608.6	5			
C	160.	5			
A* 279 to	2.21700	5			
B* 486 °C	2515.5	5			
K					
t_k to					
t_x °C					
A' to					
B' °C					
C'					
A** to					
B** °C					
Ac to					
Bc t_c °C					
Cc					
Cryos. A°					
consta. B°					
t_e °C	465.91	5			
dt/dP °C/mm 25°C					
BP					
t_e 30 mm					
ΔH_m cal/g					
ΔH_v cal/g 25°C					
30 mm					
BP	53.36	5			
t_e	43.02	5			
t_e (d, e)	39.49	5			
t_e	39.14	5			
$\Delta H_v/T_e$	18.90	5			
d 279 to	74.61	5			
e 486 °C	0.0761	5			
d' to					
e' °C					
d c g/ml					
v c ml/g					
t c °C					
P c mm					
PV/RT 25°C					
30 mm					
BP	1.0000	5			
t_e	0.9007	5			
t_e	0.8645	5			
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes η °C					
B ^v to					
A ^v °C					
(B ^v) to					
(A ^v) °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f to					
g °K					
h					
f' to					
g' °K					
h'					
m to					
n °K					
o					
m' to					
n' °K					
o'					
Surface tension dynes/cm. 20°C					
30	29.50	5			
40	28.65	5			
40	28.82	5			
Parachor [P] 20°C					
30					
40					
Sugd.	998.8	5			
Exp. L.l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in					

^a For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 25

NAME		1-Aminopentacosane		Pentacosylamine		STRUCTURAL FORMULA		
						$\text{CH}_3(\text{CH}_2)_{23}\text{CH}_2\text{NH}_2$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{25}\text{H}_{53}\text{N}$	Molecular Weight	367.682			
		Ref.				Ref.		Ref.
F. P. °C	69.	3	dt/dP				f	to
F. P. 100%			°C/mm				g	°
B. P. °C			25°C				h	
760 mm	425.	3	BP	0.0734	5		h	
100	330.	5	t _e	0.0368	5		f'	to
30	287.	5	30 mm	1.0846	5		g'	°
10	254.	5					h'	
1	199.	5	ΔHm cal/g				m	to
Pressure mm 25°C			ΔHv cal/g				n	°K
t _e	1800.3	5	25°C				o	
Density g/ml 20°C			30 mm	52.15	5			
d _t 25	0.8262 ^a	3	BP	41.95	5		m'	to
d ₄ 30	0.8232 ^a	3	t _e (d, e)	38.41	5		n'	°K
			ΔHv/T _e	38.06	5		o'	
				18.81	5			
a	0.8382	5	d 287 to	73.44	5		Surface tension dynes/cm. 20°C	
b	-0.03600	5	e 497 °C	0.0741	5		γ	29.57 5
Ref. Index n _D 20°C	1.4584 ^a	3	d'				30	28.72 5
25	1.4565 ^a	3	e'				40	27.89 5
30			d _c g/ml				Parachor [P]	
"C"	0.7340	4	v _c ml/g				20°C	
MR (Obs.)	121.523	4	t _c °C				30	
MR (Calc.) (nD-d/2)	121.200	5	P _c mm				40	
Dielectric			PV/RT 25°C				Sugd.	1037.8 5
A 287 to	7.42070	5	30 mm	1.0000	5		Exp. L. l. %/wt. u.	
B 507 °C	2646.8	5	BP	0.8992	5		Dispersion	
C	158.	5	t _e	0.8621	5		Flash Point °C	
A* 287 to	2.23413	5	t _c				Fire Point	
B* 497 °C	2553.9	5	ΔHc kcal/m				M. Spec. Ultra V.	
K			ΔHf				X-Ray Dif.	
t _k to			ΔFf				Infrared	
t _k °C			Viscosity centistokes η				Solubility in ⁺	
A' to							Acetone	
B' °C			B ^v to				Carbon tet.	
C'			A ^v °C				Benzene	
A* to			(B ^v)				Ether	
B* °C			(A ^v)				n-Heptane	
Ac to			c _p liq. °				Ethanol	
Bc °C			c _p vap. °K				Water	
Cc °C			c _v vap.				Water in	
Cryos. A° const. B°								
t _e °C	477.42	5						

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminohexacosane		STRUCTURAL FORMULA	
		Hexacosylamine		$\text{CH}_3(\text{CH}_2)_{24}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{26}\text{H}_{55}\text{N}$	Molecular Weight	381.708
F. P. °C	75.	Ref.		Ref.	
F. P. 100%					
B. P. °C					
760 mm	434.	3		5	
100	338.	5		5	
30	295.	5		5	
10	261.	5		5	
1	205.	5		5	
Pressure mm 25°C					
t_e	1820.5	5			
Density g/ml 20°C	0.8272 ^a	3			
d_4^{25}	0.8241 ^a	3			
"C"	0.7341	4			
MR (Obs.)	126.172	4			
MR (Calc.) (nD-d/2)	125.818	5			
Dielectric					
A 295 to	7.42993	5			
B 518 °C	2688.5	5			
C	157.	5			
A* 295 to	2.25692	5			
B* 508 °C	2595.7	5			
K					
t_x to °C					
A' to °C					
B' to °C					
C' to °C					
A'*	to °C				
B'*	to °C				
Ac to °C					
Bc to °C					
Cc to °C					
Cryos. A° const. B°					
t_e °C	487.77	5			
dt/dP °C/mm 25°C					
BP	0.0742	5			
t_e	0.0369	5			
30 mm	1.0983	5			
ΔH_m cal/g					
ΔH_v cal/g 25°C					
30 mm BP	50.91	5			
t_e	40.89	5			
t_e (d, e)	37.33	5			
$\Delta H_v/T_e$	37.02	5			
$\Delta H_v/T_e$	18.73	5			
d 295 to °C	72.11	5			
e 508 to °C	0.0719	5			
d' to °C					
e' to °C					
d _c g/ml					
v _c ml/g					
t_c °C					
P _c mm					
PV/RT 25°C					
30 mm BP	1.0000	5			
t_e	0.8978	5			
t_c	0.8599	5			
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes °C					
η					
B ^v to °C					
A ^v to °C					
(B ^v) to °C					
(A ^v) to °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f to °K					
g to °K					
h to °K					
f' to °K					
g' to °K					
h' to °K					
m to °K					
n to °K					
o to °K					
m' to °K					
n' to °K					
o' to °K					
Surface tension dynes/cm. 20°C					
30	29.65	5			
40	28.77	5			
40	27.91	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1076.8	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 27

NAME		1-Aminoheptacosane		STRUCTURAL FORMULA	
		Heptacosylamine		$\text{CH}_3(\text{CH}_2)_{25}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{27}\text{H}_{57}\text{N}$	Molecular Weight	395.734
		Ref.			Ref.
F.P. °C	73.	3	dt/dP °C/mm		
F.P. 100%			25°C		f to °
B.P. °C			BP	0.0751	5
760 mm	443.	3	t _e	0.0370	5
100	346.	5	30 mm	1.1112	5
30	302.	5			f' to °
10	268.	5			g' °
1	211.	5			h'
			ΔHm cal/g		
Pressure mm 25°C			ΔHv cal/g		
t _e	1841.0	5	25°C		m to °K
			30 mm	49.81	5
			BP	39.91	5
Density g/ml 20°C	0.8282 ^a	3	t _e	36.35	5
d ₂₅	0.8251 ^a	3	t _e (d, e)	36.04	5
d ₄ 30					5
			ΔHv/T _e	18.65	5
a	0.8406	5	d 302 to	71.01	5
b	-0.03620	5	e 518 °C	0.0702	5
			d' to °C		
Ref. Index n _D 20°C	1.4597 ^a	3	e' to °C		
25	1.4578 ^a	3			
30			d _c g/ml		
"C"	0.7341	4	v _c ml/g		
MR (Obs.)	130.797	4	t _c °C		
MR (Calc.)	130.436	4	P _c mm		
(nD-d/2)					
Dielectric			PV/RT		
A 302 to	7.43104	5	25°C		
B 528 °C	2721.0	5	30 mm	1.0000	5
C 155.		5	BP	0.8965	5
			t _e	0.8579	5
A* 302 to	2.27105	5	t _c		
B* 518 °C	2628.4	5			
K			ΔHc kcal/m		
t _k to °C			ΔHf		
t _x to °C			ΔFf		
A' to °C			Viscosity centistokes		
B' to °C			η		
C' to °C					
A'*	to °C		B ^v to °C		
B'*	to °C		A ^v to °C		
			(B ^v) to °C		
			(A ^v) to °C		
Ac to °C					
Bc to °C			c _p liq. °		
Cc to °C					
Cryos. A°			c _p vap. °K		
const. B°					
t _e °C	498.15	5	c _v vap.		

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminooctacosane		STRUCTURAL FORMULA		
		Octacosylamine		$\text{CH}_3(\text{CH}_2)_{26}\text{CH}_2\text{NH}_2$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{28}\text{H}_{59}\text{N}$	Molecular Weight	409.760	
		Ref.		Ref.		
F. P. °C	78.	3	dt/dP °C/mm		f to	
F. P. 100%			25°C		g °K	
B. P. °C			BP	0.0760	5	h
760 mm	452.	3	t_e	0.0371	5	f' to
100	354.	5	t_e (d, e)		5	g' °K
30	309.	5	$\Delta\text{Hm cal/g}$	1.1241	5	h'
10	275.	5	$\Delta\text{Hv cal/g}$			m to
1	217.	5	25°C			n °K
Pressure mm 25°C			30 mm	48.78	5	o
t_e	1860.7	5	BP	38.99	5	m' to
Density g/ml 20°C			t_e	35.41	5	n' °K
d_4^{25}	0.8290 ^a	3	$\Delta\text{Hv}/T_e$	35.11	5	o'
d_4^{30}	0.8259 ^a	3		18.56	5	
a	0.8414	5	d 309 to	70.02	5	Surface tension
b	-0.03620	5	e 529 °C	0.0686	5	dynes/cm. 20°C
Ref. Index n_D^{20}			d'			30
25	1.4602 ^a	3	e'			40
30	1.4583 ^a	3				29.79
"C"	0.7342	4	d c g/ml			28.91
MR (Obs.)	135.429	4	v c ml/g			28.05
MR (Calc.)	135.540	5	t_c °C			5
(nD-d/2)			P c mm			5
Dielectric			PV/RT			Parachor [P]
A 309 to	7.43211	5	25°C			20°C
B 539 °C	2753.5	5	30 mm	1.0000	5	30
C	153.	5	BP	0.8951	5	40
A* 309 to	2.28519	5	t_e	0.8556	5	Sugd. 1154.8
B* 529 °C	2661.4	5	t_c			Exp. L. l. %/wt.
K			$\Delta\text{Hc kcal/m}$			u.
t_k to			ΔHf			Dispersion
t_x °C			ΔFf			Flash Point °C
A' to			Viscosity			Fire Point
B' °C			centistokes			M Spec.
C' °C			η °C			Ultra V.
A'*	to					X-Ray Dif.
B'*	°C					Infrared
Ac to						Solubility in +
Bc °C						Acetone
Cc °C						Carbon tet.
Cryos. A°						Benzene
const. B°						Ether
t_e °C	508.52	5				n-Heptane
						Ethanol
						Water
						Water in

^aFor undercooled liquid below normal F. P.⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 29

NAME		1-Aminononacosane		Nonacosylamine		STRUCTURAL FORMULA	
						$\text{CH}_3(\text{CH}_2)_{27}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{29}\text{H}_{61}\text{N}$	Molecular Weight 423.786				
	Ref.			Ref.		Ref.	
F. P. °C	77.	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°	
B. P. °C			BP	0.0767	5	h	
760 mm	460.	3	t _e	0.0372	5	f'	to
100	361.	5	t _e (d, e)	1.1361	5	g'	°
30	316.	5	ΔHm cal/g		5	h'	
10	281.	5	ΔHv cal/g			m	to
1	223.	5	25°C	47.71	5	n	*K
Pressure mm 25°C			30 mm	38.08	5	o	
t _e	1878.6	5	BP	34.51	5	m'	to
Density g/ml 20°C	0.8298 ^a	3	t _e	34.23	5	n'	*K
d ₄ ^t 25	0.8267 ^a	3	ΔHv/T _e	18.49	5	o'	
d ₄ ^t 30			d 316 to	68.82	5	Surface tension dynes/cm. 20°C	
a	0.8422	5	e 538 °C	0.0668	5	y	29.86
b	-0.03620	5	d'			30	28.97
Ref. Index n _D 20°C	1.4608 ^a	3	e'			40	28.11
25	1.4588 ^a	3	d c g/ml			Parachor [P] 20°C	
30			v c ml/g			30	
"C"	0.7344	4	t c °C			40	
MR (Obs.)	140.087	4	P _c mm			Sugd.	1193.8
MR (Calc.) (nD-d/2)	139.672	5	PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 316 to	7.43908	5	BP	0.8939	5	Flash Point °C	
B 548 °C	2789.7	5	t _e	0.8537	5	Fire Point	
C 152.	152.	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 316 to	2.30446	5	ΔHc kcal/m			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 538 °C	2697.6	5	ΔHf				
K			ΔFf				
c			Viscosity centistokes η				
t _k to °C							
t _x to °C			B ^v to °C				
A' to °C			A ^v to °C				
B' to °C			(B ^v)				
C' to °C			(A ^v)				
A'* to °C			c _p liq. °				
B'* to °C			c _p vap. °K				
Ac to °C			c _v vap.				
Bc to °C							
Cc to °C							
Cryos. A° const. B°							
t _e °C	517.75	5					
^a For undercooled liquid below normal F. P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Aminotriacontane		STRUCTURAL FORMULA	
		Triacontylamine		$\text{CH}_3(\text{CH}_2)_{28}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{30}\text{H}_{63}\text{N}$	Molecular Weight	437.812
F. P. °C	82.	Ref.			
F. P. 100%					
B. P. °C					
760 mm	469.	3		0.0776	5
100	369.	5		0.0373	5
30	323.	5		1.1490	5
10	288.	5			
1	229.	5			
Pressure mm 25°C					
t_e	1898.1	5			
Density g/ml 20°C					
d_4^{25}	0.8305 ^a	3			
d_4^{30}	0.8275 ^a	3			
"C"	0.7344	4			
MR (Obs.)	144.710	4			
MR (Calc.) (nD-d/2)	144.290	5			
Dielectric					
A 323 to	7.44004	5			
B 558 °C	2822.2	5			
C	150.	5			
A* 323 to	2.31762	5			
B* 548 °C	2730.7	5			
K					
t_x to					
t_x °C					
A' to					
B' °C					
C'					
A'*	to				
B'*	°C				
Ac to					
Bc °C					
Cc °C					
Cryos. A°					
consta. B°					
t_e °C	528.12	5			
dt/dP °C/mm 25°C					
BP					
t_e					
30 mm					
ΔH_m cal/g					
ΔH_v cal/g 25°C					
30 mm BP					
t_e					
t_e (d, e)					
$\Delta H_v/T_e$					
d 323 to	67.96	5			
e 548 °C	0.0654	5			
d' to					
e' °C					
d g/ml					
v c ml/g					
t_c °C					
P_c mm					
PV/RT 25°C					
30 mm BP					
t_e					
t_c					
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes η °C					
B ^v to					
A ^v °C					
(B ^v) to					
(A ^v) °C					
c_p liq. °K					
c_p vap. °K					
c_v vap.					
f to					
g °K					
h to					
f' °K					
g' to					
h' °K					
m to					
n °K					
o to					
m' °K					
n' to					
o' °K					
Surface tension dynes/cm. 20°C					
γ 30	29.91	5			
40	29.05	5			
40	28.22	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1232.8	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in +					
Acetone					
Carbon tet.					
Benzene					
Ether					
n-Heptane					
Ethanol					
Water					
Water in					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 31

NAME	1-Aminohentriacontane			STRUCTURAL FORMULA				
	Hentriacontylamine			$\text{CH}_3(\text{CH}_2)_{29}\text{CH}_2\text{NH}_2$				
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{31}\text{H}_{65}\text{N}$	Molecular Weight 451.838					
		Ref.			Ref.	Ref.		
F.P. °C	80.	3	dt/dP °C/mm			f to °C		
F.P. 100%			25°C			g		
B.P. °C			BP	0.0783	5	h		
760 mm	476.	3	t _e	0.0374	5	f' to °C		
100	375.	5	30 mm	1.1595	5	g'		
30	329.	5	ΔHm cal/g			h'		
10	294.	5	ΔHv cal/g			m to °K		
1	234.	5	25°C			n		
Pressure mm 25°C			30 mm	45.82	5	o		
t _e	1913.8	5	BP	36.44	5	m' to °K		
Density g/ml 20°C	0.8312 ^a	3	t _e (d, e)	32.88	5	n'		
t 25	0.8282 ^a	3	ΔHv/T _e	18.35	5	o'		
d ₄ 30			d 329 to °C	66.80	5	Surface tension dynes/cm. 20°C		
a	0.8432	5	e 556 to °C	0.0638	5	y	29.96	5
b	-0.03600	5	d'			30	29.11	5
Ref. Index n _D			e'			40	28.27	5
20°C	1.4617 ^a	3	d _c g/ml			Parachor [F] 20°C		
25	1.4598 ^a	3	v _c ml/g			30		
30			t _c °C			40		
"C"	0.7345	4	P _c mm			Sugd.	1271.8	5
MR (Obs.)	149.359	4	PV/RT 25°C			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	148.908	5	30 mm	1.0000	5	Dispersion		
Dielectric			BP	0.8914	5	Flash Point °C		
A 329 to °C	7.44500	5	t _e	0.8499	5	Fire Point		
B 566 °C	2852.6	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared		
C	149.	5	ΔHc kcal/m			Solubility in ⁺		
A* 329 to °C	2.33422	5	ΔHf			Acetone		
B* 566 °C	2761.3	5	ΔFf			Carbon tet.		
K			Viscosity centistokes η °C			Benzene		
t _k to °C			B ^v to °C			Ether		
t _k ' to °C			A ^v to °C			n-Heptane		
A' to °C			(B ^v)			Ethanol		
B' to °C			(A ^v)			Water		
C' to °C			c _p liq. °			Water in		
A'* to °C			c _p vap. °K					
B'* to °C			c _v vap.					
Ac to °C								
Bc to °C								
Cc to °C								
Cryos. A° const. B°								
t _e °C	536.21	5						

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminodotriacontane Dotriacontylamine		STRUCTURAL FORMULA $\text{CH}_3(\text{CH}_2)_{30}\text{CH}_2\text{NH}_2$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{32}\text{H}_{67}\text{N}$	Molecular Weight	465.864	
F. P. °C	85.	Ref.				
F. P. 100%						
B. P. °C						
760 mm	484.	3	dt/dP °C/mm 25°C		f to °K	
100	382.	5	BP	0.0790	5	g °K
30	336.	5	t _e	0.0374	5	h °K
10	300.	5	30 mm	1.1707	5	f' to °K
1	240.	5	ΔHm cal/g			g' °K
Pressure mm 25°C			ΔHv cal/g 25°C			h' °K
t _e	1931.2	5	30 mm	44.98	5	m to °K
Density g/ml 20°C			BP	35.68	5	n °K
d ₄ ²⁵	0.8319 ^a	3	t _e	32.08	5	o °K
d ₄ ³⁰	0.8288 ^a	3	t _e (d, e)	31.83	5	m' to °K
			ΔHv/T _e	18.26	5	n' °K
a	0.8443	5	d 336 to °C	65.99	5	o' °K
b	-0.03620	5	e 565 to °C	0.0626	5	Surface tension dynes/cm. 20°C
Ref. Index n _D 25	1.4622 ^a	3	d' to °C			30 30.02
30	1.4602 ^a	3	e' to °C			30 29.13
"C"	0.7346	4				40 28.27
MR (Obs.)	154.010	4	d _c g/ml			Parachor [P] 20°C
MR (Calc.) (n _D -d/2)	153.526	5	v _c ml/g			30
Dielectric			t _c °C			40
A 336 to °C	7.44411	5	P _c mm			Sugd. 1310.8
B 575 to °C	2879.4	5	PV/RT 25°C	1.0000	5	Exp. L.l. %/wt. u.
C 147.	147.	5	30 mm	0.8902	5	Dispersion
A* 336 to °C	2.34491	5	BP	0.8479	5	Flash Point °C
B* 565 to °C	2788.7	5	t _e			Fire Point
K			t _c			M Spec. Ultra V. X-Ray Dif. Infrared
t _x to °C			ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
A' to °C			ΔHf			
B' to °C			ΔFf			
C' to °C			Viscosity centistokes °C			
A'*	to °C		η			
B'*	to °C		B ^v to °C			
Ac to °C			A ^v to °C			
Bc to °C			(B ^v) to °C			
Cc to °C			(A ^v) to °C			
Cryos. A° const. B°			c _p liq. °K			
t _e °C	545.46	5	c _p vap. °K			
			c _v vap.			

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 33

NAME		1-Aminotritriacontane		Tritriacontylamine		STRUCTURAL FORMULA	
						$\text{CH}_3(\text{CH}_2)_{31}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{33}\text{H}_{69}\text{N}$	Molecular Weight	479.890		
		Ref.			Ref.	Ref.	
F. P. °C	83.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°
B. P. °C			25°C			h	
760 mm	491.	3	BP	0.0797	5	f'	to
100	388.	5	t _e	0.0375	5	g'	°
30	341.	5	30 mm	1.1812	5	h'	
10	305.	5	ΔHm cal/g			m	to
1	245.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1946.8	5	30 mm	44.09	5	m'	to
Density g/ml 20°C			BP	34.93	5	n'	°K
t	0.8325 ^a	3	t _e	31.33	5	o'	
d ₄ 25	0.8294 ^a	3	t _e (d, e)	31.10	5	Surface tension dynes/cm. 20°C	
d ₄ 30			ΔHv/T _e	18.19	5	γ	30.06
a	0.8449	5	d	341	to	30	29.18
b	-0.03620	5	e	574	°C	40	28.31
Ref. Index n _D 20°C	1.4626 ^a	3	d'		to	Parachor [F] 20°C	
25	1.4606 ^a	3	e'		°C	30	
30			d _c g/ml			40	
"C"	0.7347	4	v _c ml/g			Sugd.	1349.8
MR (Obs.)	158.650	4	t _c °C			Exp. L. l. %/wt. u.	
MR (Calc.)	158.144	5	P _c mm			Dispersion	
Dielectric			PV/RT 25°C			Flash Point °C	
A 341 to	7.44894	5	30 mm	1.0000	5	Fire Point	
B 584 °C	2909.9	5	BP	0.8892	5	M. Spec. Ultra V.	
C	146.	5	t _e	0.8464	5	X-Ray Dif.	
A* 341 to	2.36065	5	t _c			Infrared	
B* 574 °C	2819.2	5	ΔHc kcal/m			Solubility in ⁺	
K			ΔHf			Acetone	
t _k to			ΔFf			Carbon tet.	
t _x °C			Viscosity centistokes			Benzene	
A' to			η			Ether	
B' °C						n-Heptane	
C'						Ethanol	
A'* to			B ^v to			Water	
B'* °C			A ^v °C			Water in	
Ac to			(B ^v)				
Bc °C			(A ^v)				
Cc °C			c _p liq. °				
Cryos. A°			c _p vap. °K				
const. B°			c _v vap.				
t _e °C	553.56	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminotetatriacontane		STRUCTURAL FORMULA	
		Tettriacontylamine		CH ₃ (CH ₂) ₃₂ CH ₂ NH ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₃₄ H ₇₁ N	Molecular Weight	493.916
F. P. °C	87.	3			
F. P. 100%					
B. P. °C					
760 mm	499.	3		0.0805	5
100	395.	5		0.0376	5
30	348.	5		1.1925	5
10	311.	5			
1	250.	5			
Pressure mm 25°C					
t _e	1964.1	5			
Density g/ml 20°C	0.8331 ^a	3			
d ₄ ^t 25	0.8301 ^a	3			
d ₄ 30					
"a"	0.8451	5			
"b"	-0.03600	5			
Ref. Index n _D 20°C	1.4630 ^a	3			
25	1.4610 ^a	3			
30					
"C"	0.7347	4			
MR (Obs.)	163.291	4			
MR (Calc.) (n _D -d/2)	162.762	5			
Dielectric					
A 348 to	7.44804	5			
B 593 °C	2936.7	5			
C	144.	5			
A* 348 to	2.37063	5			
B* 583 °C	2846.7	5			
K					
c					
t _k to					
t _x °C					
A' to					
B' °C					
C'					
A'* to					
B'* °C					
Ac to					
Bc °C					
Cc °C					
Cryos. A* const.					
B*					
t _e °C	562.81	5			
dt/dP °C/mm 25°C					
BP					
t _e 30 mm					
ΔHm cal/g					
ΔHv cal/g 25°C					
30 mm	43.34	5			
BP	34.27	5			
t _e	30.68	5			
t _e (d, e)	30.44	5			
ΔHv/T _e	18.13	5			
d 348 to	64.23	5			
e 583 °C	0.0600	5			
d' to					
e' °C					
d _c g/ml					
v _c ml/g					
t _c °C					
P _c mm					
PV/RT 25°C					
30 mm	1.0000	5			
BP	0.8880	5			
t _e	0.8444	5			
t _c					
ΔHc kcal/m					
ΔHf					
ΔFf					
Viscosity centistokes					
η °C					
B ^v to					
A ^v °C					
(B ^v) to					
(A ^v) °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f to					
g °K					
h to					
f' °K					
g' to					
h' °K					
m to					
n °K					
o to					
m' °K					
n' to					
o' °K					
Surface tension dynes/cm. 20°C					
γ 30	30.11	5			
40	29.25	5			
40	28.41	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1388.8	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in +					
Acetone					
Carbon tet.					
Benzene					
Ether					
n-Heptane					
Ethanol					
Water					
Water in					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 35

NAME		1-Aminopentatriacontane			STRUCTURAL FORMULA		
		Pentatriacontylamine			$\text{CH}_3(\text{CH}_2)_{33}\text{CH}_2\text{NH}_2$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{35}\text{H}_{73}\text{N}$	Molecular Weight	507.942		
		Ref.			Ref.		
F.P. °C	86.	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°
B.P. °C			25°C			h	---
760 mm	506.	3	BP	0.0811	5	f'	to
100	401.	5	t _e	0.0377	5	g'	°
30	354.	5	30 mm	1.2029	5	h'	
10	317.	5	ΔHm cal/g			m	to
1	255.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1978.8	5	30 mm	42.55	5	m'	to
Density g/ml 20°C			BP	33.58	5	n'	°K
t	0.8337 ^a	3	t _e	29.96	5	o'	
d ₄ 25	0.8306 ^a	3	t _e (d, e)	29.76	5	Surface tension dynes/cm. 20°C	
d ₄ 30			ΔHv/T _e	18.03	5	γ	30.16
a	0.8461	5	d 354 to	63.36	5		29.27
b	-0.03620	5	e 591 °C	0.0589	5		28.41
Ref. Index			d'			Parachor [P]	
n _D 20°C	1.4634 ^a	3	e'			20°C	
25	1.4614 ^a	3	d _c g/ml			30	
30			v _c ml/g			40	
"C"	0.7348	4	t _c °C			Sugd.	1427.8
MR (Obs.)	167.932	4	P _c mm			Exp. L. l. %/wt. u.	
MR (Calc.)	167.380	5	PV/RT			Dispersion	
(nD-d/2)			25°C			Flash Point °C	
Dielectric			30 mm	1.0000	5	Fire Point	
A 354 to	7.45275	5	BP	0.8868	5	M. Spec. Ultra V.	
B 601 °C	2967.2	5	t _e	0.8426	5	X-Ray Dif.	
C	143.	5	t _c			Infrared	
A* 354 to	2.38613	5	ΔHc kcal/m			Solubility in ⁺	
B* 591 °C	2877.6	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to			η °C			Ether	
t _x °C			B ^v to			n-Heptane	
A' to			A ^v °C			Ethanol	
B' °C			(B ^v)			Water	
C' °C			(A ^v)			Water in	
A'* to			c _p liq. °				
B'* °C			c _p vap. °K				
Ac to			c _v vap.				
Bc t _c °C							
Cc °C							
Cryos. A°							
const. B°							
t _e °C	570.89	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminohexatriacontane		STRUCTURAL FORMULA	
		Hexatriacontylamine		CH ₃ (CH ₂) ₃₄ CH ₂ NH ₂	
Mole % Pur.	Ref.	Molecular Formula	C ₃₆ H ₇₅ N	Molecular Weight	521.968
F. P. °C	90.	3			
F. P. 100%					
B. P. °C					
760 mm	512.	3		0.0817	5
100	406.	5		0.0378	5
30	358.	5		1.2118	5
10	321.	5			
1	259.	5			
Pressure mm 25°C					
t _e	1991.5	5			
Density g/ml 20°C					
d ₄ ²⁵	0.8342 ^a	3			
d ₄ ³⁰	0.8311 ^a	3			
"a"	0.8466	5			
"b"	-0.03620	5			
Ref. Index n _D 20°C					
25	1.4637 ^a	3			
30	1.4617 ^a	3			
"C"	0.7348	4			
MR (Obs.)	172.562	4			
MR (Calc.) (n _D -d/2)	171.998	5			
Dielectric					
A 358 °C	7.45569	5			
B 608 °C	2992.0	5			
C	142.	5			
A* 358 °C	2.39967	5			
B* 598 °C	2902.7	5			
K					
t _x to °C					
A' to °C					
B' to °C					
C' to °C					
A'*	to °C				
B'*	to °C				
Ac to °C					
Bc to °C					
Cc to °C					
Cryos. A° const. B°					
t _e °C	577.83	5			
dt/dP °C/mm					
25°C					
BP					
t _e					
30 mm					
ΔHm cal/g					
ΔHv cal/g					
25°C					
30 mm					
BP					
t _e					
t _e (d, e)					
t _e					
ΔHv/T _e					
d 358 to °C	62.42	5			
e 598 to °C	0.0577	5			
d' to °C					
e' to °C					
d _c g/ml					
v _c ml/g					
t _c °C					
P _c mm					
PV/RT 25°C					
30 mm					
BP					
t _e					
t _c					
ΔHc kcal/m					
ΔHf					
ΔFf					
Viscosity centistokes					
η °C					
B ^v to °C					
A ^v to °C					
(B ^v) to °C					
(A ^v) to °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f to °K					
g to °K					
h to °K					
f' to °K					
g' to °K					
h' to °K					
m to °K					
n to °K					
o to °K					
m' to °K					
n' to °K					
o' to °K					
Surface tension dynes/cm. 20°C					
30	30.20	5			
40	29.31	5			
40	28.44	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1466.8	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in +					
Acetone					
Carbon tet.					
Benzene					
Ether					
n-Heptane					
Ethanol					
Water					
Water in					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 37

NAME		1-Aminoheptatriacontane				STRUCTURAL FORMULA				
		Heptatriacontylamine				$\text{CH}_3(\text{CH}_2)_{35}\text{CH}_2\text{NH}_2$				
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{37}\text{H}_{77}\text{N}$	Molecular Weight	535.994					
		Ref.			Ref.	Ref.				
F. P. °C	88.	3	dt/dP			f		to		
F. P. 100%			°C/mm			g		°		
B. P. °C			25°C			h		---		
760 mm	519.	3	BP	0.0824	5	f'		to		
100	413.	5	t _e	0.0379	5	g'		°		
30	364.	5	30 mm	1.2214	5	h'				
10	327.	5	ΔHm cal/g			m		to		
1	264.	5	ΔHv cal/g			n		°K		
Pressure mm 25°C			30 mm	41.08	5	o				
t _e	2006.6	5	BP	32.29	5	m'		to		
Density g/ml 20°C	0.8347 ^a	3	t _e	28.67	5	n'		°K		
t ₂₅	0.8316 ^a	3	t _e (d, e)	28.50	5	o'				
d ₄ ³⁰			ΔHv/T _e	17.89	5	Surface tension dynes/cm. 20°C				
a	0.8471	5	d 364 to	61.74	5	γ	30.24	5		
b	-0.03620	5	e 606 °C	0.0567	5		30	29.35	5	
Ref. Index			d'				40	28.48	5	
n _D 20°C	1.4640 ^a	3	e'			Parachor [P]				
25	1.4621 ^a	3					20°C			
30			d _c g/ml				30			
"C"	0.7348	4	v _c ml/g				40			
MR (Obs.)	177.191	4	t _c °C				Sugd.	1505.8	5	
MR (Calc.) (nD-d/2)	176.616	5	P _c mm			Exp. L. l. %/wt. u.				
Dielectric			PV/RT 25°C			Dispersion				
A 364 to	7.45306	5	30 mm	1.0000	5	Flash Point °C				
B 616 °C	3013.1	5	BP	0.8848	5	Fire Point				
C	140.	5	t _e	0.8395	5	M. Spec. Ultra V.				
A* 364 to	2.40714	5	t _c			X-Ray Dif.				
B* 606 °C	2924.5	5	ΔHc kcal/m			Infrared				
K			ΔHf			Solubility in ⁺				
c			ΔFf			Acetone				
t _k --- to °C			Viscosity centistokes			Carbon tet.				
t _x --- to °C			η			Benzene				
A' to						Ether				
B' --- °C			B ^v to			n-Heptane				
C'			A ^v --- °C			Ethanol				
A'* to			(B ^v) ---			Water				
B'* °C			(A ^v) ---			Water in				
Ac to			c _p liq. °							
Bc t _c °C			c _p vap. °K							
Cc --- °C			c _v vap.							
Cryos. A°										
consts. B°										
t _e °C	585.95	5								

^aFor undercooled liquid below normal F. P.⁺grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		1-Aminoocotriacontane		STRUCTURAL FORMULA	
		Octatriacontylamine		$\text{CH}_3(\text{CH}_2)_{36}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{38}\text{H}_{79}\text{N}$	Molecular Weight	550.020
F.P. °C	92.	Ref.	3	dt/dP °C/mm	
F.P. 100%				25°C	
B.P. °C	525.	3		BP	0.0829
760 mm	418.	5		t_e	0.0379
100	369.	5		30 mm	1.2303
30	332.	5		$\Delta\text{Hm cal/g}$	
10	268.	5		$\Delta\text{Hv cal/g}$	
1				25°C	
Pressure mm 25°C				30 mm	
t_e	2019.3	5		BP	40.35
Density g/ml 20°C	0.8352 ^a	3		t_e	31.68
d_4^{25}	0.8321 ^a	3		t_e (d, e)	28.06
				$\Delta\text{Hv}/T_e$	27.90
					17.82
a	0.8476	5		d 369 to	60.89
b	-0.03620	5		e 613 °C	0.0556
Ref. Index				d' to	
n_D^{20}	1.4643 ^a	3		e' °C	
25	1.4624 ^a	3		d c g/ml	
30				v_c ml/g	
"C"	0.7348	4		t_c °C	
MR (Obs.)	181.820	4		P_c mm	
MR (Calc.)	181.234	5		PV/RT	
(nD-d/2)				25°C	
Dielectric				30 mm	
A 369 to	7.45595	5		BP	1.0000
B 623 °C	3037.9	5		t_e	0.8839
C	139.	5		t_c	0.8380
A* 369 to	2.42007	5		$\Delta\text{Hc kcal/m}$	
B* 613 °C	2949.7	5		ΔHf	
K				ΔFi	
c				Viscosity	
t_k to				centistokes	
t_x °C				η °C	
A' to				B^v to	
B' °C				A^v °C	
C' °C				(B ^v) to	
A'* to				(A ^v) °C	
B'* °C				c_p liq. °K	
Ac to				c_p vap. °K	
Bc t_c °C				c_v vap.	
Cc °C					
Cryos. A°					
const. B°					
t_e °C	592.89	5			
				+ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE VI. AMINOALKANES

No. 39

NAME		1-Aminononatriacontane		STRUCTURAL FORMULA			
		Nonatriacontylamine		$\text{CH}_3(\text{CH}_2)_{37}\text{CH}_2\text{NH}_2$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{39}\text{H}_{81}\text{N}$	Molecular Weight 564.046				
		Ref.			Ref.		
F. P. °C	90.	3	dt/dP °C/mm		f to		
F. P. 100%			25°C		g °		
B. P. °C			BP	0.0836	5	h	
760 mm	532.	3	t _e	0.0380	5	f' to	
100	424.	5	30 mm	1.2407	5	g' °	
30	375.	5	ΔHm cal/g			h'	
10	337.	5				m to	
1	273.	5	ΔHv cal/g			n °K	
Pressure mm 25°C			25°C			o	
t _e	2034.5	5	30 mm	39.71	5	m' to	
Density g/ml 20°C			BP	31.15	5	n' °K	
25	0.8356 ^a	3	t _e	27.55	5	o'	
d ₄ 30	0.8326 ^a	3	t _e (d, e)	27.39	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	17.77	5	30	30.31
a	0.8476	5	d 375 to	60.14	5	40	29.45
b	-0.03600	5	e 621 °C	0.0545	5	40	28.60
			d' to			Parachor [P]	
Ref. Index			e' °C			20°C	
n _D 20°C	1.4646 ^a	3				30	
25	1.4626 ^a	3	d _c g/ml			40	
30			v _c ml/g			Sugd.	1583.8
"C"	0.7349	4	t _c °C			Exp. L. l. %/wt. u.	
MR (Obs.)	186.471	4	P _c mm			Dispersion	
MR (Calc.)	185.852	5	PV/RT 25°C	1.0000	5	Flash Point °C	
(nD-d/2)			30 mm	0.8829	5	Fire Point	
Dielectric			BP	0.8365	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A 375 to	7.46046	5	t _e			Solubility in ⁺	
B 631 °C	3068.4	5	t _c			Acetone	
C	138.	5	ΔHc kcal/m			Carbon tet.	
A* 375 to	2.43377	5	ΔHf			Benzene	
B* 621 °C	2980.4	5	ΔFf			Ether	
K			Viscosity centistokes			n-Heptane	
t _k to			η °C			Ethanol	
t _x °C						Water	
A' to			B ^v to			Water in	
B' °C			A ^v °C				
C' °C			(B ^v)				
A'* to			(A ^v)				
B'* °C			c _p liq. °				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
consts. B°							
t _e °C	601.01	5					
^a For undercooled liquid below normal F. P.		⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		1-Aminotetracontane		STRUCTURAL FORMULA	
		Tetracontylamine		$\text{CH}_3(\text{CH}_2)_{38}\text{CH}_2\text{NH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{40}\text{H}_{83}\text{N}$	Molecular Weight	578.072
F.P. °C	94.	Ref.			Ref.
F.P. 100%					
B.P. °C					
760 mm	538.	3		0.0842	5
100	429.	5		0.0381	5
30	380.	5		1.2496	5
10	342.	5			
1	277.	5			
Pressure mm 25°C					
t_e	2047.0	5			
Density g/ml 20°C					
d_4^{25}	0.8360 ^a	3			
d_4^{30}	0.8329 ^a	3			
"a"	0.8484	5			
"b"	-0.03620	5			
Ref. Index n_D^{20}					
25	1.4649 ^a	3			
30	1.4629 ^a	3			
"C"	0.7350	4			
MR (Obs.)	191.123	4			
MR (Calc.)	190.470	5			
($n_D - d/z$)					
Dielectric					
A 380 to	7.46326	5			
B 638 °C	3093.2	5			
C	137.	5			
A* 380 to	2.44611	5			
B* 628 °C	3005.6	5			
K					
t_k — to					
t_x — °C					
A' — to					
B' — °C					
C'					
A''* to					
B''* °C					
Ac — to					
Bc t_c °C					
Cc					
Cryos. A°					
const. B°					
t_e °C	607.95	5			
dt/dP °C/mm 25°C					
BP					
t_e 30 mm					
ΔH_m cal/g					
ΔH_v cal/g 25°C					
30 mm BP					
t_e	39.06	5			
t_e (d, e)	30.58	5			
$\Delta H_v/T_e$	26.95	5			
	26.83	5			
	17.68	5			
d 380 to	59.41	5			
e 628 °C	0.0536	5			
d' — to					
e' — °C					
d _c g/ml					
v _c ml/g					
t _c °C					
P _c mm					
PV/RT 25°C					
30 mm BP					
t_e	1.0000	5			
t_c	0.8820	5			
	0.8350	5			
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes					
η °C					
B ^v — to					
A ^v — °C					
(B ^v) — to					
(A ^v) — °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f — to					
g — °K					
h — to					
f' — to					
g' — °K					
h' — to					
m — to					
n — °K					
o — to					
m' — to					
n' — °K					
o' — to					
Surface tension dynes/cm. 20°C					
γ 30	30.34	5			
40	29.45	5			
40	28.58	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1622.8	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 41

NAME		2-Aminopropane		STRUCTURAL FORMULA	
		Isopropylamine		$\text{CH}_3\text{CH}(\text{NH}_2)\text{CH}_3$	
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_3\text{H}_9\text{N}$	Molecular Weight 59.110		
	Ref.			Ref.	Ref.
F. P. °C	-95.2	3	dt/dP °C/mm		f to
F. P. 100%			25°C	0.0448	g °
B. P. °C			BP	0.0359	h
760 mm	32.4	3	t _e	0.0338	f' to
100	-13.4	5	30 mm	0.5123	g' °
30	-33.8	5	ΔHm cal/g		h'
10	-49.3	5	ΔHv cal/g		m to
1	-75.2	5	25°C	111.65	n °K
Pressure mm 25°C	574.9	5	30 mm	125.32	o
t _e	818.9	5	BP	109.94	m' to
Density g/ml 20°C	0.6889	3	t _e	109.46	n' °K
t _e 25	0.6839	3	t _e (d, e)	109.46	o'
d ₄ 30			ΔHv/T _e	21.03	
a	0.7092	5	d -34 to	117.47	Surface tension dynes/cm. 20°C
b	-0.03936	5	e 54 °C	0.2325	30
Ref. Index n _D 20°C	1.3742	3	d' to		40
25	1.3711	3	e' °C		19.53
30			d _c g/ml		18.34
"C"	0.7269	4	v _c ml/g		17.16
MR (Obs.)	19.604	4	t _c °C		Parachor [P] 20°C
MR (Calc.) (n _D -d/2)	19.604	5	P _c mm		30
Dielectric			PV/RT 25°C	0.9656	40
A -34 to	7.10666	5	30 mm	1.0000	Sugd. 180.8
B 64 °C	1121.5	5	BP	0.9588	Exp. L. l. %/wt. u.
C	233.	5	t _e	0.9569	Dispersion
A* -34 to	1.35243	5	t _c		Flash Point °C
B* 54 °C	1051.4	5	ΔHc kcal/m		Fire Point
K			ΔHf		M. Spec. Ultra V.
t _k to			ΔFf		X-Ray Dif. Infrared
t _k °C			Viscosity centistokes η °C		Solubility in ⁺
A' to			B ^v to		Acetone
B' °C			A ^v °C		Carbon tet.
C' °C			(B ^v)		Benzene
A'* to			(A ^v)		Ether
B'* °C			c _p liq. °		n-Heptane
Ac to			c _p vap. °K		Ethanol
Bc t _c °C			c _v vap.		Water
Cc °C					Water in
Cryos. A° const. B°					
t _e °C	34.45	5			
* grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		2-Aminobutane		STRUCTURAL FORMULA	
		sec-Butylamine		CH ₃ CH(NH ₂)CH ₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₁₁ N	Molecular Weight	73.136
F.P. °C	-104.5	Ref.	3	dt/dP °C/mm	
F.P. 100%				25°C	0.1291
B.P. °C				BP	0.0388
760 mm	63.		3	t _e	0.0339
100	13.		5	30 mm	0.5569
30	-9.		5	ΔHm cal/g	
10	-26.		5	ΔHv cal/g	
1	-54.		5	25°C	106.68
Pressure mm	172.6		5	30 mm	113.68
25°C	901.8		5	BP	98.94
t _e				t _e	97.91
Density g/ml	0.7246		3	t _e (d, e)	97.88
20°C				ΔHv/T _e	20.98
d ₄ ^t	0.7201		3	d -9 to	111.88
d ₄ ³⁰				e 88 °C	0.2055
a	0.7426		5	d'	
b	-0.03873		5	e'	
Ref. Index n _D				d _c g/ml	
20°C	1.3934		3	v _c ml/g	
25	1.3907		3	t _c °C	
30				P _c mm	
"C"	0.7246		4	PV/RT	
MR (Obs.)	24.111		4	25°C	0.9847
MR (Calc.)	24.222		5	30 mm	1.0000
(n _D -d/2)				BP	0.9544
Dielectric				t _e	0.9497
A -9 to	7.15069		5	t _c	
B 98 °C	1238.3		5	ΔHc kcal/m	
C	227.		5	ΔHf	
A* -9 to	1.45818		5	ΔFf	
B* 88 °C	1164.2		5	Viscosity centistokes	
K				η °C	
t _k to				B ^v to	
t _x °C				A ^v °C	
A' to				(B ^v) to	
B' °C				(A ^v) °C	
C' °C				c _p liq. °K	
A'* to				c _p vap. °K	
B'* °C				c _v vap.	
Ac to					
Bc t _c °C					
Cc °C					
Cryos. A°					
const. B°					
t _e °C	68.13		5		
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE VI. AMINOALKANES

No. 43

NAME		1-Amino-2-methylpropane		STRUCTURAL FORMULA	
		iso-Butylamine		$\text{NH}_2\text{CH}_2\text{CH}(\text{CH}_3)_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_4\text{H}_{11}\text{N}$	Molecular Weight	73.136
		Ref.			Ref.
F. P. °C	-86.7	3	dt/dP °C/mm		f to
F. P. 100%			25°C	0.1547	g °
B. P. °C			BP	0.0393	h
760 mm	68.	3	t _e	0.0339	f' to
100	18.	5	30 mm	0.5641	g' °
30	-5.	5	ΔHm cal/g		h'
10	-22.	5	ΔHv cal/g		m to
1	-50.	5	25°C	109.46	n °K
Pressure mm	140.7	5	30 mm	115.72	o
t _e 25°C	915.0	5	BP	100.57	m' to
Density g/ml	0.7346	3	t _e	99.43	n' °K
25	0.7296	3	t _e (d, e)	99.39	o'
d ₄ ^t 30			ΔHv/T _e	20.97	
a	0.7546	5	d -5 to	114.74	Surface tension dynes/cm.
b	-0.03978	5	e 94 °C	0.2085	20°C
Ref. Index n _D			d' to		30
25	1.3972	3	e' °C		40
30	1.3945	3	d _g g/ml		Parachor [P]
"C"	0.7212	4	v _c ml/g		20°C
MR (Obs.)	23.986	4	t _c °C		30
MR (Calc.) (nD-d/2)	24.222	5	P _c mm		40
Dielectric			PV/RT		Sugd.
A -5 to	7.15696	5	25°C	0.9870	219.8
B 104 °C	1257.2	5	30 mm	1.0000	Exp. L.l./wt. u.
C 226.	226.	5	BP	0.9534	Dispersion
A* -5 to	1.46023	5	t _e	0.9483	Flash Point °C
B* 94 °C	1182.6	5	t _c		Fire Point
K			ΔHc kcal/m		M. Spec. Ultra V.
t _k to			ΔHf		X-Ray Dif.
t _x °C			ΔFf		Infrared
A' to			Viscosity centistokes		Solubility in ⁺
B' °C			η °C		Acetone
C' °C			B ^v to		Carbon tet.
A'* to			A ^v °C		Benzene
B'* °C			(B ^v)		Ether
Ac to			(A ^v)		n-Heptane
Bc t _c °C			c _p liq. °		Ethanol
Cc °C			c _p vap. °K		Water
Cryos. A°			c _v vap.		Water in
const. B°					
t _e °C	73.65	5			

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		2-Amino-2-methylpropane tert-Butylamine			STRUCTURAL FORMULA			
Mole % Pur.		Ref. 3	Molecular Formula $C_4H_{11}N$	Molecular Weight 73.136		$CH_3CNH_2(CH_3)_2$		
		Ref.			Ref.	Ref.		
F.P. °C	-67.5	3	dt/dP °C/mm			f to		
F.P. 100%			25°C	0.0672	5	g °K		
B.P. °C			BP	0.0370	5	h		
760 mm	44.4	3	t _e	0.0338	5	f' to		
100	-2.9	5	30 mm	0.5301	5	g' °K		
30	-24.0	5	ΔHm cal/g			h'		
10	-40.1	5	ΔHv cal/g			m to		
1	-66.9	5	25°C	96.52	5	n °K		
Pressure mm 25°C	362.1	5	30 mm	106.06	5	o		
t _e	851.4	5	BP	92.76	5	m' to		
Density g/ml 20°C	0.6958	3	t _e	92.13	5	n' °K		
d ₄ ^t 25	0.6908	3	t _e (d, e)	92.13	5	o'		
d ₄ ^t 30			ΔHv/T _e	21.01	5	Surface tension dynes/cm. 20°C		
a	0.7160	5	d -24 to	101.39	5	30	18.99	5
b	-0.03948	5	e 68 °C	0.1945	5	40	17.86	5
Ref. Index n _D 20°C	1.3784	3	d' to			40	16.74	5
25	1.3760	3	e' °C			Parachor [P]		
30			d _c g/ml			20°C		
"C"	0.7273	4	v _c ml/g			30		
MR (Obs.)	24.256	4	t _c °C			40		
MR (Calc.) (nD-d/2)	24.222	5	P _c mm			Sugd.	219.8	5
Dielectric			PV/RT			Exp. L. l. %/wt. u.		
A -24 to	7.13044	5	25°C	0.9739	5	Dispersion		
B 78 °C	1170.4	5	30 mm	1.0000	5	Flash Point °C		
C	231.	5	BP	0.9570	5	Fire Point		
A* -24 to	1.45590	5	t _e	0.9540	5	M Spec.		
B* 68 °C	1098.5	5	t _c			Ultra V.		
K			ΔHc kcal/m			X-Ray Dif.		
t _x to			ΔHf			Infrared		
t _x °C			ΔFf			Solubility in +		
A' to			Viscosity centistokes			Acetone		
B' °C			η °C			Carbon tet.		
C' °C			B ^v to			Benzene		
A' * to			A ^v °C			Ether		
B' * °C			(B ^v) to			n-Heptane		
A _c to			(A ^v) °C			Ethanol		
B _c t _c °C			c _p liq. °K			Water		
C _c °C			c _p vap. °K			Water in		
Cryos. A* const. B*			c _v vap.					
t _e °C	47.63	5						
							+ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

TABLE VI. AMINOALKANES

No. 45

NAME		Methyl-n-hexylamine			STRUCTURAL FORMULA			
					CH ₃ NHCH ₂ (CH ₂) ₃ CH ₃			
Mole % Pur.	Ref. 3	Molecular Formula C ₇ H ₁₇ N	Molecular Weight 115.214					
F. P. °C	-31.	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C	2.965	5	g	°C	
B. P. °C			BP	0.0464	5	h	---	
760 mm	142.	3	t _e	0.0343	5	f'	to	
100	83.	5	30 mm	0.6723	5	g'	°C	
30	56.	5	ΔHm cal/g			h'		
10	35.	5				m	to	
1	1.	5	ΔHv cal/g			n	°K	
Pressure mm 25°C	5.33	5	25°C	97.66	5	o		
t _e	1110.9	5	30 mm	92.55	5			
Density g/ml 20°C	0.7601	3	BP	79.20	5	m'	to	
d ₄ 25	0.7651	3	t _e	77.21	5	n'	°K	
d ₄ 30			t _e (d, e)	77.05	5	o'		
a	0.7401	5	ΔHv/T _e	20.73	5	Surface tension dynes/cm. 20°C		
b	-0.00100	5	d _e 56 to	101.20	5	γ	24.37	5
Ref. Index n _D 20°C	1.4257	3	e 176 to	0.1550	5		25.68	5
25	1.4237	3	d' to				27.03	5
30			e' °C			Parachor [P]		
"C"	0.7441	4	d _c g/ml			20°C		
MR (Obs.)	38.814	4	v _c ml/g			30		
MR (Calc.)	38.076	5	t _c °C			40		
Dielectric			P _c mm			Sugd.	336.8	5
A 56 to	7.24486	5	PV/RT			Exp. L. l. %/wt. u.		
B 186 °C	1544.9	5	25°C	1.0058	5	Dispersion		
C	212.	5	30 mm	1.0000	5	Flash Point °C		
A* 56 to	1.68504	5	BP	0.9424	5	Fire Point		
B* 176 °C	1462.1	5	t _e	0.9306	5	M. Spec. Ultra V.		
K			t _c			X-Ray Dif.		
t _k to			ΔHc kcal/m			Infrared		
t _x °C			ΔHf			Solubility in Acetone		
A' to			ΔFf			Carbon tet.		
B' °C			Viscosity centistokes			Benzene		
C' °C			η °C			Ether		
A'* to			B _v to			n-Heptane		
B'* °C			A _v °C			Ethanol		
Ac to			(B _v)			Water		
Bc t _c °C			(A _v)			Water in		
Cc t _c °C			c _p liq. °C					
Cryos. A°			c _p vap. °K					
const. B°			c _v vap.					
t _e °C	155.90	5						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		Methyl-n-octylamine			STRUCTURAL FORMULA		
					CH ₃ NHCH ₂ (CH ₂) ₆ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₉ H ₂₁ N	Molecular Weight	143.266		
		Ref.			Ref.		
F. P. °C	-11.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	21.91	5	g	°K
B. P. °C	186.	3	BP	0.0506	5	h	
760 mm	121.	5	t _e	0.0345	5	f'	to
100	92.	5	30 mm	0.7368	5	g'	°K
30	69.	5	ΔHm cal/g			h'	
10	32.	5	ΔHv cal/g			m	to
1			25°C	93.54	5	n	°K
Pressure mm 25°C	0.60	5	30 mm	83.56	5	o	
t _e	1224.8	5	BP	70.79	5	m'	to
Density g/ml 20°C	0.7764	3	t _e	68.35	5	n'	°K
d ₄ ^t 25	0.7726	3	t _e (d,e)	68.18	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.47	5	Surface tension dynes/cm. 20°C	
a	0.7916	5	d 92 to	96.02	5	30	25.53
b	-0.03760	5	e 225 °C	0.1357	5	40	24.55
Ref. Index n _D 20°C	1.429	3	d' to			40	23.59
25	1.427	3	e' °C			Parachor [P] 20°C	
30			d g/ml			30	
"C"	0.7338	4	v _c ml/g			40	
MR (Obs.)	47.571	4	t _c °C			Sugd.	414.8
MR (Calc.)	47.312	5	P _c mm			Exp. L.l.%/wt. u.	
Dielectric			PV/RT 25°C	1.0049	5	Dispersion	
A 92 to	7.28925	5	30 mm	1.0000	5	Flash Point °C	
B 235 °C	1719.3	5	BP	0.9359	5	Fire Point	
C	204.	5	t _e	0.9202	5	M Spec.	
A* 92 to	1.79450	5	t _c			Ultra V.	
B* 225 °C	1632.4	5	ΔHc kcal/m			X-Ray Dif.	
K			ΔHf			Infrared	
c			ΔFf			Solubility in +	
t _k to			Viscosity centistokes			Acetone	
t _x °C			η °C			Carbon tet.	
A' to			B ^v to			Benzene	
B' °C			A ^v °C			Ether	
C' °C			(B ^v) to			n-Heptane	
A'° to			(A ^v) °C			Ethanol	
B'° °C			c _p liq. °K			Water	
Ac to			c _p vap. °K			Water in	
Bc t _c °C			c _v vap.				
Cc t _c °C							
Cryos. A° const. B°							
t _e °C	205.24	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 47

NAME		Dimethylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NH		
Mole % Pur.	Ref. 3	Molecular Formula C ₂ H ₇ N	Molecular Weight 45.084				
		Ref.			Ref.		
F.P. °C	-92.19	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°
B.P. °C			BP	0.0199	5	h	-----
760 mm	6.88	3	t _e	0.0335	5	f'	to
100	-35.71	5	t _e 30 mm	0.0338	5	g'	°
30	-54.65	5	ΔHm cal/g	0.4751	5	h'	
10	-69.07	5	ΔHv cal/g			m	to
1	-92.99	5	25°C	125.37	5	n	*K
Pressure mm 25°C	1475.8	5	30 mm	147.63	5	o	
t _e	749.2	5	BP	130.46	5	m'	to
Density g/ml 20°C	0.6556 ^a	3	t _e (d, e)	130.57	5	n'	*K
d ₄ ²⁵	0.6496 ^a	3	ΔHv/T _e	130.56	5	o'	
d ₄ ³⁰				21.05	5	Surface tension dynes/cm. 20°C	
a	0.6805	5	d -55 to	132.38	5	γ	17.73
b	-0.00109	5	e 27 °C	0.2790	5		30 16.33
Ref. Index n _D 20°C	1.358 ^a	3	d' 27 °C				40 14.95
25	1.354 ^a	3	e' to °C			Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.7324	4	v _c ml/g			30	
MR (Obs.)	15.101	4	t _c °C			40	
MR (Calc.)	15.186	5	P _c mm			Sugd.	141.8
Dielectric			PV/RT 25°C	0.9438	5	Exp. L. l. %/wt.	
A -55 to	7.06396	5	30 mm	1.0000	5	u.	
B 37 °C	1024.4	5	BP	0.9625	5	Dispersion	
C	238.	5	t _e	0.9629	5	Flash Point °C	
A* -55 to	1.22081	5	t _e			Fire Point	
B* 27 °C	957.9	5	ΔHc kcal/m			M. Spec.	
K			ΔHf			Ultra V.	
c			ΔFf			X-Ray Dif.	
t _k to °C			Viscosity centistokes			Infrared	
t _x to °C			η °C			Solubility in ⁺	
A' to °C			B ^v to °C			Acetone	
B' to °C			A ^v to °C			Carbon tet.	
C' to °C			(B ^v) to °C			Benzene	
A'* to °C			(A ^v) to °C			Ether	
B'* to °C			c _p liq. °			n-Heptane	
A _c to °C			c _p vap. °K			Ethanol	
B _c to °C			c _v vap.			Water	
C _c to °C						Water in	
Cryos. A° const. B°							
t _e °C	6.52	5					

^a For the liquid at saturation pressure ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Diethylamine			STRUCTURAL FORMULA		
					(C ₂ H ₅) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₁₁ N	Molecular Weight	73.136		
		Ref.			Ref.		
F. P. °C	-50.0	3	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.0988	5	g	°K
B. P. °C	55.5	3	BP	0.0381	5	h	
760 mm	6.8	5	t _e	0.0339	5	f'	to
100	-14.9	5	30 mm	0.5460	5	g'	°K
30	-31.5	5	ΔHm cal/g			h'	
10	-59.1	5	ΔHv cal/g			m	to
1			25°C	102.54	5	n	°K
Pressure mm 25°C	233.5	5	30 mm	110.63	5	o	
t _e	881.4	5	BP	96.42	5	m'	to
Density g/ml 20°C	0.6993	3	t _e	95.55	5	n'	°K
d ^t 25	0.6926	3	t _e (d, e)	95.54	5	o'	
d ^t 30			ΔHv/T _e	20.99	5		
a	0.7262	5	d -15 to	107.62	5	Surface tension dynes/cm. 20°C	
b	-0.00131	5	e 80 °C	0.2019	5	8.89	5
Ref. Index n _D 20°C	1.3823	3	d' to			30	8.21
25	1.3783	3	e' °C			40	7.55
30			d g/ml			Parachor [P] 20°C	
"C"	0.7307	4	v _c ml/g			30	
MR (Obs.)	24.356	4	t _c °C			40	
MR (Calc.) (nD-d/2)	24.422	5	P _c mm			Sugd.	180.8
Dielectric			PV/RT			Exp. L.l. %/wt. u.	
A -15 to	7.14099	5	25°C	0.9806	5	Dispersion	
B 90 °C	1209.9	5	30 mm	1.0000	5	Flash Point °C	
C	229.	5	BP	0.9553	5	Fire Point	
A* -15 to	1.45594	5	t _e	0.9513	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 80 °C	1136.8	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			ΔHc kcal/m				
t _k to			ΔHf				
t _x °C			ΔFf				
A' to			Viscosity centistokes °C				
B' °C			η				
C' °C			B ^v to				
A'° to			A ^v °C				
B'° °C			(B ^v) to				
Ac to			(A ^v) °C				
Bc t _c °C			c _p liq. °K				
Cc °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	59.85	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 49

NAME		Di-n-propylamine			STRUCTURAL FORMULA		
					$(C_3H_7)_2NH$		
Mole % Pur.	Ref.	Molecular Formula	$C_6H_{15}N$	Molecular Weight	101.188		
		Ref.			Ref.		
F. P. °C	-63.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°C
B. P. °C			25°C	0.7520	5	h	
760 mm	109.2	3	BP	0.0432	5	f'	to
100	53.9	5	t _e	0.0341	5	g'	°C
30	29.0	5	30 mm	0.6242	5	h'	
10	10.1	5	ΔHm cal/g			m	to
1	-21.6	5	ΔHv cal/g			n	°K
Pressure mm 25°C	24.09	5	25°C	96.45	5	o	
t _e	1024.9	5	30 mm	95.75	5	m'	to
Density g/ml 20°C	0.7375	3	BP	82.37	5	n'	°K
d ₄ ^t 25	0.7326	3	t _e (d, e)	80.75	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.82	5	Surface tension dynes/cm. 20°C	
a	0.7571	5	d 29 to	100.60	5	γ	6.58
b	-0.03974	5	e 139 °C	0.1669	5		6.24
Ref. Index n _D			d' to				5.90
25	1.4051	3	e' °C			Parachor [P] 20°C	
30	1.4021	3	d _c g/ml				
"C"	0.7319	4	v _c ml/g				
MR (Obs.)	33.636	4	t _c °C				
MR (Calc.) (nD-d/2)	33.658	5	F _c mm				
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 29 to	7.20663	5	25°C	1.0012	5	Dispersion	
B 149 °C	1415.4	5	30 mm	1.0000	5	Flash Point °C	
C	218.	5	BP	0.9475	5	Fire Point	
A* 29 to	1.61517	5	t _e	0.9386	5	M. Spec. Ultra V.	
B* 139 °C	1336.0	5	t _c			X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in ⁺	
t _k to			ΔHf			Acetone	
t _x °C			ΔFf			Carbon tet.	
A' to			Viscosity centistokes			Benzene	
B' °C			η			Ether	
C' °C			B ^v to			n-Heptane	
A'* to			A ^v °C			Ethanol	
B'* °C			(B ^v)			Water	
Ac to			(A ^v)			Water in	
Bc °C			c _p liq. °C				
Cc °C			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	119.33	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Di-n-butylamine			STRUCTURAL FORMULA			
					(C ₄ H ₉) ₂ NH			
Mole % Pur.	Ref.	Molecular Formula	C ₈ H ₁₉ N	Molecular Weight	129.240			
		Ref.			Ref.			
F. P. °C	-62.	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C	6.446	5	g	°K	
B. P. °C			BP	0.0480	5	h		
760 mm	159.6	3	t _e	0.0344	5	f'	to	
100	98.0	5	t _e (d, e)			g'	°K	
30	70.2	5	ΔHm cal/g			h'		
10	49.0	5	ΔHv cal/g			m	to	
1	13.5	5	25°C	93.50	5	n	°K	
			30 mm	86.52	5	o		
Pressure mm 25°C	2.28	5	BP	73.68	5	m'	to	
t _e	1156.7	5	t _e	71.52	5	n'	°K	
Density g/ml 20°C	0.7619	3	t _e (d, e)	71.39	5	o'		
d ^t 25	0.7577	3	ΔHv/T _e	20.60	5	Surface tension dynes/cm. 20°C		
d ₄ 30						30	5.42	5
a	0.7787	5	d 70 to	96.61	5	40	5.18	5
b	-0.03839	5	e 196 °C	0.1437	5		4.95	5
Ref. Index n _D 20°C	1.4199	3	d' to			Parachor [P] 20°C		
25	1.4173	3	e' °C			30		
30			d g/ml			40		
"C"	0.7328	4	v _c ml/g			Sugd.	258.8	5
MR (Obs.)	42.918	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	42.894	5	P _c mm			Dispersion		
Dielectric			PV/RT 25°C	1.0064	5	Flash Point °C		
A 70 to	7.26603	5	30 mm	1.0000	5	Fire Point		
B 206 °C	1616.4	5	BP	0.9398	5	M Spec. Ultra V. X-Ray Dif. Infrared		
C	209.	5	t _e	0.9264	5	Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
A* 70 to	1.74363	5	ΔHc kcal/m					
B* 196 °C	1531.8	5	ΔHf					
K			ΔFf					
t _x to °C			Viscosity centistokes η °C					
A' to °C			B ^v to °C					
B' to °C			A ^v to °C					
C'			(B ^v) to °C					
A ^{1*} to °C			(A ^v) to °C					
B ^{1*} to °C			c _p liq. °K					
Ac to °C			c _p vap. °K					
Bc to °C			c _v vap.					
Cc to °C								
Cryos. A ¹ consts. B ¹								
t _e °C	175.60	5						

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 51

NAME	Di-n-pentylamine				STRUCTURAL FORMULA			
					(C ₅ H ₁₁) ₂ NH			
Mole % Pur.	Ref. 3	Molecular Formula C ₁₀ H ₂₃ N	Molecular Weight 157.292					
	Ref.			Ref.			Ref.	
F. P. °C	-33.	3			f	to		
F. P. 100%					g	°C		
B. P. °C					h			
760 mm	203.	3			f'	to		
100	136.	5			g'	°C		
30	106.	5			h'			
10	83.	5						
1	44.	5			m	to		
Pressure mm 25°C	0.25	5			n	°K		
t _e	1267.9	5			o			
Density g/ml 20°C	0.7780	3			m'	to		
t	0.7741	3			n'	°K		
d ₄ 30					o'			
a	0.7936	5			Surface tension dynes/cm. 20°C			
b	-0.03780	5			γ	30	4.71 5	
						40	4.52 5	
Ref. Index n _D 20°C	1.4297	3			Parachor [P] 20°C			
25	1.4273	3				30		
30						40		
"C"	0.7334	4			Sugd. 297.8		5	
MR (Obs.)	52.195	4			Exp. L. l. %/wt. u.			
MR (Calc.) (nD-d/2)	52.130	5			Dispersion			
Dielectric					Flash Point °C			
A 106 to	7.29982	5			Fire Point			
B 254 °C	1783.1	5			M. Spec. Ultra V.			
C	201.	5			X-Ray Dif. Infrared			
A* 106 to	1.83597	5			Solubility in ⁺			
B* 244 °C	1695.1	5			Acetone			
K					Carbon tet.			
c					Benzene			
t _k to					Ether			
t _x °C					n-Heptane			
A' to					Ethanol			
B' °C					Water			
C' °C					Water in			
A'* to								
B'* °C								
Ac to								
Bc t _c °C								
Cc °C								
Cryos. A°								
const. B°								
t _e °C	224.37	5						
* grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: MCA								
PURIFICATION: MCA								
LITERATURE REFERENCES: 3 MCA								

NAME		Di-n-hexylamine			STRUCTURAL FORMULA		
					(C ₆ H ₁₃) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₁₂ H ₂₇ N	Molecular Weight	185.344		
F. P. °C	-13.06	3				f	to
F. P. 100%						g	°K
B. P. °C				281.5	5	h	
760 mm	239.8	3		BP	5		
100	167.9	5		t _e	5	f'	to
30	135.3	5		30 mm	5	g'	°K
10	110.2	5				h'	
1	68.0	5		ΔHm cal/g			
Pressure mm 25°C	0.04	5		ΔHv cal/g		m	to
t _e	1362.0	5		25°C	5	n	°K
				30 mm	5	o	
Density g/ml 20°C	0.7889	3		BP	5	m'	to
d ₄ ^t 25	0.7853	3		t _e	5	n'	°K
d ₄ ^t 30				t _e (d, e)	5	o'	
				ΔHv/T _e	5		
a	0.8033	5		d 135 to	5	Surface tension dynes/cm. 20°C	
b	-0.03720	5		e 286 to	5	30	4.22
				d' to		40	4.07
Ref. Index n _D 25	1.4364	3		e' °C			3.92
30	1.4341	3				Parachor [P]	
"C"	0.7339	4		d c g/ml		20°C	
MR (Obs.)	61.478	4		v c ml/g		30	
MR (Calc.) (nD-d/2)	61.366	5		t c °C		40	
Dielectric				P c mm		Sugd.	336.8
A 135 to	7.43353	5		PV/RT		Exp. L. l. %/wt.	
B 296 °C	2018.2	5		25°C	5	u.	
C	204.	5		30 mm	5	Dispersion	
A* 135 to	2.01290	5		BP	5	Flash Point °C	
B* 286 °C	1922.5	5		t _e	5	Fire Point	
K				t _e		M Spec.	
c						Ultra V.	
t _k to				ΔHc kcal/m		X-Ray Dif.	
t _x °C				ΔHf		Infrared	
A' to				ΔFf		Solubility in +	
B' °C				Viscosity centistokes °C		Acetone	
C'				η		Carbon tet.	
A'*	to					Benzene	
B'*	°C			B ^v to		Ether	
				A ^v °C		n-Heptane	
Ac to				(B ^v) to		Ethanol	
Bc t _c °C				(A ^v) °C		Water	
Cc t _c °C				c _p liq. °K		Water in	
Cryos. A° const. B°				c _p vap. °K			
t _e °C	265.92	5		c _v vap.			
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Di-n-heptylamine				STRUCTURAL FORMULA				
						(C ₇ H ₁₅) ₂ NH				
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₄ H ₃₁ N	Molecular Weight	213.396					
		Ref.			Ref.			Ref.		
F.P. °C	1.0	3	dt/dP °C/mm			f	to °C			
F.P. 100%			25°C		1986.	g				
B.P. °C			BP		0.0588	h	to °C			
760 mm	272.	3	t _e		0.0353	f'	to °C			
100	196.	5	30 mm		0.8616	g'				
30	162.	5	ΔHm cal/g			h'				
10	136.	5	ΔHv cal/g			m	to °K			
1	92.	5	25°C		85.82	n				
Pressure mm 25°C			30 mm		68.25	o				
t _e	1440.0	5	BP		56.68	m'	to °K			
Density g/ml 20°C	0.7974	3	t _e (d, e)		53.73	n'				
d _t 25	0.7937	3	ΔHv/T _e		19.92	o'				
d ₄ 30			d 162 to		85.33	Surface tension dynes/cm. 20°C				
a	0.8122	5	e 322 °C		0.1053	γ	30	3.89	5	
b	-0.03740	5	d' to °C				40	3.75	5	
Ref. Index n _D 20°C	1.4416	3	e'			40		3.61	5	
25	1.4393	3	d _c g/ml			Parachor [P] 20°C				
30			v _c ml/g			30				
"C"	0.7342	4	t _c °C			40				
MR (Obs.)	70.753	4	P _c mm			Sugd.		375.8	5	
MR (Calc.) (nD-d/2)	70.602	5	PV/RT			Exp. L.l. %/wt. u.				
Dielectric			25°C		0.9878	Dispersion				
A 162 to	7.34382	5	30 mm		1.0000	Flash Point °C				
B 332 °C	2048.5	5	BP		0.9227	Fire Point				
C 332 °C	187.	5	t _e		0.8992					
A* 162 to	1.97702	5	c			M. Spec. Ultra V.				
B* 322 °C	1956.9	5	k			X-Ray Dif.				
K			t _k to °C			Infrared				
t _k			x			Solubility in ⁺				
A' to			B ^v to °C			Acetone				
B' to °C			A ^v to °C			Carbon tet.				
C' to °C			(B ^v) to °C			Benzene				
A* to			(A ^v) to °C			Ether				
B* to °C			c _p liq. °C			n-Heptane				
Ac to			c _p vap. °K			Ethanol				
Bc to °C			c _v vap.			Water				
Cc to °C						Water in				
Cryos. A° const. B°										
t _e °C	302.44	5								

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Di-n-octylamine			STRUCTURAL FORMULA		
					(C ₈ H ₁₇) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₁₆ H ₃₅ N	Molecular Weight	241.448		
		Ref.			Ref.		
F.P. °C	14.62	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0616	5	h	
760 mm	302.	3	t _e	0.0355	5	f'	to
100	223.	5	t _e (d, e)			g'	°K
30	187.	5	ΔHm cal/g			h'	
10	159.	5	ΔHv cal/g			m	to
1	113.	5	25°C			n	°K
Pressure mm 25°C			30 mm	64.01	5	o	
t _e	1513.0	5	BP	52.87	5	m'	to
Density g/ml 20°C	0.8038	3	t _e	49.80	5	n'	°K
d ₄ ^t 25	0.8003	3	t _e	49.53	5	o'	
d ₄ ^t 30			ΔHv/T _e	19.72	5	Surface tension dynes/cm. 20°C	
a	0.8178	5	d 187 to	82.04	5	γ	3.64
b	-0.03700	5	e 357 °C	0.0966	5		30 3.51
Ref. Index n _D 20°C			d' to				40 3.39
25	1.4456	3	e' °C			Parachor [P]	
30	1.4433	3	d c g/ml			20°C	
"C"	0.7346	4	v c ml/g			30	
MR (Obs.)	80.040	4	t c °C			40	
MR (Calc.)	79.838	5	P c mm			Sugd.	414.8
(n _D -d/2)			PV/RT			Exp. L. l. %/wt.	
Dielectric			25°C			u.	
A 187 to	7.36840	5	30 mm	1.0000	5	Dispersion	
B 367 °C	2172.0	5	BP	0.9181	5	Flash Point °C	
C	182.	5	t _e	0.8919	5	Fire Point	
A* 187 to	2.04164	5	t _e			M Spec.	
B* 357 °C	2079.1	5	t _e			Ultra V.	
K			ΔHc kcal/m			X-Ray Dif.	
t _x to			ΔHf			Infrared	
t _x °C			ΔFf			Solubility in +	
A' to			Viscosity centistokes			Acetone	
B' °C			η °C			Carbon tet.	
C' °C			B ^v to			Benzene	
A'* to			A ^v °C			Ether	
B'* °C			(B ^v) to			n-Heptane	
Ac to			(A ^v) °C			Ethanol	
Bc t _c °C			c _p liq. °K			Water	
Cc °C			c _p vap. °K			Water in	
Cryos. A* const. B*			c _v vap.				
t _e °C	336.55	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 55

NAME		Di-n-nonylamine				STRUCTURAL FORMULA				
						$(C_9H_{19})_2NH$				
Mole % Pur.	Ref. 3	Molecular Formula	$C_{18}H_{39}N$	Molecular Weight	269.500					
		Ref.				Ref.				Ref.
F. P. °C	25.	3	dt/dP				f	to		
F. P. 100%			°C/mm				g	°C		
B. P. °C			25°C				h			
760 mm	334.	3	BP	0.0647	5		f'	to		
100	251.	5	t _e	0.0358	5		g'	°C		
30	213.	5	30 mm	0.9526	5		h'			
10	184.	5	ΔHm cal/g				m	to		
1	135.	5	ΔHv cal/g				n	°K		
Pressure mm 25°C			25°C				o			
t _e	1589.7	5	30 mm	60.92	5		m'	to		
Density g/ml 20°C			BP	49.98	5		n'	°K		
d _t 25	0.8089	3	t _e (d, e)	46.75	5		o'			
d ₄ 30	0.8055	3	ΔHv/T _e	19.50	5		Surface tension dynes/cm. 20°C			
a	0.8225	5	d 213 °C	80.13	5		y	30	3.44	5
b	-0.03680	5	e 393 °C	0.0902	5			40	3.33	5
Ref. Index n _D 20°C	1.4487	3	d'				Parachor [P] 20°C			
25	1.4465	3	e'					30	3.22	5
30			d _c g/ml					40		
"C"	0.7347	4	v _c ml/g				Sugd.			453.8
MR (Obs.)	89.311	4	t _c °C				Exp. L. l. %/wt. u.			
MR (Calc.) (nD-d/2)	89.074	5	F _c mm				Dispersion			
Dielectric			PV/RT 25°C				Flash Point °C			
A 213 to	7.38608	5	30 mm	1.0000	5		Fire Point			
B 403 °C	2297.7	5	BP	0.9132	5		M. Spec. Ultra V.			
C	176.	5	t _e	0.8842	5		X-Ray Dif.			
A* 213 to	2.09423	5	t _c				Infrared			
B* 393 °C	2204.0	5	ΔHc kcal/m				Solubility in ⁺			
K			ΔHf				Acetone			
c			ΔFf				Carbon tet.			
t _k to			Viscosity centistokes				Benzene			
t _x °C			η				Ether			
A' to							n-Heptane			
B' °C			B ^v to				Ethanol			
C' °C			A ^v °C				Water			
A'* to			(B ^v)				Water in			
B'* °C			(A ^v)							
Ac to			c _p liq. °C							
Bc °C			c _p vap. °K							
Cc °C			c _v vap.							
Cryos. A° const. B°										
t _e °C	373.06	5								
† grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		Di-n-decylamine			STRUCTURAL FORMULA		
					(C ₁₀ H ₂₁) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₄₃ N	Molecular Weight	297.552		
		Ref.			Ref.		
F. P. °C	34.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C			h	
760 mm	359.	3	BP	0.0671	5		
100	272.	5	t _e	0.0361	5	f'	to
30	233.	5	t _e (d, e)	0.9889	5	g'	°K
10	203.	5	ΔHm cal/g			h'	
1	153.	5	ΔHv cal/g			m	to
Pressure mm 25°C			25°C			n	°K
t _e	1648.4	5	30 mm	57.72	5	o	
Density g/ml 20°C			BP	47.08	5	m'	to
d ₄ ^t 25	0.8130 ^b	3	t _e	43.76	5	n'	°K
d ₄ ^t 30	0.8096 ^b	3	ΔHv/T _e	19.30	5	o'	
a	0.8266	5	d 233 to	77.47	5	Surface tension dynes/cm. 20°C	
b	-0.03680	5	e 422 °C	0.0847	5	30	3.29
Ref. Index n _D 20°C			d' to			40	3.18
25	1.4513 ^b	3	e' °C				3.07
30	1.4491 ^b	3	d			Parachor [P]	
"C"	0.7350	4	v _c g/ml			20°C	
MR (Obs.)	98.602	4	v _c ml/g			30	
MR (Calc.) (nD-d/2)	98.310	5	t _c °C			40	
Dielectric			P _c mm			Sugd.	492.8
A 233 to	7.39600	5	PV/RT			Exp. L. l. %/wt.	
B 432 °C	2393.1	5	25°C	1.0000	5	u.	
C	171.	5	30 mm	0.9092	5	Dispersion	
A* 233 to	2.13837	5	BP	0.8780	5	Flash Point °C	
B* 422 °C	2299.4	5	t _e			Fire Point	
K			t _c			M Spec.	
c			ΔHc kcal/m			Ultra V.	
t _x to			ΔHf			X-Ray Dif.	
t _x °C			ΔFf			Infrared	
A' to			Viscosity centistokes			Solubility in +	
B' °C			η °C			Acetone	
C'			B ^v to			Carbon tet.	
A'*	to		A ^v °C			Benzene	
B'*	°C		(B ^v) to			Ether	
Ac to			(A ^v) °C			n-Heptane	
Bc t _c °C			c _p liq. °K			Ethanol	
Cc			c _p vap. °K			Water	
Cryos. A° const. B°			c _v vap.			Water in	
t _e °C	401.65	5					

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 57

NAME		Di-n-undecylamine			STRUCTURAL FORMULA		
					(C ₁₁ H ₂₃) ₂ NH		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₂ H ₄₇ N	Molecular Weight 325.604				
		Ref.			Ref.		
F. P. °C	42.	3	dt/dP °C/mm			f	to °C
F. P. 100%			25°C			g	
B. P. °C			BP	0.0693	5	h	
760 mm	382.	3	t _e	0.0363	5	f'	to °C
100	293.	5	30 mm	1.0223	5	g'	
30	252.	5	ΔHm cal/g			h'	
10	221.	5				m	to °K
1	169.	5	ΔHv cal/g			n	
Pressure mm 25°C			25°C			o	
t _e	1702.2	5	30 mm	54.89	5	m'	to °K
Density g/ml 20°C	0.8165 ^b	3	BP	44.54	5	n'	
25	0.8131 ^b	3	t _e	41.16	5	o'	
30			t _e (d, e)	40.87	5	Surface tension dynes/cm. 20°C	
d ₄ 30			ΔHv/T _e	19.11	5	30	3.16
a	0.8301	5	d 252 to	74.98	5	40	2.96
b	-0.03680	5	e 448 °C	0.0797	5	40	3.06
Ref. Index n _D 20°C			d' to °C				5
25	1.4534 ^b	3	e' to °C			Parachor [P] 20°C	
30	1.4513 ^b	3	d _c g/ml			30	
"C"	0.7351	4	v _c ml/g			40	
MR (Obs.)	107.868	4	t _c °C			Sugd.	531.8
MR (Calc.) (nD-d/2)	107.546	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 252 to	7.40538	5	30 mm	1.0000	5	Flash Point °C	
B 458 °C	2481.7	5	BP	0.9058	5	Fire Point	
C	167.	5	t _e	0.8725	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 252 to	2.17896	5	t _c			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 448 °C	2388.0	5	ΔHc kcal/m				
K			ΔHf				
c			ΔFf				
t _k to °C			Viscosity centistokes				
t _x to °C			η °C				
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C' to °C			(B ^v) to °C				
A'* to °C			(A ^v) to °C				
B'* to °C			c _p liq. °C				
Ac _l to °C			c _p vap. °K				
Bc _l to °C			c _v vap.				
Cc _l to °C							
Cryos. A* const. B*							
t _g °C	428.01	5					

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Di-n-dodecylamine			STRUCTURAL FORMULA		
					(C ₁₂ H ₂₅) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₂₄ H ₅₁ N	Molecular Weight	353.656		
F.P. °C	51.	Ref.	3	dt/dP °C/mm		f	to
F.P. 100%				25°C		g	°K
B.P. °C				BP	0.0713	h	
760 mm	403.		3	t _e	0.0366	f'	to
100	311.		5	30 mm	1.0528	g'	°K
30	269.		5	ΔHm cal/g		h'	
10	237.		5	ΔHv cal/g		m	to
1	183.		5	25°C		n	°K
Pressure mm 25°C				30 mm	52.32	o	
t _e	1750.5		5	BP	42.26	m'	to
Density g/ml 20°C				t _e	38.85	n'	°K
d ₄ ^t 25	0.8194 ^b		3	t _e (d, e)	38.57	o'	
d ₄ ^t 30	0.8161 ^b		3	ΔHv/T _e	18.94		
a	0.8326		5	d 269 to	72.59	Surface tension dynes/cm. 20°C	
b	-0.03660		5	e 472 °C	0.0752	30	3.06
Ref. Index n _D 20°C				e' °C		40	2.96
25	1.4552 ^b		3	d			2.87
30	1.4531 ^b		3	e		Parachor [P] 20°C	
"C"	0.7352		4	e'		30	
MR (Obs.)	117.147		4	d		40	
MR (Calc.)	116.782		5	v _c ml/g		Sugd.	570.8
(n _D -d/2)				t _c °C		Exp. L.l. %/wt. u.	
Dielectric				P _c mm		Dispersion	
A 269 to	7.41435		5	PV/RT 25°C		Flash Point °C	
B 482 °C	2563.7		5	30 mm	1.0000	Fire Point	
C	163.		5	BP	0.9026	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 269 to	2.21710		5	t _e	0.8675	Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 472 °C	2470.2		5	t _c			
K				ΔHc kcal/m			
c				ΔHf			
t _k °C				ΔFf			
t _x °C				Viscosity centistokes °C			
A' °C				η			
B' °C				B ^v to °C			
C' °C				A ^v to °C			
A'* to °C				(B ^v) to °C			
B'* to °C				(A ^v) to °C			
A _c to °C				c _p liq. °K			
B _c to °C				c _p vap. °K			
C _c to °C				c _v vap.			
Cryos. A° const. B°							
t _e °C	452.13		5				

^b For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 59

NAME	Di-n-tridecylamine				STRUCTURAL FORMULA				
					(C ₁₃ H ₂₇) ₂ NH				
Mole % Pur.	Ref. 3	Molecular Formula C ₂₆ H ₅₅ N	Molecular Weight 381.708						
		Ref.			Ref.				Ref.
F. P. °C	56.5	3	dt/dP °C/mm 25°C			f	to °C		
F. P. 100%			BP		0.0731	g			
B. P. °C			t _e		0.0368	h			
760 mm	422.	3	30 mm		1.0806	f'	to °C		
100	328.	5				g'			
30	285.	5	ΔHm cal/g			h'			
10	252.	5				m	to °K		
1	197.	5	ΔHv cal/g 25°C			n			
Pressure mm 25°C			30 mm		49.97	o			
t _e	1793.7	5	BP		40.18	m'	to °K		
Density g/ml 20°C	0.8220 ^b	3	t _e (d, e)		36.70	n'			
t 25	0.8185 ^b	3	ΔHv/T _e		18.75	o'			
d ₄ 30			d 285 to °C		70.32	Surface tension dynes/cm. 20°C			
a	0.8360	5	e 494 to °C		0.0714	30			2.97
b	-0.03700	5	e' to °C			40			2.87
Ref. Index n _D 20°C	1.4568 ^b	3	d _c g/ml			Parachor [P] 20°C			
25	1.4546 ^b	3	v _c ml/g			30			
30			t _c °C			40			
"C"	0.7353	4	P _c mm			Sugd.			609.8
MR (Obs.)	126.421	4	PV/RT 25°C			Exp. L. l. %/wt. u.			
MR (Calc.) (n _D -d/2)	126.018	5	30 mm		1.0000	Dispersion			
Dielectric			BP		0.8997	Flash Point °C			
A 285 to °C	7.42300	5	t _e		0.8629	Fire Point			
B 504 to °C	2639.0	5	t _e			M. Spec. Ultra V. X-Ray Dif. Infrared			
C 159.	159.	5	ΔHc kcal/m			Solubility in ⁺			
A* 285 to °C	2.25326	5	ΔHf			Acetone			
B* 494 to °C	2545.8	5	ΔFf			Carbon tet.			
K			Viscosity centistokes η °C			Benzene			
c						Ether			
t _x to °C						n-Heptane			
t _x to °C						Ethanol			
A' to °C						Water			
B' to °C						Water in			
C' to °C									
A'* to °C									
B'* to °C									
Ac to °C									
Bc to °C									
Cc to °C									
Cryos. A° const. B°									
t _e °C	473.97	5							

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Di-n-tetradecylamine		STRUCTURAL FORMULA	
				(C ₁₄ H ₂₉) ₂ NH	
Mole % Pur.	Ref.	Molecular Formula	C ₂₈ H ₅₉ N	Molecular Weight	409.760
		Ref.			Ref.
F. P. °C	60.62	3	dt/dP °C/mm		
F. P. 100%			25°C		
B. P. °C	440.	3	BP	0.0748	5
760 mm	343.	5	t _e	0.0370	5
100	300.	5	30 mm	1.1063	5
30	266.	5	ΔHm cal/g		
10	209.	5	ΔHv cal/g		
1			25°C		
Pressure mm 25°C	1834.3	5	30 mm	47.91	5
t _e			BP	38.34	5
Density g/ml 20°C	0.8241 ^b	3	t _e	34.84	5
d ^t 25	0.8207 ^b	3	t _e (d, e)	34.61	5
d ^t 30			ΔHv/T _e	18.59	5
a	0.8377	5	d 300 to	68.32	5
b	-0.03680	5	e 515 °C	0.0681	5
Ref. Index n _D 20°C	1.4582 ^b	3	d'		
25	1.4560 ^b	3	e'		
30			d c g/ml		
"C"	0.7355	4	v c ml/g		
MR (Obs.)	135.724	4	t c °C		
MR (Calc.)	135.254	5	P c mm		
(nD-d/2)			PV/RT 25°C		
Dielectric			30 mm	1.0000	5
A 300 to	7.42537	5	BP	0.8970	5
B 525 °C	2704.0	5	t _e	0.8586	5
C	155.	5	t _c		
A* 300 to	2.28154	5	ΔHc kcal/m		
B* 515 °C	2611.5	5	ΔHf		
K			ΔFf		
t _k to			Viscosity centistokes		
t _x °C			η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C'			(B ^v) to		
A ^{1*} to			(A ^v) °C		
B ^{1*} °C			c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc					
Cryos. A ¹ consts. B ¹					
t _e °C	494.70	5			

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 61

NAME		Di-n-pentadecylamine			STRUCTURAL FORMULA		
					(C ₁₅ H ₃₁) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₃₀ H ₆₃ N	Molecular Weight	437.812		
		Ref.			Ref.		Ref.
F. P. °C	63.3	3	dt/dP			f	
F. P. 100%			°C/mm			g	to °C
B. P. °C			25°C			h	
760 mm	457.	3	BP	0.0764	5	f'	
100	358.	5	t _e	0.0371	5	g'	to °C
30	313.	5	30 mm	1.1313	5	h'	
10	279.	5	ΔHm cal/g			m	to °K
1	221.	5	ΔHv cal/g			n	
Pressure mm			25°C			o	to °K
t _e	1871.9	5	30 mm	46.00	5	m'	to °K
Density g/ml			BP	36.68	5	n'	to °K
20°C	0.8260 ^b	3	t _e	33.18	5	o'	
t	0.8227 ^b	3	t _e (d, e)	32.96	5	Surface tension dynes/cm. 20°C	
d ₄	30		ΔHv/T _e	18.45	5	γ	2.84
a	0.8392	5	d	313	5	30	2.75
b	-0.03660	5	e	534	5	40	2.66
Ref. Index			d'	to °C		Parachor [F]	
n _D			e'	to °C		20°C	
20°C	1.4593 ^b	3	d _c	g/ml		30	
25	1.4572 ^b	3	v _c	ml/g		40	
30			t _c	°C		Sugd.	687.8
"C"	0.7355	4	P _c	mm		Exp. L. l. %/wt. u.	
MR (Obs.)	144.981	4	PV/RT			Dispersion	
MR (Calc.)	144.490	5	25°C			Flash Point °C	
(nD-d/2)			30 mm	1.0000	5	Fire Point	
Dielectric			BP	0.8943	5	M. Spec. Ultra V.	
A	313 to	5	t _e	0.8544	5	X-Ray Dif.	
B	544 °C	5	t _c			Infrared	
C	152.	5	ΔHc kcal/m			Solubility in ⁺	
A*	313 to	5	ΔHf			Acetone	
B*	534 °C	5	ΔFf			Carbon tet.	
K	2680.7		Viscosity centistokes			Benzene	
c			η	°C		Ether	
t _k	to					n-Heptane	
t _x	°C					Ethanol	
A'	to					Water	
B'	°C					Water in	
C'	°C						
A'*	to						
B'*	°C						
Ac	to						
Bc	t _c °C						
Cc	°C						
Cryos. A°							
const. B°							
t _e °C	514.29	5					

^b For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Di-n-hexadecylamine			STRUCTURAL FORMULA		
					(C ₁₆ H ₃₃) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₃₂ H ₆₇ N	Molecular Weight	465.864		
		Ref.			Ref.		
F. P. °C	67.03	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0780	5	h	
760 mm	473.	3	t _e	0.0373	5	f'	to
100	372.	5	t _e (d, e)			g'	°K
30	327.	5	ΔHm cal/g			h'	
10	291.	5	ΔHv cal/g			m	to
1	232.	5	25°C			n	°K
Pressure mm 25°C			30 mm	44.26	5	o	
t _e	1907.2	5	BP	35.16	5	m'	to
Density g/ml 20°C	0.8277 ^b	3	t _e	31.64	5	n'	°K
25	0.8244 ^b	3	t _e (d, e)	31.45	5	o'	
d ₄ ^t 30			ΔHv/T _e	18.29	5	Surface tension dynes/cm. 20°C	
a	0.8409	5	d 327 to	64.57	5	30	2.78
b	-0.03660	5	e 553 °C	0.0622	5	40	2.69
Ref. Index n _D 20°C	1.4604 ^b	3	d' to				2.61
25	1.4583 ^b	3	e' °C			Parachor [P] 20°C	
30			d _c g/ml			30	
"C"	0.7356	4	v _c ml/g			40	
MR (Obs.)	154.272	4	t _c °C			Sugd.	726.8
MR (Calc.) (nD-d/2)	153.726	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C	1.0000	5	Dispersion	
A 327 to	7.43962	5	30 mm	0.8919	5	Flash Point °C	
B 563 °C	2835.6	5	BP	0.8506	5	Fire Point	
C	149.	5	t _e			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 327 to	2.34304	5	t _e			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 553 °C	2744.3	5	t _c				
K			ΔHc kcal/m				
c			ΔHf				
t _x to °C			ΔFf				
A' to °C			Viscosity centistokes η °C				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A'*	to °C		(B ^v) to °C				
B'*	to °C		(A ^v) °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A* const. B*							
t _e °C	532.76	5					

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 63

NAME		Di-n-heptadecylamine			STRUCTURAL FORMULA		
					(C ₁₇ H ₃₅) ₂ NH		
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₄ H ₇₁ N	Molecular Weight	493.916		
		Ref.			Ref.	Ref.	
F. P. °C	71.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°C
B. P. °C			BP	0.0793	5	h	
760 mm	487.	3	t _e	0.0375	5	f'	to
100	385.	5	30 mm	1.1752	5	g'	°C
30	338.	5	ΔHm cal/g			h'	
10	302.	5				m	to
1	242.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1937.7	5	30 mm	42.60	5	m'	to
Density g/ml 20°C			BP	33.72	5	n'	°K
d ^t 25	0.8292 ^b	3	t _e	30.19	5	o'	
d ^t 30	0.8259 ^b	3	t _e (d, e)	30.03	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	18.14	5	γ	2.73
a	0.8424	5	d 338 to	62.74	5	30	2.65
b	-0.03660	5	e 569 °C	0.0596	5	40	2.56
Ref. Index			d' to			Parachor [P]	
n _D 20°C	1.4613 ^b	3	e' °C			20°C	
25	1.4592 ^b	3				30	
30			d _c g/ml			40	
"C"	0.7357	4	v _c ml/g			Sugd.	765.8
MR (Obs.)	163.540	4	t _c °C			Exp. L. l. %/wt. u.	
MR (Calc.)	162.962	5	P _c mm			Dispersion	
Dielectric			PV/RT 25°C			Flash Point °C	
A 338 to	7.44566	5	30 mm	1.0000	5	Fire Point	
B 579 °C	2891.8	5	BP	0.8897	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
C	147.	5	t _e	0.8472	5	Solubility in ⁺	
A* 338 to	2.37117	5	t _c			Acetone	
B* 569 °C	2801.2	5	ΔHc kcal/m			Carbon tet.	
K			ΔHf			Benzene	
c			ΔFf			Ether	
t _k to			Viscosity centistokes η			n-Heptane	
t _x °C						Ethanol	
A' to			B ^v to			Water	
B' °C			A ^v °C			Water in	
C' °C			(B ^v)				
A'* to			(A ^v)				
B'* °C			c _p liq. °C				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A°							
const. B°							
t _e °C	548.92	5					
^b For undercooled liquid below normal F.P.		⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Di-n-octadecylamine				STRUCTURAL FORMULA			
						(C ₁₈ H ₃₇) ₂ NH			
Mole % Pur.		Ref. 3	Molecular Formula C ₃₆ H ₇₅ N	Molecular Weight 521.968					
		Ref.			Ref.	Ref.			
F. P. °C	72.3	3	dt/dP °C/mm			f	to		
F. P. 100%			25°C			g	°K		
B. P. °C			BP		0.0806	h			
760 mm	501.	3	t _e		0.0376	f'	to		
100	397.	5	30 mm		1.1957	g'	°K		
30	349.	5	ΔHm cal/g			h'			
10	313.	5	ΔHv cal/g			m	to		
1	252.	5	25°C			n	°K		
Pressure mm 25°C			30 mm		41.12	o			
t _e	1967.9	5	BP		32.44				
Density g/ml 20°C	0.8305 ^b	3	t _e (d, e)		28.89	m'	to		
d ₄ ^t 25	0.8272 ^b	3	ΔHv/T _e		28.76	n'	°K		
d ₄ ^t 30					17.99	o'			
a	0.8437	5	d	349 to	61.13	Surface tension dynes/cm. 20°C			
b	-0.03660	5	e	585 to	0.0573	y	30	2.69	5
Ref. Index n _D 25	1.4621 ^b	3	e'	to		40	2.60	5	
n _D 30	1.4600 ^b	3	e''	to			2.52	5	
"C"	0.7357	4	d	g/ml		Parachor [P] 20°C			
MR (Obs.)	172.816	4	e	ml/g		30			
MR (Calc.)	172.798	5	t _c	°C		40			
Dielectric			P	mm		Sugd.	804.8	5	
A 349 to	7.45150	5	PV/RT 25°C			Exp. L. l. %/wt. u.			
B 595 to	2948.1	5	30 mm		1.0000	Dispersion			
C	144.	5	BP		0.8875	Flash Point °C			
A* 349 to	2.39786	5	t _e		0.8438	Fire Point			
B* 585 to	2858.2	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared			
K			ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in			
t _k to			ΔHf						
t _x to			ΔFf						
A' to			Viscosity centistokes °C						
B' to			η						
C' to			B ^v to						
A'* to			A ^v to						
B'* to			(B ^v) to						
Ac to			(A ^v) to						
Bc t _c °C			c _p liq. °K						
Cc			c _p vap. °K						
Cryos. A° const. B°			c _v vap.						
t _e °C	565.10	5							

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 65

NAME		Di-n-nonadecylamine			STRUCTURAL FORMULA		
					$(C_{19}H_{39})_2NH$		
Mole % Pur.	Ref.	Molecular Formula	$C_{38}H_{79}N$	Molecular Weight	550.020		
		Ref.			Ref.		
F.P. °C	78.	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°C
B.P. °C			BP	0.0819	5	h	
760 mm	514.	3	t _e	0.0378	5	f'	to
100	408.	5	30 mm	1.2142	5	g'	°C
30	360.	5	ΔHm cal/g			h'	
10	323.	5	ΔHv cal/g			m	to
1	261.	5	25°C			n	°K
Pressure mm 25°C			30 mm	39.75	5	o	
t _e	1995.9	5	BP	31.24	5	m'	to
Density g/ml 20°C			t _e	27.67	5	n'	°K
d _t 25	0.8317 ^b	3	t _e (d, e)	27.58	5	o'	
d ₄ 30	0.8284 ^b	3	ΔHv/T _e	17.84	5	Surface tension dynes/cm. 20°C	
a	0.8449	5	d 360 to °C	59.67	5	γ	2.65
b	-0.03660	5	e 600 to °C	0.0553	5	30	2.57
Ref. Index n _D 20°C			d'			40	2.49
25	1.4629 ^b	3	e'			Parachor [P] 20°C	
30	1.4608 ^b	3	d _c g/ml			30	
"C"	0.7358	4	v _c ml/g			40	
MR (Obs.)	182.112	4	t _c °C			Sugd.	843.8
MR (Calc.)	181.434	5	P _c mm			Exp. L.l./wt. u.	
(nD-d/2)			PV/RT 25°C			Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 360 to °C	7.45182	5	BP	0.8856	5	Fire Point	
B 610 °C	2994.0	5	t _e	0.8407	5	M, Spec. Ultra V.	
C	141.	5	t _c			X-Ray Dif.	
A* 360 to °C	2.41823	5	ΔHc kcal/m			Infrared	
B* 600 °C	2905.1	5	ΔHf			Solubility in ⁺	
K			ΔFf			Acetone	
t _x to °C			Viscosity centistokes			Carbon tet.	
t _x to °C			η °C			Benzene	
A' to °C			B ^v to °C			Ether	
B' to °C			A ^v to °C			n-Heptane	
C' to °C			(B ^v) to °C			Ethanol	
A'* to °C			(A ^v) to °C			Water	
B'* to °C			c _p liq. °C			Water in	
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* const. B*							
t _e °C	580.15	5					

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Di-n-eicosylamine			STRUCTURAL FORMULA		
					(C ₂₀ H ₄₁) ₂ NH		
Mole % Pur.	Ref.	Molecular Formula	C ₄₀ H ₈₃ N	Molecular Weight	578.072		
		Ref.			Ref.	Ref.	
F. P. °C	80.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0830	5	h	
760 mm	526.	3	t _e	0.0379	5	f'	to
100	419.	5	t _e (d, e)			g'	°K
30	370.	5	ΔHm cal/g			h'	
10	332.	5	ΔHv cal/g			m	to
1	269.	5	25°C			n	°K
Pressure mm 25°C			30 mm	38.44	5	o	
t _e	2021.9	5	BP	30.12	5	m'	to
Density g/ml 20°C			t _e	26.55	5	n'	°K
25	0.8327 ^b	3	t _e	26.50	5	o'	
d ₄ ^t 30	0.8294 ^b	3	ΔHv/T _e	17.70	5	Surface tension dynes/cm. 20°C	
a	0.8459	5	d 370 to	58.14	5	γ	2.62
b	-0.03660	5	e 614 °C	0.0533	5		2.53
Ref. Index n _D 20°C			d' °C				2.45
25	1.4635 ^b	3	e' °C			Parachor [P]	
30	1.4615 ^b	3	d _c g/ml			20°C	
"C"	0.7358	4	v _c ml/g			30	
MR (Obs.)	191.383	4	t _c °C			40	
MR (Calc.) (nD-d/2)	190.670	5	P _c mm			Sugd.	882.8
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A 370 to	7.45762	5	30 mm	1.0000	5	Dispersion	
B 1624 °C	3043.6	5	BP	0.8839	5	Flash Point °C	
C	139.	5	t _e	0.8380	5	Fire Point	
A* 370 to	2.44274	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 614 °C	2955.2	5	ΔHc kcal/m			Solubility in +	
K			ΔHf			Acetone	
t _k to °C			ΔFf			Carbon tet.	
A' to °C			Viscosity centistokes η °C			Benzene	
B' to °C			B ^v to °C			Ether	
C' to °C			A ^v to °C			n-Heptane	
A'* to °C			(B ^v) to °C			Ethanol	
B'* to °C			(A ^v) °C			Water	
Ac to °C			c _p liq. °K			Water in	
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	594.06	5					

^b For undercooled liquid below normal F. P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 67

NAME		Dimethyl-n-octylamine				STRUCTURAL FORMULA				
						(CH ₃) ₂ N-CH ₂ (CH ₂) ₆ CH ₃				
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₀ H ₂₃ N	Molecular Weight	157.292					
		Ref.			Ref.					
F.P. °C	-75.	3	dt/dP			f		to		
F.P. 100%			°C/mm			g		°C		
B.P. °C			25°C	32.34	5	h				
760 mm	194.	3	BP	0.0513	5					
100	128.	5	t _e	0.0346	5	f'		to		
30	98.	5	30 mm	0.7480	5	g'		°C		
10	76.	5				h'				
1	38.	5	ΔHm cal/g							
Pressure mm 25°C	0.40	5	ΔHv cal/g			m		to		
t _e	1245.1	5	25°C	87.97	5	n		°K		
			30 mm	77.69	5	o				
Density g/ml 20°C	0.7661	3	BP	65.61	5					
t	0.7623	3	t _e	63.22	5	m'		to		
d ₄ 30			t _e (d, e)	63.05	5	n'		°K		
			ΔHv/T _e	20.40	5	o'				
a	0.7813	5	d 98 to	90.11	5	Surface tension dynes/cm. 20°C				
b	-0.03760	5	e 234 °C	0.1263	5	γ			11.22	5
			d'						30	10.78
			e'						40	10.36
Ref. Index n _D						Parachor [F]				
25	1.4247	3	d _c g/ml							
30	1.4224	3	v _c ml/g							
"C"	0.7367	4	t _c °C							
			P _c mm							
MR (Obs.)	52.466	4								
MR (Calc.) (nD-d/2)	52.480	5	PV/RT			Exp. L. l. %/wt. u.				
			25°C	1.0039	5	Dispersion				
			30 mm	1.0000	5	Flash Point °C				
			BP	0.9347	5	Fire Point				
			t _e	0.9182	5	M. Spec. Ultra V.				
			t _c			X-Ray Dif.				
						Infrared				
			ΔHc kcal/m			Solubility in +				
			ΔHf			Acetone				
			ΔFf			Carbon tet.				
			Viscosity centistokes			Benzene				
			η °C			Ether				
						n-Heptane				
			B ^v to			Ethanol				
			A ^v °C			Water				
			(B ^v)			Water in				
			(A ^v)							
			c _p liq. °C							
			c _p vap. °K							
			c _v vap.							
t _e °C	214.24	5								
* grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		Dimethyl-n-decylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₈ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₂ H ₂₇ N	Molecular Weight	185.344		
F.P. °C	-44.	Ref.	3	dt/dP °C/mm		f	to
F.P. 100%				25°C	257.3	g	*K
B.P. °C	235.	3		BP	0.0552	h	
760 mm	164.	5		t _e	0.0349	f'	to
100	132.	5		30 mm	0.8081	g'	*K
30	107.	5		ΔHm cal/g		h'	
10	66.	5		ΔHv cal/g		m	to
1				25°C	86.69	n	*K
Pressure mm	0.04	5		30 mm	72.54	o	
t _e	1348.4	5		BP	60.76	m'	to
Density g/ml	0.7785	3		t _e	58.06	n'	*K
20°C				t _e (d, e)	57.84	o'	
d ₄ ^t 25	0.7750	3		ΔHv/T _e	20.16		
d ₄ ^t 30				d 132 to	87.61	Surface tension dynes/cm. 20°C	
a	0.7925	5		e 281 °C	0.1143	30	13.20
b	-0.03700	5		d' °C		40	12.73
Ref. Index n _D 20°C	1.4320	3		e' °C			12.28
25	1.4297	3		d c g/ml		Parachor [P]	
30				v c ml/g		20°C	
"C"	0.7367	4		t c °C		30	
MR (Obs.)	61.751	4		P c mm		40	
MR (Calc.)	61.716	5		PV/RT		Sugd.	453.8
(nD-d/2)				25°C	0.9972	Exp. L.l. %/wt.	
Dielectric				30 mm	1.0000	u.	
A 132 to	7.32434	5		BP	0.9283	Dispersion	
B 291 °C	1908.5	5		t _e	0.9082	Flash Point °C	
C	195.	5		t _e		Fire Point	
A* 132 to	1.91417	5		ΔHc kcal/m		M Spec.	
B* 281 °C	1818.5	5		ΔHf		Ultra V.	
K				ΔFf		X-Ray Dif.	
t _k °C				Viscosity centistokes		Infrared	
t _x °C				η °C		Solubility in +	
A' to				B ^v to		Acetone	
B' °C				A ^v °C		Carbon tet.	
C'				(B ^v) to		Benzene	
A''* to				(A ^v) °C		Ether	
B''* °C				c _p liq. °K		n-Heptane	
Ac to				c _p vap. °K		Ethanol	
Bc t _c °C				c _v vap.		Water	
Cc °C						Water in	
Cryos. A° const. B°							
t _e °C	260.50	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 69

NAME		Dimethyl-n-dodecylamine				STRUCTURAL FORMULA				
						(CH ₃) ₂ NCH ₂ (CH ₂) ₁₀ CH ₃				
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₄ H ₃₁ N	Molecular Weight	213.396					
F. P. °C	-20.30	3	dt/dP °C/mm			f		to		
F. P. 100%			25°C	2028.	5	g		°C		
B. P. °C			BP	0.0587	5	h				
760 mm	271.	3	t _e	0.0353	5	f'		to		
100	196.	5	30 mm	0.8574	5	g'		°C		
30	162.	5				h'				
10	135.	5	ΔHm cal/g							
1	92.	5								
Pressure mm 25°C			ΔHv cal/g			m		to		
t _e	1436.8	5	25°C	86.76	5	n		°K		
			30 mm	68.38	5	o				
Density g/ml 20°C	0.7882	3	BP	56.53	5	m'		to		
d ₄ ^t 25	0.7846	3	t _e	53.54	5	n'		°K		
d ₄ ^t 30			t _e (d, e)	53.26	5	o'				
			ΔHv/T _e	19.89	5					
a	0.8026	5	d 162 to	85.85	5	Surface tension				
b	-0.03720	5	e 321 °C	0.1082	5	γ	dynes/cm. 20°C	14.89	5	
Ref. Index			d' to				30	14.35	5	
n _D 20°C	1.4377	3	e' °C				40	13.83	5	
25	1.4354	3				Parachor [P]				
30			d _v g/ml				20°C			
"C"	0.7366	4	v _c ml/g				30			
MR (Obs.)	71.029	4	t _c °C				40			
MR (Calc.)	70.952	5	P _c mm				Sugd.	531.8	5	
Dielectric			PV/RT			Exp. L. l. %/wt.				
A 162 to	7.31086	5	25°C	0.9863	5	u.				
B 331 °C	2015.7	5	30 mm	1.0000	5	Dispersion				
C	184.	5	BP	0.9225	5	Flash Point °C				
A* 162 to	1.94719	5	t _e	0.8990	5	Fire Point				
B* 321 °C	1925.9	5	t _c			M. Spec.				
K			ΔHc kcal/m			Ultra V.				
c			ΔHf			X-Ray Dif.				
t _k to			ΔFf			Infrared				
t _x °C			Viscosity			Solubility in ⁺				
A' to			centistokes			Acetone				
B' °C			η			Carbon tet.				
C'						Benzene				
A'* to			B ^v to			Ether				
B'* °C			A ^v °C			n-Heptane				
			(B ^v)			Ethanol				
Ac to			(A ^v)			Water				
Bc t _c °C			c _p liq. °C			Water in				
Cc °C			c _p vap. °K							
Cryos. A°			c _v vap.							
const. B°										
t _e °C	301.30	5								
+ grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		Dimethyl-n-tetradecylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₁₂ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₆ H ₃₅ N	Molecular Weight	241.448		
		Ref.			Ref.		
F.P. °C	-3.	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C			g	
B.P. °C	302.	3	BP	0.0616	5	h	
760 mm	223.	5	t _e	0.0355	5	f'	to °K
100	187.	5	t _e (d, e)	0.9059	5	g'	
30	159.	5	ΔHm cal/g			h'	
10	113.	5	ΔHv cal/g			m	to °K
1			25°C			n	
Pressure mm 25°C	1513.0	5	30 mm	64.01	5	o	
t _e			BP	52.86	5		
Density g/ml 20°C	0.7956	3	t _e	49.78	5	m'	to °K
d ₄ ^t 25	0.7921	3	t _e (d, e)	49.52	5	n'	
d ₄ ^t 30			ΔHv/T _e	19.72	5	o'	
a	0.8096	5	d 187 to	82.05	5	Surface tension dynes/cm. 20°C	
b	-0.03700	5	d' 357 °C	0.0967	5	γ	16.30 5
Ref. Index n _D 20°C	1.4420	3	d'' to °C			30	15.74 5
25	1.4399	3	e' °C			40	15.18 5
30			d _c g/ml			Parachor [P]	
"C"	0.7365	4	v _c ml/g			20°C	
MR (Obs.)	80.298	4	t _c °C			30	
MR (Calc.) (nD-d/2)	80.188	5	P _c mm			40	
Dielectric			PV/RT 25°C	1.0000	5	Sugd.	609.8 5
A 187 to	7.36840	5	30 mm	0.9181	5	Exp. L. l. %/wt. u.	
B 367 °C	2172.0	5	BP	0.8919	5	Dispersion	
C	182.	5	t _e			Flash Point °C	
A* 187 to	2.04164	5	t _c			Fire Point	
B* 357 °C	2079.1	5	ΔHc kcal/m			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHf			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
c			ΔFf				
t _x to °C			Viscosity centistokes °C				
t _x °C			B ^v to °C				
A' to °C			A ^v to °C				
B' °C			(B ^v) to °C				
C' °C			(A ^v) °C				
A' * to °C			c _p liq. °K				
B' * to °C			c _p vap. °K				
Ac to °C			c _v vap.				
Bc to °C							
Cc to °C							
Cryos. A* const. B*							
t _e °C	336.55	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 71

NAME		Dimethyl-n-hexadecylamine				STRUCTURAL FORMULA			
						(CH ₃) ₂ NCH ₂ (CH ₂) ₁₄ CH ₃			
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₈ H ₃₉ N	Molecular Weight	269.500				
		Ref.			Ref.				
F.P. °C	12.	3	dt/dP °C/mm			f	to		
F.P. 100%			25°C			g	°C		
B.P. °C			BP		0.0643	5	h	-----	
760 mm	330.	3	t _e		0.0358	5	f'	to	
100	247.	5	30 mm		0.9462	5	g'	°C	
30	210.	5	ΔHm cal/g				h'		
10	181.	5					m	to	
1	132.	5	ΔHv cal/g				n	°K	
Pressure mm 25°C			30 mm		60.52	5	o		
t _e	1579.8	5	BP		49.63	5	m'	to	
Density g/ml 20°C	0.8014	3	t _e		46.44	5	n'	°K	
t 25	0.7980	3	t _e (d, e)		46.15	5	o'		
d ₄ 30			ΔHv/T _e		19.50	5	Surface tension dynes/cm. 20°C		
a	0.8150	5	d 210 to		79.47	5	30		
b	-0.03680	5	e 388 °C		0.0904	5	40		
Ref. Index n _D			d'				17.50		
20	1.4455	3	e'				16.91		
25	1.4433	3	d _c g/ml				16.34		
30			v _c ml/g				5		
"C"	0.7366	4	t _c °C				5		
MR (Obs.)	89.590	4	P _c mm				5		
MR (Calc.)	89.424	5	PV/RT 25°C				Exp. L. l. %/wt. u.		
(nD-d/2)			30 mm		1.0000	5	Dispersion		
Dielectric			BP		0.9136	5	Flash Point °C		
A 210 to	7.37703	5	t _e		0.8849	5	Fire Point		
B 398 °C	2275.1	5	t _c				M. Spec. Ultra V.		
C	176.	5	ΔHc kcal/m				X-Ray Dif.		
A* 210 to	2.08744	5	ΔHf				Infrared		
B* 388 °C	2182.0	5	ΔFf				Solubility in +		
K			Viscosity centistokes				Acetone		
c			η °C				Carbon tet.		
t _k to							Benzene		
t _x °C							Ether		
A' to							n-Heptane		
B' °C							Ethanol		
C' °C							Water		
A'* to							Water in		
B'* °C									
Ac to									
Bc t _c °C									
Cc °C									
Cryos. A°									
const. B°									
t _g °C	368.48	5							
* grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

NAME		Dimethyl-n-octadecylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₁₆ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₄₃ N	Molecular Weight	297.552		
		Ref.					Ref.
F. P. °C	22.89	3	dt/dP °C/mm			f	
F. P. 100%			25°C			g	to °K
B. P. °C	356.	3	BP	0.0668	5	h	
760 mm	270.	5	t _e	0.0361	5	f'	to °K
100	231.	5	30 mm	0.9840	5	g'	
30	201.	5	ΔHm cal/g			h'	
10	151.	5	ΔHv cal/g			m	to °K
1			25°C			n	
Pressure mm 25°C	1641.3	5	30 mm	57.45	5	o	
t _e			BP	46.85	5		
Density g/ml 20°C	0.8062	3	t _e	43.56	5	m'	to °K
d ^t 25	0.8028	3	t _e (d, e)	43.27	5	n'	
d ^t 30			ΔHv/T _e	19.31	5	o'	
a	0.8198	5	d 231 to	77.01	5	Surface tension dynes/cm. 20°C	
b	-0.03680	5	e 418 °C	0.0847	5	30	18.53
Ref. Index n _D 20°C	1.4483	3	d' to °C			40	17.92
25	1.4461	3	e' °C				17.32
30			d v c g/ml			Parachor [P] 20°C	
"C"	0.7366	4	v c ml/g			30	
MR (Obs.)	98.861	4	t _c °C			40	
MR (Calc.) (nD-d/2)	98.660	5	P c mm			Sugd.	765.8
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A 231 to	7.38951	5	30 mm	1.0000	5	Dispersion	
B 428 °C	2376.1	5	BP	0.9097	5	Flash Point °C	
C	171.	5	t _e	0.8787	5	Fire Point	
A* 231 to	2.13321	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 418 °C	2282.7	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			ΔHf				
c			ΔFf				
t _x to °C			Viscosity centistokes				
t _x °C			η °C				
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C' to °C			(B ^v) to °C				
A'*	to °C		(A ^v) °C				
B'*	to °C		c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* const. B*							
t _e °C	398.22	5					

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 73

NAME		Dimethyl-n-nonadecylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₁₇ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula	C ₂₁ H ₄₅ N	Molecular Weight	311.578		
F.P. °C		Ref.	dt/dP °C/mm		Ref.	f	to
F.P. 100%			25°C			g	°C
B.P. °C			BP	0.0679	5	h	
760 mm	368.	3	t _e	0.0362	5	f'	to
100	280.	5	t _e (d, e)	1.0017	5	g'	°C
30	241.	5	ΔHm cal/g			h'	
10	210.	5				m	to
1	159.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			30 mm	56.01	5	o	
t _e	1669.8	5	BP	45.58	5	m'	to
Density g/ml 20°C			t _e	42.27	5	n'	°K
25	0.8083 ^b	3	t _e (d, e)	41.98	5	o'	
d ₄ ^t 30	0.8050 ^b	3	ΔHv/T _e	19.22	5	Surface tension dynes/cm. 20°C	
a	0.8215	5	d 241 to	75.72	5	γ	27.51
b	-0.03660	5	e 432 °C	0.0819	5		30 26.62
Ref. Index			d' to				40 25.76
n _D 20°C	1.4496 ^b	3	e' °C			Parachor [P]	
25	1.4474 ^b	3				20°C	
30			d _s g/ml			30	
"C"	0.7367	4	v _c ml/g			40	
MR (Obs.)	103.512	4	t _c °C			Sugd.	882.8
MR (Calc.)	103.278	5	P _c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 241 to	7.39765	5	30 mm	1.0000	5	Flash Point °C	
B 442 °C	2425.5	5	BP	0.9080	5	Fire Point	
C °C	169.	5	t _e	0.8760	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 241 to	2.15675	5	t _c			Solubility in ⁺	
B* 432 °C	2331.8	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k °C			Viscosity centistokes			Ether	
t _x °C			η			n-Heptane	
A' to						Ethanol	
B' °C			B ^v to			Water	
C' °C			A ^v °C			Water in	
A'* to			(B ^v)				
B'* °C			(A ^v)				
Ac to			c _p liq. °C				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A°							
const. B°							
t _e °C	411.97	5					
^b For the liquid state			⁺ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Dimethyl-n-eicosylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₁₈ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₂₂ H ₄₇ N	Molecular Weight	325.604		
		Ref.			Ref.		
F. P. °C	33.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C	379.	3	BP	0.0690	5	h	
760 mm	290.	5	t _e	0.0363	5	f'	to
100	250.	5	t _e (d, e)	1.0178	5	g'	°K
30	219.	5	ΔHm cal/g			h'	
10	167.	5	ΔHv cal/g			m	to
1			25°C			n	°K
Pressure mm 25°C			30 mm	54.61	5	o	
t _e	1695.3	5	BP	44.34	5	m'	to
Density g/ml 20°C	0.8102 ^a	3	t _e	41.00	5	n'	°K
d ₄ ^t 25	0.8069 ^a	3	t _e	40.72	5	o'	
d ₄ ^t 30			ΔHv/T _e	19.13	5	Surface tension dynes/cm. 20°C	
a	0.8234	5	d 250 to	74.45	5	γ	27.68
b	-0.03660	5	e 445 °C	0.0794	5		30 26.79
Ref. Index n _D 20°C	1.4507 ^a	3	d' to				40 25.92
25	1.4486 ^a	3	e' °C			Parachor [P] 20°C	
30			d g/ml				30
"C"	0.7366	4	v c ml/g				40
MR (Obs.)	108.146	4	v c °C				Sugd. 921.8
MR (Calc.) (nD-d/2)	107.896	5	P c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 250 to	7.40344	5	30 mm	1.0000	5	Flash Point °C	
B 455 °C	2469.4	5	BP	0.9063	5	Fire Point	
C	167.	5	t _e	0.8733	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 250 to	2.17798	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 445 °C	2375.7	5	ΔHc kcal/m				
K			ΔHf				
t _x to °C			ΔFf				
t _x to °C			Viscosity centistokes η °C				
A' to °C			B ^v to °C				
B' to °C			A ^v to °C				
C' to °C			(B ^v) to °C				
A'*	to °C		(A ^v) °C				
B'*	to °C		c _p liq. °K				
Ac to °C			c _p vap. °K				
Bc to °C			c _v vap.				
Cc to °C							
Cryos. A* const. B*							
t _e °C	424.57	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 75

NAME		Dimethyl-n-heneicosylamine			STRUCTURAL FORMULA		
					$(\text{CH}_3)_2\text{NGH}_2(\text{CH}_2)_{19}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{23}\text{H}_{49}\text{N}$	Molecular Weight	339.630		
		Ref.			Ref.	Ref.	
F.P. °C			dt/dP			f	to
F.P. 100%			°C/mm			g	°C
B.P. °C			25°C			h	
760 mm	390.	3	BP	0.0700	5	f'	to
100	300.	5	t _e	0.0364	5	g'	°C
30	259.	5	30 mm	1.0339	5	h'	
10	227.	5	ΔHm cal/g			m	to
1	174.	5				n	°K
Pressure mm			ΔHv cal/g			o	
25°C			25°C			m'	to
t _e	1720.6	5	30 mm	53.33	5	n'	°K
Density g/ml			BP	43.19	5	o'	
20°C	0.8120 ^a	3	t _e	39.83	5	Surface tension	
t	0.8087 ^a	3	t _e (d, e)	39.55	5	dynes/cm. 20°C	
d ₄			ΔHv/T _e	19.04	5	30	
30						40	
a	0.8252	5	d	259	5	27.84	
b	-0.03660	5	e	457	5	26.95	
Ref. Index			d'	to		26.08	
n _D			e'	to			
20°C	1.4517 ^a	3				Parachor [P]	
25	1.4496 ^a	3	d _c g/ml			20°C	
30			v _c ml/g			30	
"C"	0.7365	4	t _c °C			40	
MR (Obs.)	112.771	4	P _c mm			Sugd. 960.8	
MR (Calc.)	112.514	5	PV/RT			Exp. L. l. %/wt.	
(n _D -d/2)			25°C			u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A	259 to	5	BP	0.9046	5	Flash Point °C	
B	467 °C	5	t _e	0.8706	5	Fire Point	
C	2513.2	5	t _c			M. Spec.	
A*	259 to	5	ΔHc kcal/m			Ultra V.	
B*	457 °C	5	ΔHf			X-Ray Dif.	
K	2419.5	5	ΔFf			Infrared	
t _k			Viscosity			Solubility in ⁺	
t _x			centistokes			Acetone	
A'	to		η			Carbon tet.	
B'	°C					Benzene	
C'			B ^v	to		Ether	
A'*	to		A ^v	°C		n-Heptane	
B'*	°C		(B ^v)			Ethanol	
Ac	to		(A ^v)			Water	
Bc	to		c _p liq. °C			Water in	
Cc	°C		c _p vap. °K				
Cryos. A°			c _v vap.				
const. B°							
t _e °C	437.19	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

No. 76

NAME		Dimethyl-n-docosylamine			STRUCTURAL FORMULA		
					$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{20}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{24}\text{H}_{51}\text{N}$	Molecular Weight	353.656		
		Ref.			Ref.		
F. P. °C	44.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP		0.0710	h	
760 mm	400.	3	t_e		0.0365	f'	to
100	308.	5	30 mm		1.0484	g'	°K
30	267.	5	ΔH_m cal/g			h'	
10	235.	5	ΔH_v cal/g			m	to
1	181.	5	25°C			n	°K
Pressure mm 25°C			30 mm		52.07	o	
t_e	1743.7	5	BP		42.08	m'	to
Density g/ml 20°C	0.8136 ^a	3	t_e (d, e)		38.69	n'	°K
25	0.8103 ^a	3	$\Delta H_v/T_e$		38.42	o'	
d_4^{25}			18.96		5	Surface tension dynes/cm. 20°C	
a	0.8268	5	d 267 to		72.10	y	27.99
b	-0.03660	5	e' 469 °C		0.0751	30	27.09
Ref. Index			e' °C			40	26.22
n_D 20°C	1.4527 ^a	3	d c g/ml			Parachor [P] 20°C	
25	1.4506 ^a	3	v_c ml/g			30	
30			t_c °C			40	
"C"	0.7366	4	P c mm			Sugd.	999.8
MR (Obs.)	117.422	4	PV/RT			Exp. L. l. %/wt. u.	
MR (Calc.)	117.132	5	25°C		1.0000	Dispersion	
(nD-d/2)			30 mm		0.9031	Flash Point °C	
Dielectric			BP		0.8683	Fire Point	
A 267 to	7.41250	5	t_e			M Spec. Ultra V. X-Ray Dif. Infrared	
B 479 °C	2551.3	5	t_c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
C	163.	5	ΔH_c kcal/m				
A* 267 to	2.21615	5	ΔH_f				
B* 469 °C	2457.8	5	ΔF_f				
K			Viscosity centistokes				
c			η °C				
t_k °C			B ^v to				
t_x °C			A ^v °C				
A' to			(B ^v) to				
B' to			(A ^v) °C				
C' to			c_p liq. °K				
A'* to °C			c_p vap. °K				
B'* to °C			c_v vap.				
Ac to							
Bc to							
Cc to							
Cryos. A* consts. B*							
t_e °C	448.68	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 77

NAME		Dimethyl-n-tricosylamine				STRUCTURAL FORMULA		
						(CH ₃) ₂ NCH ₂ (CH ₂) ₂₁ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₅ H ₅₃ N	Molecular Weight 367.682					
		Ref.			Ref.			
F.P. °C			dt/dP °C/mm			f	to	
F.P. 100%			25°C			g	°C	
B.P. °C			BP	0.0719	5	h		
760 mm	410.	3	t _e	0.0366	5	f'	to	
100	317.	5	t _e (d, e)	1.0629	5	g'	°C	
30	275.	5	ΔHm cal/g			h'		
10	243.	5	ΔHv cal/g			m	to	
1	188.	5	25°C			n	°K	
Pressure mm 25°C			30 mm	50.91	5	o		
t _e	1766.1	5	BP	41.03	5	m'	to	
Density g/ml 20°C	0.8151 ^a	3	t _e	37.62	5	n'	°K	
t 25	0.8118 ^a	3	t _e (d, e)	37.36	5	o'		
d 4 30			ΔHv/T _e	18.86	5	Surface tension dynes/cm. 20°C 28.12 5		
a	0.8283	5	d 275	71.04	5	30 27.22 5		
b	-0.03660	5	e 480 °C	0.0732	5	40 26.35 5		
Ref. Index n _D 20°C	1.4536 ^a	3	d'			Parachor [P] 20°C		
25	1.4515 ^a	3	e'			30		
30			d _c g/ml			40		
"C"	0.7366	4	v _c ml/g			Sugd. 1038.8 5		
MR (Obs.)	122.063	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	121.750	5	P _c mm			Dispersion		
Dielectric			PV/RT 25°C			Flash Point °C		
A 275 to	7.41585	5	30 mm	1.0000	5	Fire Point		
B 490 °C	2589.5	5	BP	0.9014	5	M. Spec. Ultra V.		
C	161.	5	t _e	0.8656	5	X-Ray Dif. Infrared		
A* 275 to	2.23378	5	t _c			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
B* 480 °C	2496.3	5	ΔHc kcal/m					
K			ΔHf					
t _k to			ΔFf					
t _x °C			Viscosity centistokes η °C					
A' to			B ^v to					
B' °C			A ^v °C					
A'* to			(B ^v)					
B'* °C			(A ^v)					
Ac _l to			c _p liq. °C					
Bc _l t _c °C			c _p vap. °K					
Cc _l t _c °C			c _v vap.					
Cryos. A* const. B*								
t _e °C	460.16	5						

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-tetracosylamine				STRUCTURAL FORMULA				
						(CH ₃) ₂ NCH ₂ (CH ₂) ₂₂ CH ₃				
Mole % Pur.	Ref.	Molecular Formula	C ₂₆ H ₅₅ N	Molecular Weight	381.708					
		Ref.			Ref.					
F. P. °C	49.	3	dt/dP			f		to		
F. P. 100%			°C/mm			g		°K		
B. P. °C			25°C			h				
760 mm	420.	3	BP	0.0729	5					
100	326.	5	t _e	0.0367	5	f'		to		
30	283.	5	30 mm	1.0774	5	g'		°K		
10	250.	5	ΔHm cal/g			h'				
1	195.	5	ΔHv cal/g			m		to		
Pressure mm 25°C			25°C			n		°K		
t _e	1788.9	5	30 mm	49.83	5	o				
Density g/ml 20°C			BP	40.06	5					
d ₄ ^t 25	0.8165 ^a	3	t _e	36.62	5	m'		to		
d ₄ ^t 30	0.8131 ^a	3	t _e (d, e)	36.37	5	n'		°K		
			ΔHv/T _e	18.77	5	o'				
a	0.8301	5	d 283 to	70.07	5	Surface tension dynes/cm. 20°C				
b	-0.03680	5	e 492 to	0.0714	5	30	28.25	5		
Ref. Index n _D 20°C			d' to			40	27.32	5		
25	1.4545 ^a	3	e' to				26.42	5		
30	1.4523 ^a	3				Parachor [P]				
"C"	0.7367	4	d c g/ml			20°C				
MR (Obs.)	126.719	4	v c ml/g			30				
MR (Calc.)	126.368	5	t c °C			40				
Dielectric			P c mm			Sugd.	1077.8	5		
A 283 to	7.41911	5	PV/RT			Exp. L. l. %/wt.				
B 502 °C	2627.7	5	25°C	1.0000	5	u.				
C	159.	5	30 mm	0.8999	5	Dispersion				
A* 283 to	2.25027	5	BP	0.8633	5	Flash Point °C				
B* 492 °C	2534.7	5	t _e			Fire Point				
K			t _c			M Spec.				
c			ΔHc kcal/m			Ultra V.				
t _k to			ΔHf			X-Ray Dif.				
x °C			ΔFf			Infrared				
A' to			Viscosity centistokes			Solubility in +				
B' °C			η °C			Acetone				
C'			B ^v to			Carbon tet.				
A'*	to		A ^v °C			Benzene				
B'*	°C		(B ^v) to			Ether				
Ac to			(A ^v) °C			n-Heptane				
Bc t _c °C			c _p liq. °K			Ethanol				
Cc °C			c _p vap. °K			Water				
Cryos. A°			c _v vap.			Water in				
const. B°										
t _e °C	471.66	5								

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 79

NAME		Dimethyl-n-pentacosylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₂₃ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₇ H ₅₇ N	Molecular Weight 395.734				
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	°C	
B. P. °C			BP	0.0738	5	h	
760 mm	429.	3	t _e	0.0368	5	f'	to
100	334.	5	30 mm	1.0907	5	g'	°C
30	291.	5	ΔHm cal/g			h'	
10	257.	5				m	to
1	201.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1809.1	5	30 mm	48.74	5		
Density g/ml 20°C			BP	39.11	5	m'	to
t	0.8179 ^a	3	t _e	35.65	5	n'	°K
25	0.8145 ^a	3	t _e (d, e)	35.42	5	o'	
d ₄ 30			ΔHv/T _e	18.68	5	Surface tension dynes/cm. 20°C	
a	0.8315	5	d 291 to	68.97	5	30	28.39
b	-0.03680	5	e 502 °C	0.0696	5	40	27.45
Ref. Index n _D 20°C			d'				26.54
25	1.4553 ^a	3	e'			Parachor [P] 20°C	
30	1.4531 ^a	3				30	
"C"	0.7367	4	d _c g/ml			40	
MR (Obs.)	131.350	4	v _c ml/g			Sugd.	1116.8
MR (Calc.) (n _D -d/2)	130.986	5	t _c °C			Exp. L. l. %/wt. u.	
Dielectric			P _c mm			Dispersion	
A 291 to	7.42438	5	PV/RT 25°C			Flash Point °C	
B 512 °C	2664.8	5	30 mm	1.0000	5	Fire Point	
C	158.	5	BP	0.8985	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 291 to	2.26873	5	t _e	0.8610	5	Solubility in ⁺	
B* 502 °C	2572.0	5	t _e			Acetone	
K			ΔHc kcal/m			Carbon tet.	
c			ΔHf			Benzene	
t _x to			ΔFf			Ether	
t _x °C			Viscosity centistokes η °C			n-Heptane	
A' to						Ethanol	
B' °C			B ^v to			Water	
C' °C			A ^v °C			Water in	
A'* to			(B ^v)				
B'* °C			(A ^v)				
Ac to			c _p liq. °C				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A ^a const. B ^a							
t _e °C	482.01	5					

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-hexacosylamine			STRUCTURAL FORMULA			
					(CH ₃) ₂ NCH ₂ (CH ₂) ₂₄ CH ₃			
Mole % Pur.	Ref.	Molecular Formula	C ₂₈ H ₅₉ N	Molecular Weight	409.760			
		Ref.			Ref.			
F.P. °C	55.	3	dt/dP °C/mm			f	to	
F.P. 100%			25°C			g	°K	
B.P. °C			BP		0.0746	5	h	
760 mm	438.	3	t _e		0.0369	5	f'	
100	342.	5	30 mm		1.1040	5	g'	
30	298.	5	ΔHm cal/g			5	h'	
10	264.	5	ΔHv cal/g				m	
1	208.	5	25°C				n	
Pressure mm 25°C			30 mm		47.73	5	o	
t _e	1829.7	5	BP		38.24	5	m'	
Density g/ml 20°C	0.8190 ^a	3	t _e		34.78	5	n'	
d ₄ ^t 25	0.8157 ^a	3	t _e (d, e)		34.55	5	o'	
d ₄ ^t 30			ΔHv/T _e		18.62	5		
a	0.8322	5	d 298 to		67.92	5	Surface tension dynes/cm. 20°C	
b	-0.03660	5	e 512 °C		0.0678	5	30	28.48
Ref. Index n _D 25	1.4560 ^a	3	e' °C				40	27.57
25	1.4537 ^a	3	d _c g/ml					26.69
30			v _c ml/g					
"C"	0.7368	4	t _c °C					
MR (Obs.)	136.003	4	P _c mm					
MR (Calc.) (nD-d/2)	135.604	5	PV/RT 25°C		1.0000	5	Parachor [P] 20°C	
Dielectric			30 mm		0.8973	5	30	
A 298 to	7.42954	5	BP		0.8591	5	40	
B 522 °C	2701.9	5	t _e				Sugd. 1155.8	
C	156.	5	t _c				Exp. L.l.%/wt. u.	
A* 298 to	2.28608	5	ΔHc kcal/m				Dispersion	
B* 512 °C	2609.2	5	ΔHf				Flash Point °C	
K			ΔFf				Fire Point	
c			Viscosity centistokes γ °C				M Spec. Ultra V. X-Ray Dif. Infrared	
t _x to			B ^v to				Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
t _x °C			A ^v °C					
A' to			(B ^v) to					
B' °C			(A ^v) °C					
C' °C			c _p liq. °K					
A' * to			c _p vap. °K					
B' * °C			c _v vap.					
Ac to								
Bc t _c °C								
Cc °C								
Cryos. A° const. B°								
t _e °C	492.39	5						

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 81

NAME		Dimethyl-n-heptacosylamine				STRUCTURAL FORMULA			
						$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{25}\text{CH}_3$			
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_{29}\text{H}_{61}\text{N}$	Molecular Weight 423.786						
		Ref.			Ref.	Ref.			
F.P. °C			dt/dP °C/mm			f	to		
F.P. 100%			25°C			g	°C		
B.P. °C			BP	0.0754	5	h	-----		
760 mm	446.	3	t _e	0.0370	5	f'	to		
100	349.	5	30 mm	1.1152	5	g'	°C		
30	304.	5	ΔHm cal/g			h'			
10	270.	5				m	to		
1	213.	5	ΔHv cal/g			n	°K		
Pressure mm 25°C			25°C			o			
t _e	1847.5	5	30 mm	46.74	5				
Density g/ml 20°C			BP	37.35	5	m'	to		
25	0.8202 ^a	3	t _e (d, e)	33.86	5	n'	°K		
d ₄ 30	0.8168 ^a	3	ΔHv/T _e	33.65	5	o'			
a	0.8338	5		18.52	5	Surface tension dynes/cm. 20°C			
b	-0.03680	5	d 304 to	66.96	5	γ	28.59	5	
Ref. Index n _D 20°C			e 522 °C	0.0664	5		30	27.66	
25	1.4567 ^a	3	e' to °C				40	26.74	
30	1.4544 ^a	3				Parachor [F] 20°C			
"C"	0.7368	4	d _c g/ml						
MR (Obs.)	140.639	4	v _c ml/g						
MR (Calc.) (nD-d/2)	140.222	5	t _c °C						
Dielectric			P _c mm						
A 304 to	7.42877	5	PV/RT 25°C						
B 532 °C	2728.8	5	30 mm	1.0000	5	Exp. L. l. %/wt. u.			
C	154.	5	BP	0.8960	5	Dispersion			
A* 304 to	2.29800	5	t _e	0.8571	5	Flash Point °C			
B* 522 °C	2636.5	5	t _c			Fire Point			
K			ΔHc kcal/m			M. Spec. Ultra V.			
c			ΔHf			X-Ray Dif.			
t _k to °C			ΔFf			Infrared			
t _x to °C			Viscosity centistokes η °C			Solubility in ⁺			
A' to °C						Acetone			
B' to °C			B ^v to °C			Carbon tet.			
C' to °C			A ^v to °C			Benzene			
A'* to °C			(B ^v) to °C			Ether			
B'* to °C			(A ^v) to °C			n-Heptane			
Ac to °C			c _p liq. °C			Ethanol			
Bc to °C			c _p vap. °K			Water			
Cc to °C			c _v vap.			Water in			
Cryos. A° const. B°									
t _e °C	501.61	5							

^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-octacosylamine			STRUCTURAL FORMULA		
					$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{26}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{30}\text{H}_{63}\text{N}$	Molecular Weight	437.812		
	3						
F. P. °C	60.						
F. P. 100%							
B. P. °C							
760 mm	454.	3		dt/dP °C/mm 25°C			
100	356.	5		BP	0.0761	5	
30	311.	5		t_e	0.0371	5	
10	277.	5		30 mm	1.1273	5	
1	219.	5		$\Delta\text{Hm cal/g}$			
Pressure mm 25°C				$\Delta\text{Hv cal/g}$ 25°C			
t_e	1865.4	5		30 mm	45.77	5	
Density g/ml 20°C				BP	36.53	5	
d_4^{25}	0.8212 ^a	3		t_e	33.06	5	
d_4^{30}	0.8179 ^a	3		t_e (d, e)	32.86	5	
				$\Delta\text{Hv}/T_e$	18.46	5	
a	0.8344	5		d 311 to	65.88	5	
b	-0.03660	5		e 531 °C	0.0646	5	
Ref. Index n_D 20°C				d' to			
25	1.4573 ^a	3		e' °C			
30	1.4551 ^a	3		e' to			
"C"	0.7368	4		d g/ml			
MR (Obs.)	145.281	4		v c ml/g			
MR (Calc.) (nD-d/2)	144.840	5		t_c °C			
Dielectric				P c mm			
A 311 to	7.43582	5		PV/RT 25°C			
B 541 °C	2764.9	5		30 mm	1.0000	5	
C	153.	5		BP	0.8948	5	
A* 311 to	2.31683	5		t_e	0.8552	5	
B* 531 °C	2672.6	5		t_c			
K c to				$\Delta\text{Hc kcal/m}$			
t_k to				ΔHf			
t_x °C				ΔFf			
A' to				Viscosity centistokes			
B' to				η °C			
C' °C				B ^v to			
A' * to				A ^v °C			
B' * °C				(B ^v) to			
Ac to				(A ^v) °C			
Bc t_c °C				c _p liq. °K			
Cc °C				c _p vap. °K			
Cryos. A° const. B°				c _v vap.			
t_e °C	510.83	5					

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 83

NAME		Dimethyl-n-nonacosylamine				STRUCTURAL FORMULA			
						$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{27}\text{CH}_3$			
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{31}\text{H}_{65}\text{N}$	Molecular Weight	451.838				
F. P. °C				dt/dP °C/mm		f		to	
F. P. 100%				25°C		g		°C	
B. P. °C				BP	0.0769	h			
760 mm	462.	3		t_e	0.0372	h'			
100	363.	5		30 mm	1.1385	g'		to	
30	318.	5				h'		°C	
10	283.	5		ΔHm cal/g					
1	224.	5							
Pressure mm 25°C				ΔHv cal/g		m		to	
t_e	1883.1	5		25°C		n		°K	
				30 mm	44.91	o			
Density g/ml 20°C				BP	35.75				
d_4^{25}	0.8222 ^a	3		t_e	32.26	m'		to	
d_4^{30}	0.8189 ^a	3		t_e (d, e)	32.07	n'		°K	
				$\Delta\text{Hv}/T_e$	18.38	o'			
a	0.8354	5		d 318 to	65.04				
b	-0.03660	5		e 540 °C	0.0634				
Ref. Index n_D 20°C				d' to					
25	1.4579 ^a	3		e' °C					
30	1.4557 ^a	3		d_c g/ml					
"C"	0.7368	4		v_c ml/g					
MR (Obs.)	149.922	4		t_c °C					
MR (Calc.)	149.458	5		P_c mm					
(nD-d/2)				PV/RT					
Dielectric				25°C					
A 318 to	7.43500	5		30 mm	1.0000				
B 550 °C	2791.7	5		BP	0.8936				
C	151.	5		t_e	0.8533				
A* 318 to	2.32787	5		t_c					
B* 540 °C	2700.0	5		ΔHc kcal/m					
K				ΔHf					
t_k °C				ΔFf					
t_x °C				Viscosity centistokes					
A' to				η °C					
B' °C				B^v to					
C' °C				A^v °C					
A''* to				(B'') °C					
B''* °C				(A'') °C					
Ac to				c_p liq. °C					
Bc t_c °C				c_p vap. °K					
Cc °C				c_v vap.					
Cryos. A° const. B°									
t_e °C	520.06	5							

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-triacontylamine			STRUCTURAL FORMULA	
					(CH ₃) ₂ NCH ₂ (CH ₂) ₂₈ CH ₃	
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₂ H ₆₇ N	Molecular Weight	465.864	
F. P. °C	65.	3				
F. P. 100%						
B. P. °C						
760 mm	470.	3		0.0777	5	
100	370.	5		0.0373	5	
30	324.	5		1.1506	5	
10	289.	5				
1	230.	5				
Pressure mm 25°C						
t _e	1900.8	5				
Density g/ml 20°C	0.8231 ^a	3				
d ₄ ^t 25	0.8199 ^a	3				
d ₄ ^t 30						
a	0.8359	5				
b	-0.03640	5				
Ref. Index n _D 20°C	1.4584 ^a	3				
25	1.4563 ^a	3				
30						
"C"	0.7367	4				
MR (Obs.)	154.553	4				
MR (Calc.) (n _D -d/2)	154.076	5				
Dielectric						
A 324 to	7.44185	5				
B 559 °C	2827.8	5				
C	150.	5				
A* 324 to	2,34575	5				
B* 549 °C	2736.2	5				
K						
c						
t _x — to						
t _x — °C						
A' — to						
B' — °C						
C'						
A'* to						
B'* °C						
Ac to						
Bc — °C						
Cc — °C						
Cryos. A* consts. B*						
t _e °C	529.29	5				
dt/dP °C/mm 25°C						
BP						
t _e 30 mm						
ΔHm cal/g						
ΔHv cal/g 25°C						
30 mm	44.05	5				
BP	35.03	5				
t _e	31.56	5				
t _e (d, e)	31.37	5				
ΔHv/T _e	18.32	5				
d 324 to	64.09	5				
e 549 °C	0.0618	5				
d' — to						
e' — °C						
d _c g/ml						
v _c ml/g						
t _c °C						
P _c mm						
PV/RT 25°C						
30 mm	1.0000	5				
BP	0.8924	5				
t _e	0.8514	5				
t _c						
ΔHc kcal/m						
ΔHf						
ΔFf						
Viscosity centistokes η °C						
B _v — to						
A _v — °C						
(B _v) — to						
(A _v) — °C						
c _p liq. °K						
c _p vap. °K						
c _v vap.						
f — to						
g — °K						
h						
f' — to						
g' — °K						
h'						
m — to						
n — °K						
o						
m' — to						
n' — °K						
o'						
Surface tension dynes/cm. 20°C						
30	28.86	5				
40	27.97	5				
40	27.10	5				
Parachor [P] 20°C						
30						
40						
Sugd.	1311.8	5				
Exp. L. l. %/wt. u.						
Dispersion						
Flash Point °C						
Fire Point						
M Spec. Ultra V. X-Ray Dif. Infrared						
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in						

^a For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 85

NAME		Dimethyl-n-hentriacontylamine				STRUCTURAL FORMULA		
						(CH ₃) ₂ NCH ₂ (CH ₂) ₂₉ CH ₃		
Mole % Pur.	Ref. 3	Molecular Formula C ₃₃ H ₆₉ N	Molecular Weight 479.890					
		Ref.			Ref.	Ref.		
F. P. °C			dt/dP °C/mm 25°C			f	to °C	
F. P. 100%			BP	0.0783	5	g	to °C	
B. P. °C			t _e	0.0374	5	h	to °C	
760 mm	477.	3	30 mm	1.1603	5	f'	to °C	
100	376.	5	ΔHm cal/g			g'	to °C	
30	330.	5				h'	to °C	
10	294.	5				m	to °K	
1	235.	5	ΔHv cal/g 25°C			n	to °K	
Pressure mm 25°C			30 mm	43.23	5	o	to °K	
t _e	1915.6	5	BP	34.28	5	m'	to °K	
Density g/ml 20°C			t _e	30.77	5	n'	to °K	
25	0.8240 ^a	3	t _e (d, e)	30.61	5	o'	to °K	
d ₄ ^t	0.8207 ^a	3	ΔHv/T _e	18.22	5	Surface tension dynes/cm. 20°C		
d ₄ ^t 30						γ	28.94	
a	0.8372	5	d 330 to °C	63.30	5	30	28.02	
b	-0.03660	5	d' 557 to °C	0.0608	5	40	27.13	
Ref. Index n _D 20°C			e'			Parachor [P] 20°C		
25	1.4589 ^a	3				30		
30	1.4568 ^a	3	d _c g/ml v _c ml/g t _c °C			40		
"C"	0.7367	4	P _c mm			Sugd.	1350.8	
MR (Obs.)	159.182	4	PV/RT 25°C			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	158.694	5	30 mm	1.0000	5	Dispersion		
Dielectric			BP	0.8912	5	Flash Point °C		
A 330 to °C	7.43920	5	t _e	0.8495	5	Fire Point		
B 567 °C	2849.0	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared		
C	148.	5	ΔHc kcal/m ΔHf ΔFf			Solubility in ⁺		
A* 330 to °C	2.35489	5	Viscosity centistokes η °C			Acetone		
B* 557 °C	2758.1	5				Carbon tet.		
K						Benzene		
c						Ether		
t _k to °C						n-Heptane		
t _x to °C						Ethanol		
A' to °C						Water		
B' to °C						Water in		
C' to °C								
A'* to °C								
B'* to °C								
Ac to °C								
Bc to °C								
Cc to °C								
Cryos. A* const. B*								
t _e °C	537.37	5						

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-dotriacontylamine		STRUCTURAL FORMULA	
				$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{30}\text{CH}_3$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{34}\text{H}_{71}\text{N}$	Molecular Weight	493.916
F.P. °C	69.	Ref.			
F.P. 100%					
B.P. °C					
760 mm	485.	3		0.0791	5
100	383.	5		0.0375	5
30	336.	5		1.1723	5
10	301.	5			
1	240.	5			
Pressure mm 25°C					
t_e	1933.2	5			
Density g/ml 20°C	0.8249 ^a	3			
d_4^{25}	0.8216 ^a	3			
"C"	0.7366	4			
MR (Obs.)	163.809	4			
MR (Calc.) (nD-d/2)	163.312	5			
Dielectric					
A 336 to	7.44588	5			
B 577 °C	2885.1	5			
C	147.	5			
A* 336 to	2.37194	5			
B* 567 °C	2794.4	5			
K					
t_x — to					
t_x — °C					
A' — to					
B' — °C					
C'					
A'*	to				
B'*	°C				
Ac — to					
Bc — °C					
Cc — °C					
Cryos. A°					
consts. B°					
t_e °C	546.60	5			
dt/dP °C/mm 25°C					
BP					
t_e 30 mm					
ΔH_m cal/g					
ΔH_v cal/g 25°C					
30 mm	42.47	5			
BP	33.63	5			
t_e	30.11	5			
t_e (d, e)	29.97	5			
$\Delta H_v/T_e$	18.14	5			
d 336 to	62.48	5			
e 567 °C	0.0595	5			
d' — to					
e' — °C					
d _v g/ml					
v _c ml/g					
t _c °C					
P _c mm					
PV/RT 25°C					
30 mm	1.0000	5			
BP	0.8900	5			
t_e	0.8476	5			
t _c					
ΔH_c kcal/m					
ΔH_f					
ΔF_f					
Viscosity centistokes					
η °C					
B ^v — to					
A ^v — °C					
(B ^v) — to					
(A ^v) — °C					
c _p liq. °K					
c _p vap. °K					
c _v vap.					
f — to					
g — °K					
h					
f' — to					
g' — °K					
h'					
m — to					
n — °K					
o					
m' — to					
n' — °K					
o'					
Surface tension dynes/cm. 20°C					
30	29.03	5			
40	28.11	5			
40	27.21	5			
Parachor [P] 20°C					
30					
40					
Sugd.	1389.8	5			
Exp. L. l. %/wt. u.					
Dispersion					
Flash Point °C					
Fire Point					
M Spec. Ultra V. X-Ray Dif. Infrared					
Solubility in +					
Acetone					
Carbon tet.					
Benzene					
Ether					
n-Heptane					
Ethanol					
Water					
Water in					
^a For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

TABLE VI. AMINOALKANES

No. 87

NAME		Dimethyl-n-tritriacontylamine			STRUCTURAL FORMULA		
					$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{31}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{35}\text{H}_{73}\text{N}$	Molecular Weight	507.942		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°C
B. P. °C			BP	0.0798	5	h	
760 mm	492.	3	t_e	0.0375	5	f'	to
100	389.	5	t_e (d, e)	1.1828	5	g'	°C
30	342.	5	ΔHm cal/g			h'	
10	306.	5	ΔHv cal/g			m	to
1	245.	5	25°C			n	°K
Pressure mm 25°C			30 mm	41.70	5	o	
t_e	1948.7	5	BP	32.98	5	m'	to
Density g/ml 20°C			t_e	29.46	5	n'	°K
25	0.8257 ^a	3	t_e (d, e)	29.33	5	o'	
d_4^{25}	0.8224 ^a	3	$\Delta\text{Hv}/T_e$	18.07	5	Surface tension dynes/cm. 20°C	
a	0.8389	5	d 342 to	61.62	5	30	29.10
b	-0.03660	5	e 575 °C	0.0582	5	40	28.18
Ref. Index n_D 20°C			d'			40	27.28
25	1.4599 ^a	3	e'			Parachor [P] 20°C	
30	1.4578 ^a	3	d_c g/ml			30	
"C"	0.7367	4	v_c ml/g			40	
MR (Obs.)	168.456	4	t_c °C			Sugd.	1428.8
MR (Calc.) (nD-d/2)	167.930	5	P_c mm			Exp. L. l. %/wt. u.	
Dielectric			PV/RT 25°C			Dispersion	
A 342 to	7.45069	5	30 mm	1.0000	5	Flash Point °C	
B 585 °C	2915.6	5	BP	0.8890	5	Fire Point	
C 146.	146.	5	t_e	0.8461	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 342 to	2.38695	5	t_c			Solubility in ⁺	
B* 575 °C	2825.0	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
t_k to			ΔFf			Benzene	
t_x °C			Viscosity centistokes η °C			Ether	
A' to			B^v to			n-Heptane	
B' °C			A' °C			Ethanol	
C' °C			(B')			Water	
A'* to			(A')			Water in	
B'* °C			c_p liq. °C				
Ac to			c_p vap. °K				
Bc °C			c_v vap.				
Cc °C							
Cryos. A* consts. B*							
t_e °C	554.70	5					

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-tetraatriacontylamine			STRUCTURAL FORMULA		
					$(\text{CH}_3)_2\text{NCH}_2(\text{CH}_2)_{32}\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{36}\text{H}_{75}\text{N}$	Molecular Weight	521.968		
		Ref.			Ref.		
F.P. °C	73.	3			dt/dP		
F.P. 100%					°C/mm		
B.P. °C					25°C		
760 mm	498.	3			BP	0.0804	5
100	394.	5			t_e	0.0376	5
30	347.	5			30 mm	1.1908	5
10	311.	5			$\Delta\text{Hm cal/g}$		
1	250.	5			$\Delta\text{Hv cal/g}$		
Pressure mm 25°C					25°C		
t_e	1961.4	5			30 mm	40.96	5
Density g/ml 20°C	0.8264 ^a	3			BP	32.31	5
d_4^{25}	0.8231 ^a	3			t_e	28.78	5
					t_e (d,e)	28.66	5
					$\Delta\text{Hv}/T_e$	18.00	5
a	0.8396	5			d 347 to	60.85	5
b	-0.03660	5			e 582 °C	0.0573	5
Ref. Index n_D 20°C					d' to		
25	1.4603 ^a	3			e' °C		
30	1.4582 ^a	3			d g/ml		
"C"	0.7366	4			v ml/g		
MR (Obs.)	173.090	4			t_c °C		
MR (Calc.)	172.548	5			P mm		
Dielectric					PV/RT		
A 347 to	7.44630	5			25°C		
B 592 °C	2931.0	5			30 mm	1.0000	5
C	144.	5			BP	0.8880	5
A* 347 to	2.39352	5			t_e	0.8445	5
B* 582 °C	2841.2	5			t_c		
K					$\Delta\text{Hc kcal/m}$		
t_x to					ΔHf		
t_x °C					ΔFf		
A' to					Viscosity		
B' °C					centistokes		
C' to					η °C		
A'* to					B ^v to		
B'* °C					A ^v °C		
Ac to					(B ^v) to		
Bc °C					(A ^v) °C		
Cc °C					c_p liq. °K		
Cryos. A° const. B°					c_p vap. °K		
t_e °C	561.64	5			c_v vap.		
^a For undercooled liquid below normal F.P.				⁺ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 89

NAME		Dimethyl-n-pentatriacontylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₃₃ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₇ H ₇₇ N	Molecular Weight	535.994		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°C
B. P. °C			BP	0.0810	5	h	to
760 mm	505.	3	t _e	0.0377	5	f'	to
100	400.	5	30 mm	1.2013	5	g'	°C
30	353.	5	ΔHm cal/g			h'	
10	316.	5				m	to
1	254.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1976.9	5	30 mm	40.27	5	m'	to
Density g/ml 20°C			BP	31.72	5	n'	°K
25	0.8272 ^a	3	t _e (d, e)	28.19	5	o'	
d ₄ ^t	0.8239 ^a	3	t _e	28.09	5	Surface tension dynes/cm. 20°C	
30			ΔHv/T _e	17.92	5	30	29.24
a	0.8404	5	d 353 to	60.08	5	40	28.32
b	-0.03660	5	e 590 °C	0.0561	5	40	27.42
Ref. Index			d' to			Parachor [P] 20°C	
n _D 20°C	1.4608 ^a	3	e' °C			30	
25	1.4587 ^a	3				40	
30			d _c g/ml			Sugd.	1506.8
"C"	0.7367	4	v _c ml/g			Exp. L. l. %/wt. u.	
MR (Obs.)	177.736	4	t _c °C			Dispersion	
MR (Calc.) (n _D -d/2)	177.166	5	P _c mm			Flash Point °C	
Dielectric			PV/RT 25°C	1.0000	5	Fire Point	
A 353 to	7.45103	5	30 mm	0.8870	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
B 600 °C	2961.5	5	BP	0.8430	5	Solubility in ⁺	
C	143.	5	t _e			Acetone	
A* 353 to	2.40787	5	t _e			Carbon tet.	
B* 590 °C	2871.8	5	t _c			Benzene	
K			ΔHc kcal/m			Ether	
t _k to			ΔHf			n-Heptane	
t _x to			ΔFf			Ethanol	
A' to			Viscosity centistokes			Water	
B' to			η °C			Water in	
C' to			B ^v to				
A'* to			A ^v °C				
B'* °C			(B ^v)				
Ac to			(A ^v)				
Bc to			c _p liq: °C				
Cc to			c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	569.75	5					

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-hexatriacontylamine			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCH ₂ (CH ₂) ₃₄ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₃₈ H ₇₉ N	Molecular Weight	550.020		
F. P. °C	76.	3					
F. P. 100%							
B. P. °C							
760 mm	511.	3		0.0816	5		
100	406.	5		0.0378	5		
30	358.	5					
10	321.	5		1.2102	5		
1	259.	5					
Pressure mm 25°C							
t _e	1989.6	5					
Density g/ml 20°C	0.8278 ^a	3					
d ₄ ^t 25	0.8245 ^a	3					
d ₄ ^t 30							
"a"	0.8410	5					
"b"	-0.03660	5					
Ref. Index n _D 20°C	1.4612 ^a	3					
25	1.4591 ^a	3					
30							
"C"	0.7367	4					
MR (Obs.)	182.391	4					
MR (Calc.) (nD-d/2)	181.784	5					
Dielectric							
A 358 °C	7.45399	5					
B 607 °C	2986.3	5					
C	142.	5					
A* 358 to 597 °C	2.42080	5					
B*	2897.0	5					
K							
c							
t _k to °C							
t _x to °C							
A' to °C							
B' to °C							
C'							
A'*	to °C						
B'*	to °C						
Ac to °C							
Bc to °C							
Cc to °C							
Cryos. A° const. B°							
t _e °C	576.68	5					
dt/dP °C/mm 25°C							
BP							
t _e							
30 mm							
ΔHm cal/g							
ΔHv cal/g 25°C							
30 mm BP							
t _e							
t _e (d, e)							
ΔHv/T _e							
d 358 to 597 °C							
e 597 to °C							
d' to °C							
e' to °C							
d _c g/ml							
v _c ml/g							
t _c °C							
P _c mm							
PV/RT 25°C							
30 mm BP							
t _e							
t _c							
ΔHc kcal/m							
ΔHf							
ΔFf							
Viscosity centistokes °C							
η							
B ^v to °C							
A ^v to °C							
(B ^v) to °C							
(A ^v) to °C							
c _p liq. °K							
c _p vap. °K							
c _v vap.							
f							
g							
h							
f'							
g'							
h'							
m							
n							
o							
m'							
n'							
o'							
Surface tension dynes/cm. 20°C							
30							
40							
29.30							
28.37							
27.47							
Parachor [P] 20°C							
30							
40							
Sugd. 1545.8							
Exp. L. l. %/wt. u.							
Dispersion							
Flash Point °C							
Fire Point							
M Spec. Ultra V. X-Ray Dif. Infrared							
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in							

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 91

NAME		Dimethyl-n-heptatriacontylamine				STRUCTURAL FORMULA				
						(CH ₃) ₂ NCH ₂ (CH ₂) ₃₅ CH ₃				
Mole % Pur.	Ref. 3	Molecular Formula	C ₃₉ H ₈₁ N	Molecular Weight	564.046					
		Ref.			Ref.					
F.P. °C			dt/dP °C/mm			f		to		
F.P. 100%			25°C			g		°C		
B.P. °C			BP	0.0823	5	h				
760 mm	518.	3	t _e	0.0378	5	f'		to		
100	412.	5	30 mm	1.2206	5	g'		°C		
30	363.	5	ΔHm cal/g			h'				
10	326.	5	ΔHv cal/g			m		to		
1	263.	5	25°C			o		°K		
Pressure mm			30 mm	38.95	5	n				
t _e	2004.9	5	BP	30.59	5	m'		to		
Density g/ml			t _e	27.04	5	n'		°K		
20°C	0.8285 ^a	3	t _e (d, e)	26.99	5	o'				
25	0.8252 ^a	3	ΔHv/T _e		17.78	Surface tension dynes/cm. 20°C				
d ₄ 30			d 363 to	58.58	5	γ		29.36	5	
a	0.8417	5	e 605	0.0540	5			30	5	
b	-0.03660	5	d'					40	5	
Ref. Index n _D			e'			Parachor [F] 20°C				
20°C	1.4616 ^a	3	d _c g/ml							
25	1.4595 ^a	3	v _c ml/g							
30			t _c °C							
"C"	0.7367	4	P _c mm			Sugd. 1584.8				
MR (Obs.)	187.023	4	PV/RT			Exp. L. l. %/wt. u.				
MR (Calc.) (nD-d/2)	186.402	5	25°C			Dispersion				
Dielectric			30 mm	1.0000	5	Flash Point °C				
A 363 to	7.45859	5	BP	0.8851	5	Fire Point				
B 615 °C	3016.8	5	t _e	0.8399	5	M. Spec. Ultra V. X-Ray Dif. Infrared				
C 141.		5	t _c			Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in				
A* 363 to	2.43452	5	ΔHc kcal/m							
B* 605 °C	2927.7	5	ΔHf							
K			ΔFf							
t _k to °C			Viscosity centistokes η °C							
t _x to °C										
A' to °C										
B' to °C										
C' to °C										
A'* to °C										
B'* to °C										
Ac to °C										
Bc to °C										
Cc to °C										
Cryos. A°										
const. B°										
t _e °C	584.79	5								

^a For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Dimethyl-n-octatriacontylamine				STRUCTURAL FORMULA			
						(CH ₃) ₂ NCH ₂ (CH ₂) ₃₆ CH ₃			
Mole % Pur.	Ref.	Molecular Formula	C ₄₀ H ₈₃ N	Molecular Weight	578.072				
		Ref.			Ref.				
F. P. °C	79.	3	dt/dP °C/mm			f	to		
F. P. 100%			25°C			g	°K		
B. P. °C			BP		0.0828	h			
760 mm	524.	3	t _e		0.0379	f'	to		
100	417.	5	30 mm		1.2291	g'	°K		
30	368.	5	ΔHm cal/g			h'			
10	331.	5	ΔHv cal/g			m	to		
1	268.	5	25°C			n	°K		
Pressure mm 25°C			30 mm		38.33	o			
t _e	2017.5	5	BP		30.06	m'	to		
Density g/ml 20°C			t _e		26.53	n'	°K		
d ₄ ^t 25	0.8290 ^a	3	t _e (d, e)		26.46	o'			
d ₄ ^t 30	0.8258 ^a	3	ΔHv/T _e		17.73	Surface tension dynes/cm. 20°C			
a	0.8418	5	d 368 to		57.89	30			
b	-0.03640	5	e 612 °C		0.0531	40			
Ref. Index n _D 20°C			d' °C			29.40			
25	1.4620 ^a	3	e' °C			28.51			
30	1.4598 ^a	3	d			27.63			
"C"	0.7369	4	c			Sugd. 1623.8			
MR (Obs.)	191.701	4	v			Exp. L. l. %/wt. u.			
MR (Calc.)	191.020	5	c			Dispersion			
(nD-d/2)			c			Flash Point °C			
Dielectric			P			Fire Point			
A 368 to	7.45786	5	c			M Spec.			
B 622 °C	3036.9	5	c			Ultra V.			
C	140.	5	c			X-Ray Dif.			
A* 368 to	2.44347	5	c			Infrared			
B* 612 °C	2948.4	5	c			Solubility in +			
K			c			Acetone			
c			c			Carbon tet.			
t _k °C			c			Benzene			
t _x °C			c			Ether			
A' to			c			n-Heptane			
B' °C			c			Ethanol			
C' °C			c			Water			
A'* to			c			Water in			
B'* °C			c						
A _c to			c						
B _c °C			c						
C _c °C			c						
Cryos. A° const. B°			c						
t _e °C	591.74	5	c						

^a For undercooled liquid below normal F. P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 93

NAME	Trimethylamine			STRUCTURAL FORMULA				
					(CH ₃) ₃ N			
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₉ N	Molecular Weight 59.110					
		Ref.					Ref.	
F. P. °C	-117.3	3	dt/dP °C/mm			f	to	
F. P. 100%			25°C	0.0177	5	g	°C	
B. P. °C			BP	0.0331	5	h	---	
760 mm	2.87	3	t _e	0.0339	5	f'	to	
100	-39.11	5	30 mm	0.4647	5	g'	°C	
30	-57.66	5	ΔHm cal/g			h'		
10	-71.75	5				m	to	
1	-95.03	5	ΔHv cal/g			n	°K	
Pressure mm 25°C	1699.2	5	25°C	92.39	5	o		
t _e	737.5	5	30 mm	111.96	5	m'	to	
Density g/ml 20°C	0.6331 ^a	3	BP	97.57	5	n'	°K	
t	0.6270 ^a	3	t _e (d, e)	97.75	5	o'		
d ₄			t _e	97.75	5	Surface tension dynes/cm. 20°C		
30			ΔHv/T _e	20.99	5	30	13.63	5
a	0.6590	5	d -58 to	98.25	5	40	12.45	5
b	-0.00105	5	e 22 °C	0.2377	5	40	11.28	5
Ref. Index			d' to °C			Parachor [P]		
n _D 20°C	1.3476 ^a	3	e' to °C			20°C		
25	1.3443 ^a	3				30		
30			d _c g/ml			40		
"C"	0.7375	4	v _c ml/g			Sugd.	180.8	5
MR (Obs.)	19.966	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Calc.)	20.154	5	P _c mm			Dispersion		
Dielectric			PV/RT 25°C	0.9384	5	Flash Point °C		
A -58 to	6.97038	5	30 mm	1.0000	5	Fire Point		
B 32 °C	968.7	5	BP	0.9622	5	M. Spec. Ultra V.		
C	234.	5	t _e	0.9630	5	X-Ray Dif.		
A* -58 to	1.25840	5	t _c			Infrared		
B* 22 °C	906.0	5	ΔHc kcal/m			Solubility in ⁺		
K			ΔHf			Acetone		
c			ΔFf			Carbon tet.		
t _k to °C			Viscosity centistokes			Benzene		
t _x to °C			η			Ether		
A' to °C						n-Heptane		
B' to °C			B ^v to °C			Ethanol		
C' to °C			A ^v to °C			Water		
A'* to °C			(B ^v)			Water in		
B'* to °C			(A ^v)					
Ac to °C			c _p liq. °C					
Bc to °C			c _p vap. °K					
Cc to °C			c _v vap.					
Cryos. A°								
const. B°								
t _e °C	2.12	5						

^a For the liquid at saturation pressure⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Triethylamine			STRUCTURAL FORMULA		
					(C ₂ H ₅) ₃ N		
Mole % Pur.	Ref.	Molecular Formula	C ₆ H ₁₅ N	Molecular Weight	101.188		
		Ref.			Ref.		
F.P. °C	-114.7	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	0.3461	5	g	°K
B.P. °C			BP	0.0413	5	h	
760 mm	89.5	3	t _e	0.0340	5	f'	to
100	36.6	5	30 mm	0.5956	5	g'	°K
30	12.9	5	ΔHm cal/g			h'	
10	-5.2	5	ΔHv cal/g			m	to
1	-35.4	5	25°C	87.96	5	n	°K
Pressure mm 25°C	57.07	5	30 mm	89.92	5	o	
t _e	972.6	5	BP	77.70	5	m'	to
Density g/ml 20°C	0.7280	3	t _e (d, e)	76.47	5	n'	°K
d ₄ ^t 25	0.7235	3	t _e	76.43	5	o'	
d ₄ ^t 30			ΔHv/T _e	20.88	5	Surface tension dynes/cm. 20°C	
a	0.7460	5	d 13 to	91.98	5	30	21.04
b	-0.03887	5	e 117 °C	0.1595	5	40	20.00
Ref. Index n _D 20°C	1.4010	3	d' to			40	18.99
25	1.3980	3	e' °C			Parachor [P]	
30			d _c g/ml			20°C	
"C"	0.7343	4	v _c ml/g			30	
MR (Obs.)	33.770	4	t _c °C			40	
MR (Calc.) (nD-d/2)	34.008	5	P _c mm			Sugd.	297.8
Dielectric			PV/RT			Exp. L.l. %/wt.	
A 13 to	7.18658	5	25°C	0.9957	5	u.	
B 127 °C	1341.3	5	30 mm	1.0000	5	Dispersion	
C	222.	5	BP	0.9503	5	Flash Point °C	
A* 13 to	1.61128	5	t _e	0.9433	5	Fire Point	
B* 117 °C	1264.0	5	t _c			M Spec.	
K			ΔHc kcal/m			Ultra V.	
t _x to			ΔHf			X-Ray Dif.	
t _x °C			ΔFf			Infrared	
A' to			Viscosity centistokes			Solubility in +	
B' °C			η °C			Acetone	
C'			B ^v to			Carbon tet.	
A'*	to		A ^v °C			Benzene	
B'*	°C		(B ^v) to			Ether	
Ac to			(A ^v) °C			n-Heptane	
Bc t _c °C			c _p liq. °K			Ethanol	
Cc			c _p vap. °K			Water	
Cryos. A° const. B°			c _v vap.			Water in	
t _e °C	97.45	5	+ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 95

NAME		Tri-n-propylamine			STRUCTURAL FORMULA		
					(C ₃ H ₇) ₃ N		
Mole % Pur.	Ref. 3	Molecular Formula C ₉ H ₂₁ N	Molecular Weight 153.266				
	Ref.			Ref.		Ref.	
F.P. °C	-93.5	3	dt/dP °C/mm		f	to	
F.P. 100%			25°C		g	°C	
B.P. °C			BP	5.625	5	h	
760 mm	156.5	3	t _e	0.0477	5	f'	to
100	95.3	5	30 mm	0.0343	5	g'	°C
30	67.7	5	ΔHm cal/g	0.6932	5	h'	
10	46.6	5				m	to
1	11.4	5	ΔHv cal/g			n	°K
Pressure mm 25°C	2.64	5	25°C	77.99	5	o	
t _e	1148.6	5	30 mm	72.42	5	n'	to
Density g/ml 20°C	0.7567	3	BP	61.57	5	m'	°K
25	0.7523	3	t _e	59.75	5	n'	
d ₄ ^t 30			t _e (d, e)	59.66	5	o'	
			ΔHv/T _e	20.56	5	Surface tension dynes/cm. 20°C	
a	0.7743	5	d 68 to	80.69	5	γ	17.59
b	-0.03879	5	e 192 °C	0.1222	5		30 16.78
			d' to				40 16.00
Ref. Index n _D 20°C	1.4171	3	e' °C			Parachor [P] 20°C	
25	1.4151	3					
30			d _c g/ml				
"C"	0.7332	4	v _c ml/g				
MR (Obs.)	50.946	4	t _c °C				
MR (Calc.) (nD-d/2)	47.862	5	P _c mm				
Dielectric			PV/RT 25°C	1.0063	5	Exp. L.l. %/wt. u.	
A 68 to	7.25583	5	30 mm	1.0000	5	Dispersion	
B 202 °C	1599.1	5	BP	0.9402	5	Flash Point °C	
C	209.	5	t _e	0.9271	5	Fire Point	
			t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
A* 68 to	1.81012	5	ΔHc kcal/m			Solubility in ⁺	
B* 192 °C	1515.0	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes η °C			Benzene	
t _x to						Ether	
t _x °C						n-Heptane	
A' to						Ethanol	
B' °C						Water	
C' °C			B ^v to			Water in	
A'* to			A ^v °C				
B'* °C			(B ^v)				
Ac to			(A ^v)				
Bc t _c °C			c _p liq. °C				
Cc °C			c _p vap. °K				
Cryos. A* consts. B*			c _v vap.				
t _e °C	172.12	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Tri-n-octylamine			STRUCTURAL FORMULA	
					(CH ₃ (CH ₂) ₆ CH ₂) ₃ N	
Mole % Pur.	Ref. 3	Molecular Formula	C ₂₄ H ₅₁ N	Molecular Weight	353.656	
		Ref.			Ref.	Ref.
F. P. °C	-34.6	3	dt/dP °C/mm			f to
F. P. 100%			25°C			g °K
B. P. °C		3	BP	0.0669	5	h
760 mm	357.	5	t _e	0.0361	5	f' to
100	271.	5	30 mm	0.9856	5	g' °K
30	232.	5	ΔHm cal/g			h'
10	202.	5	ΔHv cal/g			m to
1	151.	5	25°C			n °K
Pressure mm 25°C			30 mm	48.41	5	o
t _e	1644.1	5	BP	39.41	5	m' to
Density g/ml 20°C	0.8121	3	t _e	36.56	5	n' °K
d ₄ ^t 25	0.8088	3	t _e (d,e)	36.37	5	o'
d ₄ ^t 30			ΔHv/T _e	19.22	5	
a	0.8253	5	d 232 to	65.04	5	Surface tension
b	-0.03660	5	e 419 °C	0.0718	5	dynes/cm. 20°C
Ref. Index n _D 20°C	1.4502	3	d' to			30
25	1.4486	3	e' °C			40
30						27.78
"C"	0.7341	4	d c g/ml			26.89
MR (Obs.)	117.076	4	v c ml/g			26.02
MR (Calc.)	117.132	5	t c °C			
(n _D -d/2)			P c mm			999.8
Dielectric			PV/RT 25°C	1.0000	5	5
A 232 to	7.39168	5	30 mm	0.9097	5	Dispersion
B 429 °C	2381.7	5	BP	0.8787	5	Flash Point °C
C 171.		5	t _e			Fire Point
A* 232 to	2.20961	5	t _c			M Spec.
B* 419 °C	2288.1	5	ΔHc kcal/m			Ultra V.
K			ΔHf			X-Ray Dif.
c			ΔFf			Infrared
t _k to			Viscosity centistokes °C			Solubility in +
t _x °C			η			Acetone
A' to			B ^v to			Carbon tet.
B' °C			A ^v °C			Benzene
C'			(B ^v) to			Ether
A'*	to		(A ^v) °C			n-Heptane
B'*	°C		c _p liq. °K			Ethanol
Ac to			c _p vap. °K			Water
Bc °C			c _v vap.			Water in
Cc °C						
Cryos. A° const. B°						
t _e °C	399.37	5				

+ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 97

NAME		Tri-n-decylamine			STRUCTURAL FORMULA		
					(CH ₃ (CH ₂) ₈ CH ₂) ₃ N		
Mole % Pur.	Ref. 3	Molecular Formula C ₃₀ H ₆₃ N	Molecular Weight 437.812				
		Ref.			Ref.		
F. P. °C	-1.	3	dt/dP °C/mm		f	to °C	
F. P. 100%			25°C		g		
B. P. °C			BP		h	to °C	
760 mm	406.	3	t _e		f'	to °C	
100	314.	5	30 mm		g'		
30	272.	5	ΔHm cal/g		h'		
10	240.	5					
1	185.	5	ΔHv cal/g				
Pressure mm 25°C			25°C		m	to °K	
t _e	1757.3	5	30 mm		n		
Density g/ml 20°C			BP		o		
t	0.8198	3	t _e				
d ₄ ^t	0.8165	3	t _e (d, e)		m'	to °K	
			ΔHv/T _e		n'		
a	0.8330	5	d 272 to °C				
b	-0.03660	5	e 476 to °C				
Ref. Index n _D 20°C			d' °C				
25	1.4451	3	e' °C				
30	1.4533	3	d _c g/ml				
"C"	0.7347	4	v _c ml/g				
MR (Obs.)	144.924	4	t _c °C				
MR (Calc.) (n _D -d/2)	144.840	5	P _c mm				
Dielectric			PV/RT 25°C				
A 272 to °C	7.41618	5	30 mm				
B 486 °C	2576.1	5	BP				
C	162.	5	t _e				
A* 272 to °C	2.31075	5	t _e				
B* 476 °C	2482.6	5	t _c				
K			ΔHc kcal/m				
c			ΔHf				
t _k to °C			ΔFf				
t _x to °C			Viscosity centistokes				
A' to °C			η °C				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A'* to °C			(B ^v) to °C				
B'* to °C			(A ^v) to °C				
Ac to °C			c _p liq. °C				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	455.57	5					
† grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		Tri-n-dodecylamine			STRUCTURAL FORMULA		
					(CH ₃ (CH ₂) ₁₀ CH ₂) ₃ N		
Mole % Pur.	Ref.	Molecular Formula	C ₃₆ H ₇₅ N	Molecular Weight	521.968		
		Ref.			Ref.		
F.P. °C	15.7	3	dt/dP °C/mm			f	to
F.P. 100%			25°C			g	°K
B.P. °C			BP	0.0756	5	h	
760 mm	448.	3	t _e	0.0370	5	f'	to
100	350.	5	30 mm	1.1184	5	g'	°K
30	306.	5	ΔHm cal/g			h'	
10	272.	5	ΔHv cal/g			m	to
1	215.	5	25°C			n	°K
Pressure mm 25°C			30 mm	38.05	5	o	
t _e	1852.2	5	BP	30.32	5	m'	to
Density g/ml 20°C	0.8251	3	t _e	27.35	5	n'	°K
d ^t 25	0.8219	3	t _e (d, e)	27.27	5	o'	
d ₄ 30			ΔHv/T _e	18.37	5	Surface tension dynes/cm. 20°C	
a	0.8379	5	d	306 to	5	30	28.98
b	-0.03640	5	e	524 °C	5	40	28.09
Ref. Index n _D 20°C	1.4585	3	e'				27.22
25	1.4567	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.7351	4	t _c °C			40	
MR (Obs.)	172.778	4	P _c mm			Sugd.	1467.8
MR (Calc.) (n _D -d/2)	172.548	5	PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 306 to	7.43251	5	BP	0.8958	5	Flash Point °C	
B 524 °C	2740.1	5	t _e	0.8567	5	Fire Point	
C	154.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 306 to	2.39139	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 524 °C	2647.7	5	ΔHf				
K			ΔFf				
c			Viscosity centistokes				
t _k to			η °C				
t _x °C			B ^v to				
A' to			A ^v °C				
B' to			(B ^v) to				
C' to			(A ^v) °C				
A'* to °C			c _p liq. °K				
B'* to °C			c _p vap. °K				
A _c to			c _v vap.				
B _c t _c °C							
C _c t _c °C							
Cryos. A° const. B°							
t _e °C	503.92	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VI. AMINOALKANES

No. 99

NAME		Tri-n-tetradecylamine			STRUCTURAL FORMULA		
					(CH ₃ (CH ₂) ₁₂ CH ₂)N		
Mole % Pur.	Ref. 3	Molecular Formula C ₄₂ H ₈₇ N	Molecular Weight 606.124				
		Ref.					Ref.
F. P. °C	33.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°C
B. P. °C			BP	0.0790	5	h	
760 mm	484.	3	t _e	0.0374	5	f'	to
100	382.	5	30 mm	1.1707	5	g'	°C
30	336.	5	ΔHm cal/g			h'	
10	300.	5				m	to
1	240.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1931.2	5	30 mm	34.56	5	m'	to
Density g/ml 20°C	0.8290 ^b	3	BP	27.26	5	n'	°K
t 25	0.8257 ^b	3	t _e (d, e)	24.23	5	o'	
d ₄ 30			t _e	24.24	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	17.94	5	γ	29.35
a	0.8422	5	d 336 to	51.06	5	30	28.43
b	-0.03660	5	e' 565 °C	0.0492	5	40	27.52
Ref. Index n _D 20°C			d' to			Parachor [P] 20°C	
25	1.4609 ^b	3	e' °C			30	
30	1.4591 ^b	3	d _c g/ml			40	
"C"	0.7352	4	v _c ml/g			Sugd.	1701.8
MR (Obs.)	200.592	4	t _c °C			Exp. L. l. %/wt. u.	
MR (Calc.) (nD-d/2)	200.256	5	P _c mm			Dispersion	
Dielectric			PV/RT 25°C			Flash Point °C	
A 336 to	7.44411	5	30 mm	1.0000	5	Fire Point	
B 575 °C	2879.4	5	BP	0.8902	5	M. Spec. Ultra V.	
C	147.	5	t _e	0.8479	5	X-Ray Dif.	
A* 336 to	2.45921	5	t _e			Infrared	
B* 565 °C	2788.7	5	ΔHc kcal/m			Solubility in ⁺	
K			ΔHf			Acetone	
c			ΔFf			Carbon tet.	
t _x to			Viscosity centistokes η °C			Benzene	
t _x °C						Ether	
A' to			B ^v to			n-Heptane	
B' °C			A ^v °C			Ethanol	
C' °C			(B ^v)			Water	
A'* to			(A ^v)			Water in	
B'* °C			c _p liq. °C				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	545.46	5					

^b For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Tri-n-hexadecylamine			STRUCTURAL FORMULA		
					(CH ₃ (CH ₂) ₁₄ CH ₂) ₃ N		
Mole % Pur.	Ref.	Molecular Formula	C ₄₈ H ₉₉ N	Molecular Weight	690.280		
F.P. °C	43.	3		dt/dP °C/mm			f to
F.P. 100%				25°C			g °K
B.P. °C				BP	0.0821	5	h
760 mm	516.	3		t _e	0.0378	5	f' to
100	410.	5		30 mm	1.2174	5	g' °K
30	362.	5		ΔHm cal/g			h'
10	325.	5		ΔHv cal/g			m to
1	262.	5		25°C			n °K
Pressure mm 25°C				30 mm	31.75	5	o
t _e	2000.4	5		BP	24.83	5	m' to
Density g/ml 20°C	0.8320 ^b	3		t _e	21.74	5	n' °K
d ₄ ^t 25	0.8287 ^b	3		t _e (d, e)	21.84	5	o'
d ₄ ^t 30				ΔHv/T _e	17.54	5	
a	0.8452	5		d 362 to	47.97	5	Surface tension dynes/cm. 20°C
b	-0.03660	5		e 602 to	0.0449	5	30
Ref. Index n _D 25	1.4629 ^b	3		d' to			40
30	1.4610 ^b	3		e' °C			29.64
"C"	0.7356	4		d c g/ml			28.71
MR (Obs.)	228.469	4		v c ml/g			27.80
MR (Calc.) (n _D -d/z)	227.964	5		t c °C			Sugd. 1935.8
Dielectric				P c mm			5
A 362 to	7.45521	5		PV/RT 25°C			Exp. L. l. %/wt. u.
B 612 °C	3005.4	5		30 mm	1.0000	5	Dispersion
C	141.	5		BP	0.8853	5	Flash Point °C
A* 362 to	2.51956	5		t _e	0.8403	5	Fire Point
B* 602 °C	2916.4	5		t _c			M Spec. Ultra V. X-Ray Dif. Infrared
K				ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
c				ΔHf			
t _k to				ΔFf			
x °C				Viscosity centistokes			
A' to				η °C			
B' °C				B ^v to			
C' °C				A ^v °C			
A'* to				(B ^v) to			
B'* °C				(A ^v) °C			
Ac to				c _p liq. °K			
Bc to				c _p vap. °K			
Cc °C				c _v vap.			
Cryos. A° const. B°							
t _e °C	582.47	5					

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VI. AMINOALKANES

No. 101

NAME		Tri-n-octadecylamine			STRUCTURAL FORMULA		
					$(\text{CH}_3(\text{CH}_2)_{16}\text{CH}_2)_3\text{N}$		
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{54}\text{H}_{111}\text{N}$	Molecular Weight	774.436		
		Ref.			Ref.		
F. P. °C	54.	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°C
B. P. °C			25°C			h	---
760 mm	543.	3	BP	0.0847	5	f'	to
100	434.	5	t _e	0.0381	5	g'	°C
30	384.	5	30 mm	1.2568	5	h'	
10	345.	5	ΔHm cal/g			m	to
1	281.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	2057.6	5	30 mm	29.34	5	m'	to
Density g/ml 20°C			BP	22.78	5	n'	°K
t	0.8343 ^b	3	t _e	19.69	5	o'	
d ₄	0.8311 ^b	3	t _e (d, e)	19.86	5	Surface tension dynes/cm. 20°C	
a	0.8471	5	ΔHv/T _e	17.19	5	γ	29.86
b	-0.03640	5	d 384 to	45.17	5		30
Ref. Index n _D 20°C			e 634 °C	0.0412	5		28.95
25	1.4643 ^b	3	d'				40
30	1.4625 ^b	3	e'			Parachor [P]	
"C"	0.7356	4	d _c g/ml			20°C	
MR (Obs.)	256.282	4	v _c ml/g			30	
MR (Calc.)	255.672	5	t _c °C			40	
(n _D -d/2)			P _c mm			Sugd.	2169.8
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A 384 to			25°C			Dispersion	
B 644 °C	7.46440	5	30 mm	1.0000	5	Flash Point °C	
C °C	3112.3	5	BP	0.8812	5	Fire Point	
A* 384 to			t _e	0.8339	5	M. Spec. Ultra V.	
B* 634 °C	2.57323	5	t _c			X-Ray Dif.	
K	3025.1	5	ΔHc kcal/m			Infrared	
c			ΔHf			Solubility in ⁺	
t _k to			ΔFf			Acetone	
t _x °C			Viscosity centistokes			Carbon tet.	
A' to			η			Benzene	
B' °C						Ether	
C' °C			B ^v to			n-Heptane	
A'* to			A ^v °C			Ethanol	
B'* °C			(B ^v)			Water	
Ac to			(A ^v)			Water in	
Bc t _c °C			c _p liq. °C				
Cc °C			c _p vap. °K				
Cryos. A°			c _v vap.				
const. B°							
t _e °C	613.75	5					

^b For undercooled liquid below normal F.P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Tri-n-icosylamine			STRUCTURAL FORMULA			
					(CH ₃ (CH ₂) ₁₈ CH ₂) ₃ N			
Mole % Pur.	Ref.	Molecular Formula	C ₆₀ H ₁₂₃ N	Molecular Weight	858.592			
F.P. °C	62.	Ref.	3	dt/dP °C/mm		f	to	Ref.
F.P. 100%				25°C		g	°K	
B.P. °C	568.	3		BP	0.0870	5		
760 mm	455.	5		t _e	0.0384	5		
100	404.	5		30 mm	1.2930	5		
30	365.	5		ΔHm cal/g				
10	298.	5		ΔHv cal/g				
1				25°C				
Pressure mm 25°C	2109.5	5		30 mm	27.35	5		
t _e				BP	21.05	5		
Density g/ml 20°C	0.8363 ^b	3		t _e	17.87	5		
d ₄ ^t 25	0.8330 ^b	3		t _e (d, e)	18.17	5		
d ₄ ^t 30				ΔHv/T _e	16.75	5		
a	0.8495	5		d 404 °C	42.91	5		
b	-0.03660	5		e 663 °C	0.0385	5		
Ref. Index n _D 20°C	1.465 ^b	3		d' °C				
25	1.4636 ^b	3		e' °C				
30				d c g/ml				
"C"	0.7358	4		v c ml/g				
MR (Obs.)	284.134	4		t c °C				
MR (Calc.)	283.380	5		P c mm				
(n _D -d/2)				PV/RT 25°C				
Dielectric				30 mm	1.0000	5		
A 404 to	7.46988	5		BP	0.8773	5		
B 673 °C	3207.8	5		t _e	0.8278	5		
C	131.	5		t _e				
A* 404 to	2.61916	5		ΔHc kcal/m				
B* 663 °C	3122.8	5		ΔHf				
K				ΔFf				
c				Viscosity centistokes				
t _k to °C				η °C				
t _x °C				B ^v to °C				
A' to °C				A ^v to °C				
B' to °C				(B ^v) to °C				
C' to °C				(A ^v) to °C				
A'* to °C				c _p liq. °K				
B'* to °C				c _p vap. °K				
Ac to °C				c _v vap.				
Bc to °C								
Cc to °C								
Cryos. A° const. B°								
t _e °C	642.75	5						

^b For undercooled liquid below normal F.P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VII. ALKYL CYANIDES

No. 1

NAME		Hydrogen cyanide			STRUCTURAL FORMULA		
		Hydrocyanic acid			HCN		
Mole % Pur.	Ref. 3	Molecular Formula	HCN	Molecular Weight	27.026		
		Ref.			Ref.		
F. P. °C	-13.24	3	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C	0.0356	5	h	
760 mm	25.70	3	BP	0.0349	5	f'	to
100	-18.87	5	t _e	0.0334	5	g'	°K
30	-38.81	5	30 mm	0.5013	5	h'	
10	-54.05	5	ΔHm cal/g			m	to
1	-79.42	5	ΔHv cal/g			n	°K
Pressure mm	740.1	5	25°C	238.48	5	o	
t _e	802.8	5	30 mm	268.50	5	m'	to
Density g/ml	0.6876	3	BP	238.15	5	n'	°K
25°C	0.6816	3	t _e	237.47	5	o'	
d ₄ 30			t _e (d, e)	237.46	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	21.37	5	γ	19.68
a	0.7118	5	d -39 to	250.24	5		18.30
b	-0.00116	5	e 47 °C	0.4704	5		16.96
Ref. Index n _D			d' to °C			Parachor [P] 20°C	
20°C	1.2614	3	e' to °C				
25	1.2594	3	d _c g/ml				
30			v _c ml/g				
"C"	0.5175	4	t _c °C				
MR (Obs.)	6.470	4	P _c mm			Sugd. 82.9	
MR (Calc.) (n _D -d/2)	6.568	5	PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C	0.9628	5	Dispersion	
A -39 to	7.17185	5	30 mm	1.0000	5	Flash Point °C	
B 57 °C	1123.0	5	BP	0.9621	5	Fire Point	
C	236.	5	t _e	0.9608	5	M. Spec. Ultra V. X-Ray Dif. Infrared	
A* -39 to	1.07847	5	t _c			Solubility in ⁺	
B* 47 °C	1051.9	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k to °C			Viscosity centistokes			Ether	
t _x to °C			η °C			n-Heptane	
A' to °C						Ethanol	
B' to °C						Water	
C' to °C						Water in	
A'* to °C			B ^v to °C				
B'* to °C			A ^v to °C				
Ac _t to °C			(B ^v) to °C				
Bc _t to °C			(A ^v) to °C				
Cc _t to °C			c _p liq. °K				
Cryos. A* consts. B*			c _p vap. °K				
t _e °C	27.16	5	c _v vap.				

* grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		Methyl cyanide (acetonitrile)			STRUCTURAL FORMULA		
					CH ₃ CN		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₃ N	Molecular Weight	41.052		
		Ref.			Ref.		
F.P. °C	-45.72						
F.P. 100%							
B.P. °C							
760 mm	81.60	3		dt/dP °C/mm 25°C	0.2487	5	f to
100	28.63	5		BP	0.0416	5	g °K
30	5.07	5		t _e	0.0347	5	h
10	-12.88	5		30 mm	0.5913	5	f' to
1	-42.66	5		ΔHm cal/g			g' °K
Pressure mm 25°C	84.30	5		ΔHv cal/g 25°C	203.84	5	m to
t _e	954.4	5		30 mm	211.24	5	n °K
Density g/ml 20°C	0.7857	3		BP	183.46	5	o
d ₄ ^t 25	0.7803	3		t _e	180.93	5	m' to
d ₄ ^t 30				t _e (d, e)	180.79	5	n' °K
				ΔHv/T _e	20.51	5	o'
a	0.8073	5		d 5 to	213.08	5	Surface tension
b	-0.00107	5		e 109 to °C	0.3629	5	dynes/cm. 20°C
Ref. Index n _D 20°C	1.3436	3		d' to °C			30
25	1.3416	3		e' to °C			40
30				d c g/ml			29.61
"C"	0.5878	4		v c ml/g			28.00
MR (Obs.)	11.057	4		t c °C			26.45
MR (Calc.)	11.186	5		P c mm			
Dielectric				PV/RT 25°C	0.9934	5	Parachor [P] 20°C
A 5 to	7.07354	5		30 mm	1.0000	5	30
B 119 °C	1279.2	5		BP	0.9537	5	40
C	224.	5		t _e	0.9473	5	Sugd. 121.9
A* 5 to	1.10890	5		t _c			
B* 109 °C	1201.8	5		ΔHc kcal/m			
K				ΔHf			
c				ΔFf			
t _k to °C				Viscosity centistokes			
t _x to °C				η °C			
A' to °C				B ^v to °C			
B' to °C				A ^v to °C			
C' to °C				(B ^v) to °C			
A'*	to °C			(A ^v) to °C			
B'*	to °C			c _p liq. °K			
Ac to °C				c _p vap. °K			
Bc to °C				c _v vap.			
Cc to °C							
Cryos. A° const. B°							
t _e °C	88.97	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VII. ALKYL CYANIDES

No. 3

NAME	Ethyl cyanide			STRUCTURAL FORMULA $\text{CH}_3\text{CH}_2\text{CN}$		
	Propionitrile					
Mole % Pur.	Ref. 3	Molecular Formula $\text{C}_3\text{H}_5\text{N}$	Molecular Weight 55.078			
	Ref.			Ref.		Ref.
F.P. °C	-92.89	3	dt/dP °C/mm		f	to
F.P. 100%			25°C		g	°K
B.P. °C			BP	0.4417	5	
760 mm	97.35	3	t_e	0.0435	5	
100	42.00	5	30 mm	0.0351	5	
30	17.41	5	$\Delta\text{Hm cal/g}$	0.6171	5	
10	-1.32	5				
1	-32.38	5				
Pressure mm 25°C	44.63	5	$\Delta\text{Hv cal/g}$			
t_e	996.7	5	25°C	162.35	5	
Density g/ml 20°C	0.7818	3	30 mm	164.53	5	
t_4	0.7768	3	BP	142.21	5	
d_4^{25}			t_e	139.78	5	
			t_e (d, e)	139.64	5	
			$\Delta\text{Hv}/T_e$	20.28	5	
a	0.8018	5	d 10 to	169.39	5	Surface tension dynes/cm. 20°C
b	-0.03994	5	e 115 °C	0.2792	5	27.19
			d' to			30
			e' °C			40
Ref. Index						24.49
n_D 20°C	1.3655	3	d_c g/ml			Parachor [P]
25	1.3635	3	v_c ml/g			20°C
30			t_c °C			30
"C"	0.6264	4	P_c mm			40
MR (Obs.)	15.761	4	PV/RT			Sugd. 160.9
MR (Calc.)	15.804	5	25°C	0.9980	5	Exp. L. l. %/wt.
(nD-d/2)	0.9746	4	30 mm	1.0000	5	u.
Dielectric			BP	0.9513	5	Dispersion
A 17 to	7.05848	5	t_e	0.9434	5	Flash Point °C
B 137 °C	1327.9	5	t_c			Fire Point
C	221.	5	$\Delta\text{Hc kcal/m}$			M. Spec.
A* 17 to	1.20776	5	ΔHf			Ultra V.
B* 127 °C	1248.5	5	ΔFf			X-Ray Dif.
K			Viscosity centistokes			Infrared
t_k to			η °C			Solubility in +
t_x °C						Acetone
A' to						Carbon tet.
B' °C						Benzene
C'						Ether
A'* to						n-Heptane
B'* °C						Ethanol
Ac to						Water
Bc t_c °C						Water in
Cc						
Cryos. A°			c_p liq. °K			
consts. B°			c_p vap. °K			
t_e °C	106.57	5	c_v vap.			
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

NAME		n-Propyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂ CN		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₇ N	Molecular Weight	69.104		
		Ref.			Ref.		
F. P. °C	-111.9	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C	0.9536	5	g	
B. P. °C			BP	0.0459	5	h	
760 mm	117.9	3	t _e	0.0356	5	f'	to °K
100	59.5	5	30 mm	0.6507	5	g'	
30	33.5	5	ΔHm cal/g			h'	
10	13.8	5	ΔHv cal/g			m	to °K
1	-19.0	5	25°C	140.57	5	n	
Pressure mm 25°C	19.10	5	30 mm	138.52	5	o	
t _e	1051.6	5	BP	119.02	5	m'	to °K
Density g/ml 20°C	0.7913	3	t _e	116.49	5	n'	
d ₄ ^t 25	0.7869	3	t _e (d, e)	116.31	5	o'	
d ₄ ^t 30			ΔHv/T _e	19.98	5	Surface tension dynes/cm. 20°C	
a	0.8089	5	d 34 to	146.27	5	30	27.45
b	-0.03877	5	e 150 °C	0.2311	5	40	26.24
Ref. Index n _D 25	1.3840	3	d' to °C			40	25.07
n _D 30	1.3820	3	e' to °C			Parachor [P] 20°C	
"C"	0.6485	4	d _c g/ml			30	
MR (Obs.)	20.418	4	v _c ml/g			40	
MR (Calc.) (n _D -d/2)	20.422	5	t _c °C			Sugd.	199.9
Dielectric			P _c mm			Exp. L. l. %/wt. u.	
A 34 to	7.03957	5	PV/RT 25°C	1.0016	5	Dispersion	
B 160 °C	1390.7	5	30 mm	1.0000	5	Flash Point °C	
C	217.	5	BP	0.9482	5	Fire Point	
A* 34 to	1.27061	5	t _e	0.9383	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 150 °C	1309.0	5	t _c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			ΔHc kcal/m				
c			ΔHf				
t _x to °C			ΔFf				
t _x to °C			Viscosity centistokes °C				
A' to °C			η				
B' to °C			B ^v to °C				
C' to °C			A ^v to °C				
A ^{1*} to °C			(B ^v) to °C				
B ^{1*} to °C			(A ^v) to °C				
Ac to °C			c _p liq. °K				
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	129.64	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VII. ALKYL CYANIDES

No. 5

NAME		n-Butyl cyanide			STRUCTURAL FORMULA	
					CH ₃ (CH ₂) ₃ CN	
Mole % Pur.	Ref. 3	Molecular Formula C ₅ H ₉ N	Molecular Weight 83.130			
		Ref.			Ref.	
F. P. °C	-96.0	3	dt/dP °C/mm		f to	
F. P. 100%			25°C		g °K	
B. P. °C			BP	2.360	5	
760 mm	141.3	3	t _e	0.0488	5	
100	79.3	5	30 mm	0.0361	5	
30	51.9	5	ΔHm cal/g	0.6890	5	
10	30.9	5				
1	-3.7	5	ΔHv cal/g			
Pressure mm 25°C	7.07	5	25°C	127.79	5	
t _e	1113.6	5	30 mm	122.14	5	
Density g/ml 20°C	0.8008	3	BP	104.28	5	
d ^t 25	0.7963	3	t _e	101.55	5	
d ^t 30			t _e (d, e)	101.33	5	
			ΔHv/T _e	19.67	5	
a	0.8188	5	d 52 to	132.49	5	
b	-0.03898	5	e 175 °C	0.1997	5	
Ref. Index			d' to			
n _D 20°C	1.3971	3	e' °C			
25	1.3951	3	d _c g/ml			
30			v _c ml/g			
"C"	0.6614	4	t _c °C			
MR (Obs.)	25.004	4	P _c mm			
MR (Calc.) (nD-d/2)	25.040	5	PV/RT			
Dielectric			25°C	1.0029	5	
A 52 to	7.02103	5	30 mm	1.0000	5	
B 185 °C	1462.7	5	BP	0.9447	5	
C	212.	5	t _e	0.9326	5	
A* 52 to	1.31449	5	t _c			
B* 175 °C	1378.4	5	ΔHc kcal/m			
K			ΔHf			
c			ΔFf			
t _k to			Viscosity			
t _x °C			centistokes			
A' to			η °C			
B' °C						
C'			B ^v to			
A'* to			A ^v °C			
B'* °C			(B ^v) to			
Ac to			(A ^v) °C			
Bc t _c °C			c _p liq. °K			
Cc t _c °C			c _p vap. °K			
Cryos. A°			c _v vap.			
const. B°						
t _e °C	156.05	5				
† grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: MCA						
PURIFICATION: MCA						
LITERATURE REFERENCES: 3 MCA						

NAME		n-Pentyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₄ CN		
Mole % Pur.	Ref. 3	Molecular Formula C ₆ H ₁₁ N	Molecular Weight 97.156				
		Ref.			Ref.		
F.P. °C	-80.3	3	dt/dP °C/mm			f	to
F.P. 100%			25°C	5.772	5	g	°K
B.P. °C			BP	0.0514	5	h	
760 mm	163.6	3	t _e	0.0366	5	f'	to
100	98.3	5	30 mm	0.7257	5	g'	°K
30	69.3	5	ΔHm cal/g			h'	
10	47.3	5	ΔHv cal/g			m	to
1	10.9	5	25°C	118.47	5	n	°K
Pressure mm 25°C	2.66	5	30 mm	110.15	5	o	
t _e	1172.3	5	BP	93.55	5		
Density g/ml 20°C	0.8052	3	t _e	90.67	5	m'	to
t	0.8011	3	t _e (d, e)	90.42	5	n'	°K
d ₄			ΔHv/T _e	19.38	5	o'	
a	0.8216	5	d 69 to	122.36	5	Surface tension dynes/cm. 20°C	
b	-0.03819	5	e 201 °C	0.1761	5	30	28.14
Ref. Index n _D			d' to			40	27.01
20°C	1.4068	3	e' °C				25.91
25	1.4048	3	d _c g/ml			Parachor [P] 20°C	
30			v _c ml/g			30	
"C"	0.6730	4	t _c °C			40	
MR (Obs.)	29.690	4	P _c mm			Sugd.	277.9
MR (Calc.)	29.658	5	PV/RT			Exp. L. l. %/wt. u.	
Dielectric			25°C	1.0016	5	Dispersion	
A 69 to	7.00859	5	30 mm	1.0000	5	Flash Point °C	
B 211 °C	1533.9	5	BP	0.9414	5	Fire Point	
C	208.	5	t _e	0.9270	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 69 to	1.35369	5	ΔHc kcal/m			Solubility in +	
B* 201 °C	1447.1	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
c			Viscosity centistokes			Benzene	
t _k to			η °C			Ether	
t _x °C						n-Heptane	
A' to			B ^v to			Ethanol	
B' °C			A ^v °C			Water	
C' °C			(B ^v) to			Water in	
A* to			(A ^v) °C				
B* °C			c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C	181.35	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VII. ALKYL CYANIDES

No. 7

NAME		n-Hexyl cyanide		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₅ CN	
Mole % Pur.	Ref.	Molecular Formula	C ₇ H ₁₃ N	Molecular Weight	111.182
F. P. °C	-62.6	3	dt/dP °C/mm		
F. P. 100%			25°C	13.82	5
B. P. °C			BP	0.0540	5
760 mm	184.6	3	t _e	0.0371	5
100	116.1	5	30 mm	0.7601	5
30	85.8	5	ΔHm cal/g		
10	62.7	5	ΔHv cal/g		
1	24.6	5	25°C	111.35	5
Pressure mm 25°C	1.03	5	30 mm	100.94	5
t _e	1227.1	5	BP	85.26	5
Density g/ml 20°C	0.8099	3	t _e	82.25	5
d ₄ ²⁵	0.8056	3	t _e (d, e)	81.98	5
d ₄ ³⁰			ΔHv/T _e	19.11	5
a	0.8271	5	d 86 to	114.55	5
b	-0.03860	5	e 225 °C	0.1587	5
Ref. Index			d' to		
n _D 20°C	1.4144	3	e' °C		
25	1.4124	3	d _c g/ml		
30			v _c ml/g		
"C"	0.6809	4	t _c °C		
MR (Obs.)	34.333	4	P _c mm		
MR (Calc.) (n _D -d/2)	34.276	5	PV/RT		
Dielectric			25°C	0.9983	5
A 86 to	6.99543	5	30 mm	1.0000	5
B 235 °C	1598.9	5	BP	0.9382	5
C	204.	5	t _e	0.9218	5
A* 86 to	1.38514	5	t _e		
B* 225 °C	1510.2	5	t _c		
K			ΔHc kcal/m		
c			ΔHf		
t _k to			ΔFf		
t _x °C			Viscosity centistokes		
A' to			η °C		
B' °C			B ^v to		
C' °C			A ^v °C		
A'* to			(B ^v) to		
B'* °C			(A ^v) °C		
Ac to			c _p liq. °K		
Bc t _c °C			c _p vap. °K		
Cc °C			c _v vap.		
Cryos. A° const. B°					
t _e °C	205.30	5			
+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		n-Heptyl cyanide			STRUCTURAL FORMULA							
Mole % Pur.		Ref. 3	Molecular Formula $C_8H_{15}N$	Molecular Weight 125.208	$CH_3(CH_2)_6CN$							
F.P. °C	-45.6	3	dt/dP °C/mm		5	f			to			
F.P. 100%			25°C	33.57	5	g			°K			
B.P. °C	205.2	3	BP	0.0564	5	h						
760 mm	133.6	5	t_e	0.0375	5	f'			to			
100	101.9	5	30 mm	0.7938	5	g'			°K			
30	77.8	5	ΔH_m cal/g			h'						
10	38.0	5	ΔH_v cal/g			m			to			
1			25°C	105.94	5	n			°K			
Pressure mm 25°C	0.39	5	30 mm	93.73	5	o						
t_e	1280.4	5	BP	78.82	5	m'			to			
Density g/ml 20°C	0.8136	3	t_e	75.75	5	n'			°K			
25	0.8095	3	t_e (d, e)	75.40	5	o'						
d_4^{25}			$\Delta H_v/T_e$	18.89	5	Surface tension dynes/cm. 20°C			28.10	5		
a	0.8120	5	d 102 to	108.43	5	30			27.96	5		
b	-0.03100	5	e 249 to	0.1443	5	40			27.82	5		
Ref. Index n_D	20°C	3	d'			Parachor [P]						
25	1.4203	3	e'			20°C						
30	1.4183	3	d	g/ml		30						
"C"	0.6899	4	v	ml/g		40						
MR (Obs.)	39.142	4	c	°C		Sugd.			355.9	5		
MR (Calc.) (nD-d/2)	38.894	5	P	mm		Exp. L. l. %/wt.						
Dielectric			PV/RT			u.						
A 102 to	6.98285	5	25°C	0.9933	5	Dispersion						
B 259 °C	1662.14	5	30 mm	1.0000	5	Flash Point °C						
C	200.	5	BP	0.9351	5	Fire Point						
A* 102 to	1.41135	5	t_e	0.9167	5	M Spec.						
B* 249 °C	1571.53	5	t_c			Ultra V.						
K			ΔH_c kcal/m			X-Ray Dif.						
t_x to			ΔH_f			Infrared						
t_x °C			ΔF_f			Solubility in +						
A' to			Viscosity centistokes			Acetone						
B' to			η °C			Carbon tet.						
C' °C			B ^v to			Benzene						
A'*	to		A ^v °C			Ether						
B'*	°C		(B ^v) to			n-Heptane						
Ac to			(A ^v) °C			Ethanol						
Bc °C			c _p liq. °K			Water						
Cc °C			c _p vap. °K			Water in						
Cryos. A°			c _v vap.									
const. B°												
t_e °C	228.88	5										
+ grams/100 grams solvent												
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula												
SOURCE: MCA												
PURIFICATION: MCA												
LITERATURE REFERENCES: 3 MCA												

TABLE VII. ALKYL CYANIDES

No. 9

NAME		n-Octyl cyanide			STRUCTURAL FORMULA		
		Nonanenitrile			CH ₃ (CH ₂) ₇ CN		
Mole % Pur.	Ref. 3	Molecular Formula C ₉ H ₁₇ N	Molecular Weight 139.234				
		Ref.			Ref.		
F. P. °C	-34.2	3	dt/dP °C/mm		f	to	
F. P. 100%			25°C	78.81	g	°K	
B. P. °C			BP	0.0588	h		
760 mm	224.4	3	t _e	0.0380	f'	to	
100	149.9	5	30 mm	0.8254	g'	°K	
30	116.9	5	ΔHm cal/g		h'		
10	91.9	5	ΔHv cal/g		m	to	
1	50.5	5	25°C	101.30	n	°K	
Pressure mm 25°C	0.16	5	30 mm	87.69	o		
t _e	1329.7	5	BP	73.34			
Density g/ml 20°C	0.8178	3	t _e	70.13	m'	to	
t 25	0.8137	3	t _e (d, e)	69.80	n'	°K	
d ⁴ 30			ΔHv/T _e	18.63	o'		
a	0.8342	5	d 117 to	103.29	Surface tension dynes/cm. 20°C		
b	-0.03820	5	e 271 °C	0.1334	γ	30	28.94
Ref. Index			e' to °C			40	27.80
n _D 20°C	1.4255	3			Parachor [P]		
25	1.4235	3	d _c g/ml		20°C		
30			v _c ml/g		30		
"C"	0.6913	4	t _c °C		40		
MR (Obs.)	43.579	4	P _c mm		Sugd.	394.9	5
MR (Calc.)	43.512	5	PV/RT		Exp. L. l. %/wt. u.		
(nD-d/2)			25°C	0.9874	Dispersion		
Dielectric			30 mm	1.0000	Flash Point °C		
A 117 to	6.97440	5	BP	0.9322	Fire Point		
B 281 °C	1723.0	5	t _e	0.9119	M. Spec.		
C	197.	5	t _c		Ultra V.		
A* 117 to	1.43758	5	ΔHc kcal/m		X-Ray Dif.		
B* 271 °C	1630.7	5	ΔHf		Infrared		
K			ΔFf		Solubility in ⁺		
t _k to °C			Viscosity centistokes		Acetone		
t _x to °C			η		Carbon tet.		
A' to °C					Benzene		
B' to °C			B ^v to °C		Ether		
C' to °C			A ^v to °C		n-Heptane		
A'* to °C			(B ^v) to °C		Ethanol		
B'* to °C			(A ^v) °C		Water		
Ac to °C			c _p liq. °K		Water in		
Bc to °C			c _p vap. °K				
Cc to °C			c _v vap. °K				
Cryos. A°							
const. B°							
t _e °C	250.96	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		n-Nonyl cyanide			STRUCTURAL FORMULA		
Mole % Pur.		Ref. 3	Molecular Formula $C_{10}H_{19}N$	Molecular Weight 153.260	$CH_3(CH_2)_8CN$		
F.P. °C	-14.5	3	dt/dP °C/mm		5	f	to °K
F.P. 100%			25°C	185.4	5	g	
B.P. °C	243.	3	BP	0.0610	5	h	
760 mm	166.	5	t_e	0.0384	5	f'	to °K
100	131.	5	t_e (d, e)		5	g'	
30	106.	5	ΔH_m cal/g		5	h'	
10	63.	5	ΔH_v cal/g			m	to °K
1			25°C	97.53	5	n	
Pressure mm 25°C	0.06	5	30 mm	82.67	5	o	
t_e	1377.1	5	BP	68.84	5		
Density g/ml 20°C	0.8199	3	t_e	65.55	5	m'	to °K
25	0.8160	3	t_e (d, e)	65.19	5	n'	
30			$\Delta H_v/T_e$	18.42	5	o'	
a	0.8355	5	d 131 to °C	98.97	5	Surface tension dynes/cm. 20°C	
b	-0.03780	5	e 292 to °C	0.1240	5	30	29.03
Ref. Index n_D	1.4296	3	e' to °C			40	27.94
25	1.4276	3					26.89
30			d _c g/ml			Parachor [P] 20°C	
"C"	0.6958	4	v _c ml/g			30	
MR (Obs.)	48.248	4	t_c °C			40	
MR (Calc.)	48.130	5	P _c mm			Sugd.	433.9
Dielectric			PV/RT			Exp. L.l. %/wt. u.	
A 131 to °C	6.96575	5	25°C	0.9805	5	Dispersion	
B 302 to °C	1781.0	5	30 mm	1.0000	5	Flash Point °C	
C	193.	5	BP	0.9294	5	Fire Point	
A* 131 to °C	1.46020	5	t_e	0.9073	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 292 to °C	1687.3	5	t_c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
K			ΔH_c kcal/m				
t_x to °C			ΔH_f				
t_x to °C			ΔF_f				
A' to °C			Viscosity centistokes η °C				
B' to °C							
C' to °C			B ^v to °C				
A'* to °C			A ^v to °C				
B'* to °C			(B ^v) to °C				
A _c to °C			(A ^v) to °C				
B _c to °C			c _p liq. °K				
C _c to °C			c _p vap. °K				
Cryos. A ^o const. B ^o			c _v vap.				
t_e °C	272.41	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

TABLE VII. ALKYL CYANIDES

No. 11

NAME		n-Decyl cyanide				STRUCTURAL FORMULA				
						CH ₃ (CH ₂) ₉ CN				
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₁ H ₂₁ N	Molecular Weight	167.286					
		Ref.			Ref.			Ref.		
F.P. °C	-5.8	3	dt/dP			f		to		
F.P. 100%			°C/mm			g		°K		
B.P. °C			25°C	414.0	5	h				
760 mm	260.	3	BP	0.0630	5	f'		to		
100	180.	5	t _e	0.0387	5	g'		°K		
30	145.	5	30 mm	0.8839	5	h'				
10	118.	5	ΔHm cal/g			m		to		
1	74.	5	ΔHv cal/g			n		°K		
Pressure mm 25°C	0.03	5	25°C	94.01	5	o				
t _e	1420.1	5	30 mm	78.23	5	m'		to		
Density g/ml 20°C	0.8220	3	BP	64.90	5	n'		°K		
25	0.8181	3	t _e	61.56	5	o'				
d ₄ 30			t _e (d, e)	61.19	5	Surface tension dynes/cm. 20°C				
a	0.8376	5	ΔHv/T _e	18.22	5	30	29.16	5		
b	-0.03780	5	d 145 to	94.99	5	40	28.06	5		
Ref. Index			e 312 to	0.1157	5		27.00	5		
n _D 25	1.4331	3	d'			Parachor [P]				
30	1.4311	3	e'			20°C				
"C"	0.6993	4	d _c g/ml			30				
MR (Obs.)	52.903	4	v _c ml/g			40				
MR (Calc.)	52.748	5	t _c °C			Sugd.	472.9	5		
(nD-d/2)			P _c mm			Exp. L.l. %/wt.				
Dielectric			PV/RT			u.				
A 145 to	6.96026	5	25°C	0.9736	5	Dispersion				
B 322 °C	1835.8	5	30 mm	1.0000	5	Flash Point °C				
C	190.	5	BP	0.9268	5	Fire Point				
A* 145 to	1.48357	5	t _e	0.9030	5	M. Spec.				
B* 312 °C	1740.6	5	t _c			Ultra V.				
K			ΔHc kcal/m			X-Ray Dif.				
t _k to			ΔHf			Infrared				
t _k °C			ΔFf			Solubility in ⁺				
A' to			Viscosity centistokes			Acetone				
B' °C			η			Carbon tet.				
C' °C						Benzene				
A'* to			B ^v to			Ether				
B'* °C			A ^v °C			n-Heptane				
Ac to			(B ^v) to			Ethanol				
Bc °C			(A ^v) °C			Water				
Cc t _c °C			c _p liq. °K			Water in				
Cryos. A°			c _p vap. °K							
const. B°			c _v vap.							
t _e °C	292.08	5								
* grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

NAME		n-Undecyl cyanide				STRUCTURAL FORMULA				
						$\text{CH}_3(\text{CH}_2)_{10}\text{CN}$				
Mole % Pur.	Ref. 3	Molecular Formula	$\text{C}_{12}\text{H}_{23}\text{N}$		Molecular Weight	186.312				
		Ref.				Ref.				Ref.
F.P. °C	4.0	3	dt/dP °C/mm				f	to		
F.P. 100%			25°C			957.2	g	°K		
B.P. °C			BP			0.0651	h			
760 mm	277.	3	t_e			0.0391	f'	to		
100	195.	5	30 mm			0.9115	g'	°K		
30	158.	5	ΔH_m cal/g				h'			
10	131.	5	ΔH_v cal/g				m	to		
1	85.	5	25°C			88.89	n	°K		
Pressure mm 25°C	0.01	5	30 mm			72.53	o			
t_e	1462.8	5	BP			59.89				
Density g/ml 20°C	0.8240	3	t_e (d, e)			56.57	m'	to		
d ₄ ^t 25	0.8202	3	$\Delta H_v/T_e$			56.19	n'	°K		
d ₄ ³⁰						18.02	o'			
a	0.8392	5	d	158	to	89.34	Surface tension dynes/cm. 20°C			
b	-0.03760	5	e	332	°C	0.1063	30 26.27 5			
Ref. Index n_D 20°C	1.4361	3	d'	to			40 25.32 5			
25	1.4341	3	e'	°C			24.39 5			
30			d _c	g/ml			Parachor [P] 20°C			
"C"	0.7022	4	v _c	ml/g			30			
MR (Obs.)	59.131	4	t _c	°C			40			
MR (Calc.) (nD-d/2)	57.366	5	P _c	mm			Sugd. 511.9 5			
Dielectric			PV/RT 25°C			0.9655	Exp. L, l. %/wt. u.			
A 158 to	6.95053	5	30 mm			1.0000	Dispersion			
B 132 °C	1886.3	5	BP			0.9243	Flash Point °C			
C	187.	5	t_e			0.8988	Fire Point			
A* 158 to	1.51220	5	ΔH_c kcal/m				M Spec. Ultra V.			
B* 132 °C	1790.2	5	ΔH_f				X-Ray Dif.			
K			ΔF_f				Infrared			
c			Viscosity centistokes °C				Solubility in +			
t _x to			η				Acetone			
t _x °C							Carbon tet.			
A' to							Benzene			
B' °C							Ether			
C'							n-Heptane			
A'* to							Ethanol			
B'* °C							Water			
Ac to							Water in			
Bc °C										
Cc t _c °C										
Cryos. A° const. B°										
t _e °C	311.82	5								
+ grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: MCA										
PURIFICATION: MCA										
LITERATURE REFERENCES: 3 MCA										

TABLE VII. ALKYL CYANIDES

No. 13

NAME		n-Dodecyl cyanide		STRUCTURAL FORMULA	
				CH ₃ (CH ₂) ₁₁ CN	
Mole % Pur.	Ref. 3	Molecular Formula C ₁₃ H ₂₅ N	Molecular Weight 195.338		
	Ref.			Ref.	
F.P. °C	9.7	3	dt/dP °C/mm		f to
F.P. 100%			25°C		g °K
B.P. °C			BP	2146.	h
760 mm	293.	3	t _e	0.0670	f' to
100	208.	5	t _e (d, e)	0.0394	g' °K
30	171.	5	30 mm	0.9377	h'
10	142.	5	ΔHm cal/g		m to
1	95.	5	ΔHv cal/g		n °K
Pressure mm 25°C			25°C	88.82	o
t _e	1502.6	5	30 mm	71.21	m' to
Density g/ml 20°C	0.8257	3	BP	58.60	n' °K
25	0.8220	3	t _e	55.15	o'
d ₄ ²⁵			t _e (d, e)	54.74	
30			ΔHv/T _e	17.85	
a	0.8405	5	d 171 to	88.80	Surface tension dynes/cm. 20°C
b	-0.03740	5	e 350 °C	0.1031	30
Ref. Index n _D 20°C	1.4378	3	d' to		40
25	1.4367	3	e' °C		29.41
30			d _c g/ml		28.37
"C"	0.7033	4	v _c ml/g		27.35
MR (Obs.)	62.078	4	t _c °C		
MR (Calc.) (n _D -d/2)	61.984	5	P _c mm		Parachor [P] 20°C
Dielectric			PV/RT 25°C	0.9576	30
A 171 to	6.94454	5	30 mm	1.0000	40
B 360 °C	1936.4	5	BP	0.9219	Sugd. 550.9
C	184.	5	t _e	0.8948	Exp. l. l. %/wt. u.
A* 171 to	1.51899	5	t _e		Dispersion
B* 350 °C	1839.3	5	t _c		Flash Point °C
K			ΔHc kcal/m		Fire Point
c			ΔHf		M. Spec. Ultra V. X-Ray Dif. Infrared
t _x to			ΔFf		Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
t _x °C			Viscosity centistokes η °C		
A' to			B ^v to		
B' °C			A ^v °C		
C' °C			(B ^v) to		
A'* to			(A ^v) °C		
B'* °C			c _p liq. °K		
Ac to			c _p vap. °K		
Bc t _c °C			c _v vap.		
Cc t _c °C					
Cryos. A* consts. B*					
t _e °C	330.44	5			
† grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: MCA					
PURIFICATION: MCA					
LITERATURE REFERENCES: 3 MCA					

NAME		n-Tridecyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₂ CN		
Mole % Pur.	Ref. 3	Molecular Formula	C ₁₄ H ₂₇ N	Molecular Weight	209.364		
F.P. °C	19.	Ref.					Ref.
F.P. 100%							
B.P. °C							
760 mm	308.	3		4702.	5	f	to
100	221.	5		0.0688	5	g	°K
30	182.	5		0.0397	5	h	
10	153.	5		0.9622	5	f'	to
1	105.	5				g'	°K
						h'	
Pressure mm						m	to
25°C						n	°K
t _e	1539.7	5				o	
Density g/ml						m'	to
20°C	0.8274	3				n'	°K
d ₄ ^t	0.8237	3				o'	
25							
30							
"a"	0.8422	5	d	182	to	Surface tension	
"b"	-0.03740	5	e	368	°C	dynes/cm.	20°C
Ref. Index n _D			d'			30	29.54
20°C	1.4411	3	e'			40	28.49
25	1.4391	3					27.48
30							
"C"	0.7069	4	d	g/ml		Parachor [P]	
MR (Obs.)	66.833	4	v	ml/g		20°C	
MR (Calc.)	66.602	5	t	°C		30	
(nD-d/2)			c	°C		40	
Dielectric			P	mm		Sugd.	589.9
A	6.93759	5	PV/RT			Exp. L.l. %/wt.	
B	1981.7	5	25°C	0.9495	5	u.	
C	181.	5	30 mm	1.0000	5	Dispersion	
A*	1.53530	5	BP	0.9196	5	Flash Point °C	
B*	1883.9	5	t _e	0.8910	5	Fire Point	
K			t _c			M Spec.	
c			ΔHc kcal/m			Ultra V.	
t _k			ΔHf			X-Ray Dif.	
t _x			ΔFf			Infrared	
A'			Viscosity			Solubility in +	
B'			centistokes			Acetone	
C'			η			Carbon tet.	
A''						Benzene	
B''			B ^v			Ether	
C''			A ^v			n-Heptane	
A'''			(B ^v)			Ethanol	
B'''			(A ^v)			Water	
C'''			c _p liq.			Water in	
A ^c							
B ^c			c _p vap.				
C ^c							
Cryos. A°			c _v vap.				
const. B°							
t _e °C	347.94	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: MCA							
PURIFICATION: MCA							
LITERATURE REFERENCES: 3 MCA							

NAME		n-Tetradecyl cyanide				STRUCTURAL FORMULA			
						$\text{CH}_3(\text{CH}_2)_{13}\text{CN}$			
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{15}\text{H}_{29}\text{N}$	Molecular Weight	223.390				
		Ref.			Ref.	Ref.			
F. P. °C	23.	3	dt/dP			f	to		
F. P. 100%			°C/mm			g	°K		
B. P. °C			25°C			h			
760 mm	322.	3	BP		0.0705	5			
100	233.	5	t_e		0.0400	5	to		
30	193.	5	30 mm		0.9852	5	°K		
10	164.	5							
1	114.	5	ΔH_m cal/g			h'			
Pressure mm 25°C			ΔH_v cal/g			m	to		
t_e	1574.1	5	25°C			n	°K		
Density g/ml 20°C	0.8289	3	30 mm		65.49	5			
d_t	0.8252	3	BP		53.51	5			
d_4		3	t_e (d, e)		50.01	5	to		
		3	$\Delta H_v/T_e$		49.58	5	°K		
		3			17.52	5			
a	0.8437	5	d 193 to		83.48	5	Surface tension		
b	-0.03740	5	e 384 °C		0.0931	5	dynes/cm. 20°C		29.65
Ref. Index			d'				30		28.61
n_D 20°C	1.4431	3	e'				40		27.59
25	1.4411	3							
30		3	d _c g/ml				Parachor [P]		
"C"	0.7086	4	v _c ml/g				20°C		
MR (Obs.)	71.462	4	t _c °C				30		
MR (Calc.)	71.220	5	P _c mm				40		
(nD-d/2)			PV/RT				Sugd.		628.9
Dielectric			25°C				Exp. L. l. %/wt.		
A 193 to	6.93397	5	30 mm		1.0000	5	u.		
B 394 °C	2026.6	5	BP		0.9175	5	Dispersion		
C	178.	5	t_e		0.8875	5	Flash Point °C		
A* 193 to	1.55352	5	t_c				Fire Point		
B* 384 °C	1927.9	5	ΔH_c kcal/m				M. Spec.		
K			ΔH_f				Ultra V.		
t_k to			ΔF_f				X-Ray Dif.		
t_x °C			Viscosity				Infrared		
A' to			centistokes				Solubility in ⁺		
B' °C			η				Acetone		
C' °C							Carbon tet.		
A** to			B ^v to				Benzene		
B** °C			A ^v °C				Ether		
Acl to			(B ^v) to				n-Heptane		
Bc t _c °C			(A ^v) °C				Ethanol		
Cc °C			c liq. °K				Water		
Cryos. A°			c _p vap. °K				Water in		
const. B°									
t_e °C	364.31	5	c _v vap.						
+ grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: MCA									
PURIFICATION: MCA									
LITERATURE REFERENCES: 3 MCA									

NAME		n-Pentadecyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₄ CN		
Mole % Pur.	Ref.	Molecular Formula	C ₁₆ H ₃₁ N	Molecular Weight	237.416		
		Ref.			Ref.		
F.P. °C	30.	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C			h	
760 mm	336.	3	BP	0.0722	5	f'	to
100	245.	5	t _e	0.0403	5	g'	°K
30	204.	5	30 mm	1.0078	5	h'	
10	174.	5	ΔHm cal/g			m	to
1	123.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1608.2	5	30 mm	63.10	5		
Density g/ml 20°C			BP	51.37	5	m'	to
d ₄ ^t 25	0.8303 ^a	3	t _e (d, e)	47.83	5	n'	°K
d ₄ ^t 30	0.8266 ^a	3	ΔHv/T _e	17.37	5	o'	
a	0.8451	5	d 204 to	81.32	5	Surface tension dynes/cm. 20°C	
b	-0.03740	5	e 401 °C	0.0891	5	30	29.77
Ref. Index n _D 25	1.4450 ^a	3	d' to			40	28.72
30	1.4430 ^a	3	e' °C				27.70
"C"	0.7102	4	d _c g/ml			Parachor [P] 20°C	
MR (Obs.)	76.103	4	v _c ml/g			30	
MR (Calc.) (nD-d/2)	75.838	5	t _c °C			40	
Dielectric			P _c mm			Sugd.	667.9
A 204 to	6.92639	5	PV/RT 25°C			Exp. L.l. %/wt. u.	
B 411 °C	2067.3	5	30 mm	1.0000	5	Dispersion	
C	175.	5	BP	0.9154	5	Flash Point °C	
A* 204 to	1.56656	5	t _e	0.8840	5	Fire Point	
B* 401 °C	1968.1	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
K			ΔHc kcal/m			Solubility in +	
c			ΔHf			Acetone	
t _k to			ΔFf			Carbon tet.	
t _x °C			Viscosity centistokes			Benzene	
A' to			η °C			Ether	
B' °C			B ^v to			n-Heptane	
C' °C			A ^v °C			Ethanol	
A'* to °C			(B ^v) to			Water	
B'* to °C			(A ^v) °C			Water in	
Ac to			c _p liq. °K				
Bc t _c °C			c _p vap. °K				
Cc °C			c _v vap.				
Cryos. A' consts. B'							
t _e °C	380.72	5					

^a For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VII. ALKYL CYANIDES

No. 17

NAME		n-Hexadecyl cyanide				STRUCTURAL FORMULA				
						CH ₃ (CH ₂) ₁₅ CN				
Mole % Pur.	Ref.	Molecular Formula	C ₁₇ H ₃₃ N	Molecular Weight	251.442					
		Ref.			Ref.					
F. P. °C	34.	3	dt/dP			f		to		
F. P. 100%			°C/mm			g		°K		
B. P. °C			25°C			h				
760 mm	349.	3	BP	0.0737	5	f'		to		
100	256.	5	t _e	0.0406	5	g'		°K		
30	215.	5	30 mm	1.0296	5	h'				
10	183.	5	ΔHm cal/g			m		to		
1	132.	5	ΔHv cal/g			n		°K		
Pressure mm 25°C			25°C			o				
t _e	1639.8	5	30 mm	60.83	5	m'		to		
Density g/ml 20°C			BP	49.41	5	n'		°K		
t	0.8315 ^a	3	t _e (d, e)	45.86	5	o'				
d ₄	0.8279 ^a	3	ΔHv/T _e	45.41	5	Surface tension dynes/cm. 20°C				
30				17.23	5	30	29.86	5		
a	0.8459	5	d 215 to	79.06	5	40	28.84	5		
b	-0.03720	5	e 416 °C	0.0850	5		27.85	5		
Ref. Index			d' to			Parachor [P]				
n _D 20°C	1.4467 ^a	3	e' °C			20°C				
25	1.4447 ^a	3	d _c g/ml			30				
30			v _c ml/g			40				
"C"	0.7118	4	t _c °C			Sugd.	706.9	5		
MR (Obs.)	80.749	4	P _c mm			Exp. L. l. %/wt.				
MR (Calc.)	80.456	5	PV/RT			u.				
(n _D -d/2)			25°C			Dispersion				
Dielectric			30 mm	1.0000	5	Flash Point °C				
A 215 to	6.92601	5	BP	0.9134	5	Fire Point				
B 426 °C	2111.6	5	t _e	0.8808	5	M. Spec.				
C	173.	5	t _c			Ultra V.				
A* 215 to	1.58549	5	ΔHc kcal/m			X-Ray Dif.				
B* 416 °C	2011.6	5	ΔHf			Infrared				
K			ΔFf			Solubility in ⁺				
t _k to			Viscosity centistokes			Acetone				
t _x °C			η °C			Carbon tet.				
A' to			B ^v to			Benzene				
B' °C			A ^v °C			Ether				
A'* to			(B ^v) to			n-Heptane				
B'* °C			(A ^v) °C			Ethanol				
Ac to			c _p liq. °K			Water				
Bc t _c °C			c _p vap. °K			Water in				
Cc °C			c _v vap.							
Cryos. A°										
consts. B°										
t _e °C	395.97	5								

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		n-Heptadecyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₆ CN		
Mole % Pur.	Ref.	Molecular Formula	C ₁₈ H ₃₆ N	Molecular Weight	265.468		
F.P. °C	41.						
F.P. 100%							
B.P. °C							
760 mm	362.			0.0753	5		
100	267.			0.0404	5		
30	225.						
10	193.			1.0503	5		
1	140.						
Pressure mm 25°C							
t _e	1671.0						
Density g/ml 20°C	0.8325 ^a						
d ₄ ²⁵	0.8289 ^a						
d ₄ ³⁰							
"a"	0.8469			77.27	5		
"b"	-0.03720			0.0819	5		
Ref. Index n _D 20°C	1.4481 ^a						
25	1.4461 ^a						
30							
"C"	0.7130						
MR (Obs.)	85.382						
MR (Calc.) (nD-d/2)	85.074						
Dielectric							
A 225 to	6.91773						
B 441 °C	2147.6						
C	170.						
A* 225 to	1.59586						
B* 431 °C	2047.4						
K							
c							
t _x to							
t _x °C							
A' to							
B' °C							
C'							
A'*	to						
B'*	°C						
Ac to							
Bc t _c °C							
Cc							
Cryos. A' consts. B'							
t _e °C	411.27						
dt/dP °C/mm 25°C							
BP							
t _e							
30 mm							
ΔHm cal/g							
ΔHv cal/g 25°C							
30 mm				58.87	5		
BP				47.63	5		
t _e				44.05	5		
t _e (d, e)				43.60	5		
ΔHv/T _e				17.08	5		
d 225 to							
e 431 °C							
d' to							
e' °C							
d _c g/ml							
v _c ml/g							
t _c °C							
P mm							
P _c							
PV/RT 25°C							
30 mm							
BP							
t _e							
t _c							
ΔHc kcal/m							
ΔHf							
ΔFf							
Viscosity centistokes γ °C							
B ^v to							
A ^v °C							
(B ^v) to							
(A ^v) °C							
c _p liq. °K							
c _p vap. °K							
c _v vap.							
f to							
g °K							
h							
f' to							
g' °K							
h'							
m to							
n °K							
o							
m' to							
n' °K							
o'							
Surface tension dynes/cm. 20°C							
30						29.94	5
40						28.91	5
40						27.92	5
Parachor [P] 20°C							
30							
40							
Sugd.						745.9	5
Exp. L.l./wt. u.							
Dispersion							
Flash Point °C							
Fire Point							
M Spec. Ultra V. X-Ray Dif. Infrared							
Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in							

^a For undercooled liquid below normal F.P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VII. ALKYL CYANIDES

No. 19

NAME		n-Octadecyl cyanide		STRUCTURAL FORMULA	
		Nonadecanenitrile		CH ₃ (CH ₂) ₁₆ CN	
Mole % Pur.	Ref. 3	Molecular Formula C ₁₉ H ₃₇ N	Molecular Weight 279.494		
F. P. °C	43.	3	dt/dP °C/mm		
F. P. 100%			25°C		f to
B. P. °C			BP	0.0767	5
760 mm	374.	3	t _e	0.0411	5
100	277.	5	30 mm	1.0703	5
30	234.	5	ΔHm cal/g		
10	202.	5	ΔHv cal/g		
1	148.	5	25°C		
Pressure mm 25°C			30 mm	56.96	5
t _e	1699.8	5	BP	45.97	5
Density g/ml 20°C	0.8336 ^a	3	t _e	42.38	5
d ₄ ²⁵	0.8300 ^a	3	t _e (d, e)	41.93	5
d ₄ ³⁰			ΔHv/T _e	16.96	5
a	0.8480	5	d 234 to	75.36	5
b	-0.03720	5	e 445 °C	0.0786	5
Ref. Index n _D 20°C	1.4495 ^a	3	d' to		
25	1.4475 ^a	3	e' to °C		
30			d _c g/ml		
"C"	0.7142	4	v _c ml/g		
MR (Obs.)	90.018	4	t _c °C		
MR (Calc.) (nD-d/2)	89.692	5	P _c mm		
Dielectric			PV/RT 25°C		
A 234 to	6.91636	5	30 mm	1.0000	5
B 455 °C	2187.3	5	BP	0.9097	5
C	168.	5	t _e	0.8746	5
A* 234 to	1.61207	5	t _c		
B* 445 °C	2086.5	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to			Viscosity centistokes		
t _x to °C			η °C		
A' to			B ^v to °C		
B' to °C			A ^v to °C		
C'			(B ^v) to °C		
A'* to			(A ^v) °C		
B'* °C			c liq. °K		
Ac to			p		
Bc t _c °C			c vap. °K		
Cc t _c °C			p		
Cryos. A° const. B°			c _v vap.		
t _e °C	425.40	5			

^a For undercooled liquid below normal F. P.⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

NAME		n-Nonadecyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₈ CN		
Mole % Pur.	Ref.	Molecular Formula	C ₂₀ H ₃₉ N	Molecular Weight	293.520		
		Ref.			Ref.		
F. P. °C	50.	3	dt/dP °C/mm			f	to
F. P. 100%			25°C			g	°K
B. P. °C			BP	0.0782	5	h	
760 mm	386.	3	t _e	0.0414	5	f'	to
100	287.	5	t _e (d, e)		5	g'	°K
30	244.	5	30 mm	1.0902	5	h'	
10	210.	5	ΔHm cal/g			m	to
1	156.	5	ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	1728.3	5	30 mm	55.24	5	m'	to
Density g/ml 20°C			BP	44.47	5	n'	°K
d ₄ ^t 25	0.8344 ^a	3	t _e	40.87	5	o'	
d ₄ ^t 30	0.8309 ^a	3	ΔHv/T _e	16.83	5	Surface tension dynes/cm. 20°C	
a	0.8484	5	d 244 to	73.64	5	30	30.09
b	-0.03700	5	e 460 °C	0.0756	5	40	29.09
Ref. Index n _D 20°C			d' °C			40	28.12
25	1.4507 ^a	3	e' °C			Parachor [P]	
30	1.4487 ^a	3	d c g/ml			20°C	
"C"	0.7153	4	v c ml/g			30	
MR (Obs.)	94.662	4	t c °C			40	
MR (Calc.)	94.310	5	P c mm			Sugd.	823.9
(n _D -d/2)			PV/RT 25°C			Exp. L. l. %/wt. u.	
Dielectric			30 mm	1.0000	5	Dispersion	
A 244 to	6.91505	5	BP	0.9079	5	Flash Point °C	
B 470 °C	2226.9	5	t _e	0.8716	5	Fire Point	
C	166.	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 244 to	1.62740	5	ΔHc kcal/m			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
B* 460 °C	2125.7	5	ΔHf				
K c			ΔFf				
t _k °C			Viscosity centistokes °C				
x °C			η				
A' °C			B ^v to °C				
B' °C			A ^v to °C				
C' °C			(B ^v) to °C				
A'' to °C			(A ^v) °C				
B'' to °C			c _p liq. °K				
Cc t _c °C			c _p vap. °K				
Cc t _c °C			c _v vap.				
Cryos. A° const. B°							
t _e °C	439.56	5					

^a For undercooled liquid below normal F. P.

⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VII. ALKYL CYANIDES

No. 21

NAME		n-Eicosyl cyanide			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₁₉ CN		
Mole % Pur.	Ref. 3	Molecular Formula C ₂₁ H ₄₁ N	Molecular Weight 307.546				
	Ref.			Ref.			Ref.
F. P. °C	49.	3	dt/dP		f	to	
F. P. 100%			°C/mm		g	to	
B. P. °C			25°C		h	to	
760 mm	397.	3	BP	0.0795	5		
100	296.	5	t _e	0.0416	5	f'	to
30	252.	5	30 mm	1.1083	5	g'	to
10	219.	5	ΔHm cal/g		5	h'	to
1	163.	5					
Pressure mm 25°C			ΔHv cal/g		m	to	
t _e	1754.3	5	25°C		n	to	
Density g/ml 20°C			30 mm	53.60	5	o	to
d ₄ ^t	0.8351 ^a	3	BP	43.04	5		
30	0.8316 ^a	3	t _e	39.44	5	m'	to
			t _e (d, e)	38.99	5	n'	to
			ΔHv/T _e	16.71	5	o'	to
a	0.8491	5	d 252 to	71.97	5	Surface tension dynes/cm. 20°C	
b	-0.03700	5	e 473 °C	0.0729	5	γ	30, 14 5
Ref. Index n _D 20°C			d'			30	29.14 5
25	1.4518 ^a	3	e'			40	28.17 5
30	1.4498 ^a	3				Parachor [P] 20°C	
"C"	0.7163	4	d _c g/ml			30	
MR (Obs.)	99.312	4	v _c ml/g			40	
MR (Calc.) (nD-d/2)	98.928	5	t _c °C			Sugd.	862.9 5
Dielectric			P _c mm			Exp. L. l. %/wt. u.	
A 252 to	6.91263	5	PV/RT			Dispersion	
B 483 °C	2261.9	5	25°C			Flash Point °C	
C	164.	5	30 mm	1.0000	5	Fire Point	
A* 252 to	1.64123	5	BP	0.9062	5	M. Spec. Ultra V.	
B* 473 °C	2160.3	5	t _e	0.8689	5	X-Ray Dif. Infrared	
K			t _c			Solubility in ⁺	
t _k to			ΔHc kcal/m			Acetone	
t _x °C			ΔHf			Carbon tet.	
A' to			ΔFf			Benzene	
B' °C			Viscosity centistokes η			Ether	
C' °C						n-Heptane	
A'* to			B ^v to			Ethanol	
B'* °C			A ^v °C			Water	
Ac to			(B ^v) to			Water in	
Bc °C			(A ^v) °C				
Cc °C			c _p liq. °K				
Cryos. A° const. B°			c _p vap. °K				
t _e °C	452.56	5	c _v vap.				

^a For undercooled liquid below normal F. P. ⁺ grams/100 grams solvent

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

TABLE VIII. THIAALKANES

No. 1

NAME	2-Thiapropane			STRUCTURAL FORMULA
	Methyl sulfide			
Mole % Pur. 99.95	Ref. 3	Molecular Formula C ₂ H ₆ S	Molecular Weight 62.134	CH ₃ SCH ₃
		Ref.		Ref.
F. P. °C	-98.27	3'	dt/dP °C/mm	f to
F. P. 100%			25°C	g °K
B. P. °C			BP	h
760 mm	37.34	3'	t _e	f' to
100	-10.420	4	30 mm	g' °K
30	-31.446	4	ΔHm cal/g	h'
10	-47.397	5		m to
1	-73.7	5	ΔHv cal/g	n °K
Pressure mm 25°C	484.9	4	25°C	o
t _e	834.5	5	30 mm	
			BP	m' to
Density g/ml 20°C	0.84825	3'	t _e	n' °K
d ^t 25	0.84230	3'	t _e (d, e)	o'
d ₄ 30	0.83634	3'	ΔHv/T _e	
			20.43	
a	0.87235	4	d -35 to	Surface tension dynes/cm. 20°C
b	-0.00114	4	e °C	γ
			d' -45 to	30
Ref. Index			e' °C	40
n _D 20°C	1.43547	3'		24.48
25	1.43231	3'	d _c g/ml	23.06
30	1.42900	4	v _c ml/g	21.65
"C"	0.6812	4	t _c °C	
			P _c mm	
MR (Obs.)	19.132	3'	41040.	5
MR (Calc.)	19.406	5	PV/RT	
(n _D -d/2)	1.01134	3'	25°C	0.9710
			30 mm	1.0000
Dielectric			BP	0.9580
A -50 to	6.93138	3	t _e	0.9577
B 130 °C	1081.587	3	t _c	0.264
C	229.746	3	ΔHc kcal/m	
			ΔHf	
A* -31 to	1.19261	5	ΔFf	
B* 50 °C	1011.42	5	Viscosity centistokes	
K			η	
c			20 °C	0.289
t _k to			25	0.279
t _x °C			30	0.266
A' to			B ^v 10 to	321.1
B' °C			A ^v 40 °C	2.36574
C' °C			(B ^v)	
			(A ^v)	
A* to			c _p liq. °K	
B* °C			c _p vap. °K	
Ac 130 to	7.65631	5	c _v vap.	
Bc t _c °C	1666.1	5		
Cc °C	316.5	5		
Cryos. A°	0.027	3'		
const. B°				
t _e °C	39.980	5		
+ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula				
SOURCE: Lit.				
PURIFICATION: Lit.				
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.;				
3' API Res. Proj. 44 (1953)				

NAME		2-Thiabutane		STRUCTURAL FORMULA	
		Ethyl methyl sulfide		CH ₃ SCH ₂ CH ₃	
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight		
99.96	3	C ₃ H ₈ S	76.160		
F.P. °C	-105.91	3	dt/dP °C/mm	0.1432	4
F.P. 100%			25°C BP	0.04104	4
B.P. °C	66.653	3 ¹	t _e	0.03540	5
760 mm	14.67	3 ¹	30 mm	0.5740	4
100	-8.252	4	ΔHm cal/g	17.50	3 ¹
30	-25.65	4	ΔHv cal/g	99.88	3 ¹
10	-54.35	5	25°C	105.84	4
1			30 mm	92.63	3
Pressure mm 25°C	160.0	3 ¹	BP	91.63	5
t _e	917.9	5	t _e (d, e)	91.59	5
Density g/ml 20°C	0.84221	3	t _e	20.18	5
d ^t 25	0.83679	3	ΔHv/T _e		
d ⁴ 30	0.83145	3	d 10 to	104.23	4
a	0.86395	4	e 80 °C	0.1741	4
b	-0.00106	4	d' to		
Ref. Index n _D 20°C	1.44035	3	e' °C		
25	1.43737	3	d _c g/ml	0.289	5
30	1.43437	3	v _c ml/g	3.46	5
"C"	0.6933	4	t _c °C	259.0	5
MR (Obs.)	23.849	4	P _c mm	33370.	5
MR (Calc.) (n _D -d/2)	24.024	5	PV/RT		
	1.01925	4	25°C	0.9864	4
Dielectric			30 mm	0.9950	4
A -20 to	6.93849	3 ¹	BP	0.9588	4
B 30 °C	1182.562	3 ¹	t _e	0.9539	5
C	224.784	3 ¹	t _c	0.255	5
A* -10 to	1.24625	4	ΔHc kcal/m		
B* 100 °C	1105.03	4	ΔHf		
K			ΔFf		
c			Viscosity centistokes		
t _x to			η 20 °C	0.376	3
t _x °C			25	0.357	3
A' to			30	0.340	3
B' °C			B ^v 10 to	388.57	4
C' °C			A ^v 45 °C	2,24992	4
A** to			(B ^v) to		
B** °C			(A ^v) °C		
Ac 130 to	7.39140	5	c _p liq. °K		
Bc t _c °C	1525.8	5	c _p vap. °K		
Cc	273.0	5	c _v vap.		
Cryos. A°	0.04	3			
const. B°					
t _e °C	72.663	5			
‡ S for thiaalkanes = 51.0 † grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: Lit.					
PURIFICATION: Lit.					
LITERATURE REFERENCES: 3 Private communication from Am. Pet. Inst., Res. Proj. 48A, Bureau of Mines, Laramie, Wyo.; 3 ¹ JACS 73, 261 (1951), D.W. Scott et al.					

TABLE VIII. THIAALKANES

No. 3

NAME		3-Methyl-2-thiabutane			STRUCTURAL FORMULA			
		Methyl isopropyl sulfide			$\begin{array}{c} \text{CH}_3\text{SCHCH}_3 \\ \\ \text{CH}_3 \end{array}$			
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight					
99.8	3	$\text{C}_4\text{H}_{10}\text{S}$	90.186					
F.P. °C	-101.51	3'	dt/dP °C/mm					
F.P. 100%			25°C	0.2631	5	f to		
B.P. °C			BP	0.04357	5	g °K		
760 mm	84.75	3'	t _e	0.03616	5	h		
100	29.78	5	30 mm	0.6064	4	f' to		
30	5.53	4	ΔHm cal/g			g' °K		
10	-12.92	5				h'		
1	-43.71	5	ΔHv cal/g			m to		
Pressure mm 25°C	80.53	5	25°C	92.14	5	n °K		
t _e	965.0	5	30 mm	94.11	5	o		
Density g/ml 20°C	0.8291	3'	BP	81.45	5	m' to		
d ₄ ²⁵	0.8251	3'	t _e (d, e)	80.19	5	n' °K		
d ₄ ³⁰	0.8208	4	t _e	80.12	5	o'		
a	0.8447	4	ΔHv/T _e	19.75	5	Surface tension dynes/cm. 20°C		
b	-0.0378	4	d 5 to	94.99	5	γ	24.15	5
Ref. Index n _D 20°C	1.4392	3'	e 100 °C	0.1600	5	30	23.17	5
25	1.4362	3'	d' to			40	22.31	5
30	1.4341	4	e' °C			Parachor [P] 20°C		
"C"	0.7025	4	d _c g/ml	0.295	5	30		
MR (Obs.)	28.62	3'	v _c ml/g	3.39	5	40		
MR (Calc.)	28.642	5	t _c °C	276.4	5	S = 51	Sugd.	241.2
(nD-d/2)	1.0246	3'	P _c mm	28580.	5	Exp. L. l. %/wt. u.		
Dielectric			PV/RT 25°C	0.9961	5	Dispersion		117.
A 5 to	6.89898	3	30 mm	1.0000	5	Flash Point °C		
B 140 °C	1231.151	3	BP	0.9550	5	Fire Point		
C	221.573	3	t _e	0.9473	5	M. Spec. Ultra V.		
A* 0 to	1.27473	5	t _c	0.255	5	X-Ray Dif.		
B* 120 °C	1154.30	5	ΔHc kcal/m			Infrared		
K			ΔHf			Solubility in +		
c			ΔFf			Acetone		
t _k to			Viscosity centistokes			Carbon tet.		
t _x °C			η			Benzene		
A' -50 to	7.24056	5	B ^v to			Ether		
B' 5 °C	1391.39	5	A ^v °C			n-Heptane		
C'	235.88	5	(B ^v)			Ethanol		
A'* -25 to	1.56965	5	(A ^v)			Water		
B'* 50 °C	1298.22	5	c _p liq. °K			Water in		
Ac 140 to	7.32650	5	c _p vap. °K					
Bc t _c °C	1559.8	5	c _v vap.					
Cc t _c °C	267.0	5						
Cryos. A° const. B°	0.036	3'						
t _e °C	92.94	5						
+ grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: Lit.								
PURIFICATION: Lit.								
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al. ; 3' API Res. Proj. 44 (1953)								

NAME		3-Thiapentane			STRUCTURAL FORMULA		
		Diethyl sulfide, Ethyl sulfide			CH ₃ CH ₂ SCH ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₁₀ S	Molecular Weight	90.186		
99.995	3						
		Ref.			Ref.		
F.P. °C	-103.99	3	dt/dP °C/mm			f	to °K
F.P. 100%			25°C	0.3512	4	g	
B.P. °C			BP	0.04387	4	h	
760 mm	92.100	3	t _e	0.03578	5	f'	to °K
100	36.561	4				g'	
30	12.08	4	30 mm	0.6361	4	h'	
10	-6.490	4	ΔHm cal/g			m	to °K
1	-37.1	5	ΔHv cal/g			n	
Pressure mm 25°C	58.37	4	25°C	95.07	4	o	
t _e	985.8	5	30 mm	97.55	4		
Density g/ml 20°C	0.83623	3'	BP	84.17	3	m'	to °K
d _t 25	0.83120	3'	t _e (d, e)	82.80	5	n'	
d ₄ 30	0.82625	3'	ΔHv/T _e	82.69	5	o'	
a	0.85633	4	d 10 to	99.13	5	Surface tension dynes/cm. 20°C	
b	-0.03994	4	e 110 °C	0.1625	5	30	25.2
Ref. Index n _D 20°C	1.44298	3'	e' to °C			40	24.5
25	1.44017	3'	d c g/ml	0.260	5		23.9
30	1.43734	3'	v c ml/g	3.846	5	Parachor [P]	
"C"	0.7022	4	t c °C	272.8	5	20°C	241.70
MR (Obs.)	28.590	4	P c mm	25030.	5	30	241.50
MR (Calc.)	28.642	5				40	241.43
(nD-d/2)	1.02487	4	PV/RT			Sugd.	241.2 ^z
Dielectric			25°C	0.9946	4	Exp. L. l. %/wt. u.	
A 0 to	6.92836	3	30 mm	1.0001	4	Dispersion	
B 150 °C	1257.833	3	BP	0.9545	4	Flash Point °C	
C	218.662	3	t _e	0.9468	4	Fire Point	
A* 0 to	1.29509	4	t _c	0.255	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 111 °C	1179.80	4	ΔHc kcal/m	-28.5	3		
K			ΔHf				
t _c to °C			ΔFf				
t _x to °C			Viscosity centistokes			Solubility in +	
A' to °C			γ			Acetone	
B' to °C			20 °C	0.442	3'	Carbon tet.	
C' to °C			25	0.419	3'	Benzene	
A'* to °C			30	0.398	3'	Ether	
B'* to °C			B ^v 10 to	404.84	4	n-Heptane	
A ^v 40 °C			A ^v to °C	2.26466	4	Ethanol	
(B ^v) to °C			(A ^v) to °C			Water	
c _p liq. °K			c _p liq. °K			Water in	
c _p vap. °K			c _v vap.				
t _e °C	101.026	5					
			≠ S = 51.0		+ grams/100 grams solvent		
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 JACS 74, 4656 (1952) D.W. Scott et al.; 3' Private communication from Am. Pet. Inst. Proj. 48A, Bureau of Mines, Laramie, Wyo.							

TABLE VIII. THIAALKANES

No. 5

NAME	2-Thiapentane			STRUCTURAL FORMULA $\text{CH}_3\text{S}(\text{CH}_2)_2\text{CH}_3$		
	Methyl n-propyl sulfide					
Mole % Pur.	Ref.	Molecular Formula $\text{C}_4\text{H}_{10}\text{S}$	Molecular Weight 90.186			
F. P. °C	-112.97	3'				
F. P. 100%						
B. P. °C						
760 mm	95.54	3'	dt/dP °C/mm			
100	39.51	3'	25°C	0.3958	5	f to
30	14.778	4	BP	0.04420	4	g °K
10	-4.09	5	t _e	0.03576	5	h
1	-35.65	5	30 mm	0.6195	4	f' to
						g' °K
						h'
Pressure mm 25°C	50.885	5	ΔHm cal/g			m to
t _e	996.0	5	25°C	97.29	5	n °K
			30 mm	98.32	5	o
Density g/ml 20°C	0.8424	3'	BP	85.12	5	m' to
d ^t 25	0.8375	3'	t _e	83.73	5	n' °K
d ^t 30	0.8326	4	t _e (d, e)	83.59	5	o'
			ΔHv/T _e	19.97	5	
a	0.8620	4	d 14 to	100.73	5	Surface tension
b	-0.0397	4	e 105 °C	0.1634	5	dynes/cm. 20°C
Ref. Index			d' to			25.74
n _D 20°C	1.4442	3'	e' °C			30
25	1.4415	3'				40
30	1.4387	4				24.55
"C"	0.6989	4				23.47
MR (Obs.)	28.45	3'	d _c g/ml	0.28	5	Parachor [P]
MR (Calc.)	28.642	5	v _c ml/g	3.57	5	20°C
(n _D -d/2)	1.0264	3'	t _c °C	301.0	5	30
			P _c mm	31000.	5	40
Dielectric			PV/RT			S = 51 Sugd. 241.2
A 14 to	6.95545	3	25°C	0.9984	5	Exp. L. l. %/wt.
B 155 °C	1284.334	3	30 mm	1.0000	5	u.
C	219.662	3	BP	0.9545	5	Dispersion
			t _e	0.5168	5	113.
			t _c	0.279	5	Flash Point °C
A* 14 to	1.31639	5	ΔHc kcal/m			Fire Point
B* 125 °C	1204.6	5	ΔHf			M. Spec.
K			ΔFf			Ultra V.
t _k to			Viscosity			X-Ray Dif.
t _x °C			centistokes			Infrared
A' -40 to	7.30058	5	η			Solubility in +
B' 14 °C	1451.26	5				Acetone
C'	234.43	5				Carbon tet.
						Benzene
A'* -25 to	1.65209	5	B ^v to			Ether
B'* 14 °C	1364.2	5	A ^v °C			n-Heptane
			(B ^v)			Ethanol
			(A ^v)			Water
Ac to			c _p liq. °K			Water in
Bc t _c °C			c _p vap. °K			
Cc t _c °C			c _v vap.			
Cryos. A°	0.044	3'				
consts. B°						
t _e °C F	104.89	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: Lit.						
PURIFICATION: Lit.						
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al. ; 3' API Res. Proj. 44 (1953)						

NAME		2-Methyl-3-thiapentane			STRUCTURAL FORMULA				
					$\text{CH}_3\text{CHSCH}_2\text{CH}_3$ CH_3				
Mole % Pur.	Ref.	Molecular Formula		Molecular Weight					
99.85	3	$\text{C}_5\text{H}_{12}\text{S}$		104.206					
F.P. °C	-122.19	3'	dt/dP °C/mm		5	f		to	
F.P. 100%			25°C	0.6053	5	g		°K	
B.P. °C	107.38	3	BP	0.04594	4	h			
760 mm	49.32	5	t_e	0.36448	5	f'		to	
100	23.79	4	30 mm	0.6386	4	g'		°K	
30	4.35	5				h'			
10	-28.06	5	ΔH_m cal/g			m		to	
1						n		°K	
Pressure mm 25°C	31.951	5	ΔH_v cal/g	87.70	5	o			
t_e	1022.63	5	25°C	87.80	5	m'		to	
Density g/ml 20°C	0.8246	3'	30 mm	75.04	5	n'		°K	
d_4^{25}	0.8199	3'	BP	73.58	5	o'			
d_4^{30}	0.8151	4	t_e (d, e)	73.41	5	Surface tension dynes/cm. 20°C			
			$\Delta H_v/T_e$	19.60	5	24.15	5		
a	0.8438	4	d 23 to	91.43	5	30	5		
b	-0.0395	4	e 120 °C	0.1526	5	40	5		
Ref. Index n_D^{20}	1.4407	3'	d' to °C			21.97	5		
25	1.4382	3'	e'			Parachor [P] 20°C			
30	1.4353	4	d c g/ml		5	30			
"C"	0.7086	4	v c ml/g	294.0	5	40			
MR (Obs.)	33.350	3'	t c °C			Sugd.	280.2	5	
MR (Calc.)	33.260	5	P c mm			Exp. L. l. %/wt. u.			
(nD-d/2)	1.0284	3'	PV/RT 25°C	1.0000	5	Dispersion 117. 3'			
Dielectric			30 mm	1.0000	5	Flash Point °C			
A 23 to	6.89130	3	BP	0.9486	5	Fire Point			
B 180 °C	1293.058	3	t_e	0.9394	5	M Spec. Ultra V. X-Ray Dif. Infrared			
C	215.041	3	t_c			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in			
A* 23 to	1.31444	5	ΔH_c kcal/m						
B* 140 °C	1214.93	5	ΔH_f						
K			ΔF_f						
t_x to °C			Viscosity centistokes η °C						
A' -30 to	7.23240	5	B ^v to °C						
B' 23 °C	1461.12	5	A ^v to °C						
C' 230.09	230.09	5	(B ^v) to °C						
A ^{i*} -20 to	1.65195	5	(A ^v) °C						
B ^{i*} 23 °C	1377.2	5	c _p liq. °K						
Ac to			c _p vap. °K						
Bc to °C			c _v vap.						
Cc to °C									
Cryos. A° const. B°									
t_e °C F	118.086	5							
+ grams/100 grams solvent									
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: Lit.									
PURIFICATION: Lit.									
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.; 3' API Res. Proj. 44 (1953)									

TABLE VIII. THIAALKANES

No. 7

NAME		3-Thiahexane			STRUCTURAL FORMULA		
					CH ₃ CH ₂ S(CH ₂) ₂ CH ₃		
Mole % Pur. 99.8	Ref. 3	Molecular Formula C ₅ H ₁₂ S	Molecular Weight 104.206				
		Ref.			Ref.		
F. P. °C	-117.04	3 ¹	dt/dP °C/mm		f	to	
F. P. 100%			25°C	0.9499	g	°K	
B. P. °C			BP	0.04667	h	-----	
760 mm	118.50	3	t _e	0.03617	f'	to	
100	59.40	5	t _e (d, e)	0.6522	g'	°K	
30	33.35	4	ΔHm cal/g		h'		
10	13.49	5			m	to	
1	-19.70	5	ΔHv cal/g		n	°K	
Pressure mm 25°C	19.308	5	25°C	92.48	o		
t _e	1052.97	5	30 mm	91.58			
Density g/ml 20°C	0.8370	3 ¹	BP	78.17			
t 25	0.8324	3 ¹	t _e	76.50	m'	to	
d ₄ 30	0.8278	4	t _e	76.32	n'	°K	
			ΔHv/T _e	19.75	o'		
a	0.8555	4	d 33 to	96.83	Surface tension dynes/cm. 20°C		
b	-0.0392	4	e 130 °C	0.1575	25.64 5		
Ref. Index n _D 20°C	1.4462	3 ¹	d'		30 24.54 5		
25	1.4435	3 ¹	e'		40 23.46 5		
30	1.4410	4	d _c g/ml		Parachor [P] 20°C		
"C"	0.7063	4	v _c ml/g		30		
MR (Obs.)	33.212	4	t _c °C		40		
MR (Calc.)	33.260	5	P _c mm		S = 51 Sugd. 280.2 5		
(n _D -d/2)	1.0277	3 ¹	PV/RT 25°C	1.0000	Exp. L. l. %/wt. u.		
Dielectric			30 mm	1.0000	Dispersion 116. 3 ¹		
A 33 to	6.93380	3	BP	0.9476	Flash Point °C		
B 200 °C	1341.554	3	t _e	0.9375	Fire Point		
C	212.507	3	t _e		M. Spec. Ultra V. X-Ray Dif. Infrared		
A* 33 to	1.34709	5	ΔHc kcal/m		Solubility in ⁺ Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
B* 140 °C	1262.10	5	ΔHf				
K			ΔFf				
t _x --- to			Viscosity centistokes η °C				
t _x --- to							
A' -20 to	7.27757	5	B ^v --- to				
B' 33 °C	1515.91	5	A ^v --- °C				
C' 227.99	227.99	5	(B ^v) ---				
A'* -10 to	1.64943	5	(A ^v) ---				
B'* 33 °C	1420.6	5	c liq. °K				
Ac to			c _p vap. °K				
Bc t _c ---			c _v vap.				
Cc t _c ---							
Cryos. A* const. B*							
t _e °C F	130.48	5					
* grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al;							
3 ¹ API Res. Proj. 44 (1953)							

NAME		2, 4-Dimethyl-3-thiapentane			STRUCTURAL FORMULA		
		iso-Propyl sulfide			CH ₃ CHS ₁ CHCH ₃ CH ₃ CH ₃		
Mole % Pur. 99.93	Ref. 3	Molecular Formula C ₆ H ₁₄ S	Molecular Weight 118.238				
		Ref.			Ref.	Ref.	
F. P. °C	-78.08	3'	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.9625	5	g	°K
B. P. °C	120.02	3	BP	0.04761	4	h	
760 mm	59.90	5	t _e	0.03699	5	f'	to
100	33.49	4	30 mm	0.6603	4	g'	°K
30	13.40	5	ΔHm cal/g			h'	
10	-20.09	5	ΔHv cal/g			m	to
Pressure mm 25°C	19.262	5	25°C	80.62	5	n	°K
t _e	1050.80	5	30 mm	79.80	5	o	
Density g/ml 20°C	0.8146	3'	BP	67.69	5	m'	to
d ^t 25	0.8104	3'	t _e	66.19	5	n'	°K
d ⁴ 30	0.8062	4	t _e (d, e)	65.99	5	o'	
a	0.8314	4	ΔHv/T _e	19.31	5	Surface tension dynes/cm. 20°C	
b	-0.0384	4	d 33 to	84.49	5	30	23.36
Ref. Index n _D 20°C	1.4388	3'	e 135 °C	0.1400	5	40	22.41
25	1.4362	3'	d' to				21.49
30	1.4336	4	e' °C				
"C"	0.7145	4	d _c g/ml			Parachor [P] 20°C	
MR (Obs.)	38.16	3'	v _c ml/g			30	
MR (Calc.) (n _D -d/2)	37.878	5	t _c °C			40	
	1.0315	3'	P _c mm			Sugd.	319.1
Dielectric			PV/RT 25°C	1.0000	5	Exp. L. l. %/wt. u.	
A 33 to	6.87419	3	30 mm	1.0000	5	Dispersion	
B 180 °C	1328.624	3	BP	0.9425	5	Flash Point °C	
C	212.684	3	t _e	0.9317	5	Fire Point	
A* 33 to	1.34933	5	t _c			M Spec. Ultra V. X-Ray Dif. Infrared	
B* 150 °C	1250.83	5	ΔHc kcal/m			Solubility in +	
K			ΔHf			Acetone	
c			ΔFf			Carbon tet.	
t _x to			Viscosity centistokes °C			Benzene	
t _x °C						Ether	
A' -20 to	7.21420	5	B ^v to			n-Heptane	
B' 33 °C	1501.30	5	A ^v °C			Ethanol	
C'	228.19	5	(B ^v) to			Water	
A'* -10 to	1.64315	5	(A ^v) °C			Water in	
B'* 33 °C	1406.5	5	c _p liq. °K				
Ac to			c _p vap. °K				
Bc t _c °C			c _v vap.				
Cc °C							
Cryos. A° const. B°							
t _e °C F	132.174	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952) P. T. White et al. ; 3' API Res. Proj. 44 (1953)							

NAME		2, 2-Dimethyl-3-thiapentane			STRUCTURAL FORMULA		
		tert-Butyl ethyl sulfide			$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3\text{C} \text{---} \text{S} \text{---} \text{CH}_2\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$		
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight				
99.97	3	$\text{C}_6\text{H}_{14}\text{S}$	118.238				
F. P. °C		-88.95	3'	dt/dP °C/mm		Ref.	
F. P. 100%							
B. P. °C				25°C		5	
760 mm	120.41	3		BP		4	
100	59.90	5		t _e		5	
30	33.36	4		30 mm		4	
10	13.18	5		ΔHm cal/g			
1	-20.42	5		ΔHv cal/g			
Pressure mm		19.437	5	25°C		5	
t _e		1049.65	5	30 mm		5	
Density g/ml		0.8206	3'	BP		5	
20°C		0.8161	3'	t _e		5	
d ₄ ²⁵		0.8116	4	t _e (d, e)		5	
d ₄ ³⁰				ΔHv/T _e		5	
a	0.8386	4		d 33 to		5	
b	-0.0390	4		e 135 °C		5	
Ref. Index n _D		1.4417	3'	d _e g/ml			
20°C		1.4390	3'	v _c ml/g			
25		1.4363	4	t _c °C			
30				P _c mm			
"C"				PV/RT			
MR (Obs.)	38.10	3'		25°C		5	
MR (Calc.)	37.878	5		30 mm		5	
(nD-d/2)	1.0314	3'		BP		5	
Dielectric		0.7279	4	t _e		5	
A 33 to	6.85386	3		t _c		5	
B 180 °C	1324.732	3		ΔHc kcal/m			
C	213.020	3		ΔHf			
A* 33 to	1.33128	5		ΔFf			
B* 150 °C	1247.39	5		Viscosity centistokes			
K				η °C			
c				B ^v to			
t _k to				A ^v °C			
t _x °C				(B ^v) to			
A' -20 to	7.19260	5		(A ^v) °C			
B' 33 °C	1496.91	5		c liq. °K			
C'	228.54	5		p °K			
A'* -10 to	1.62391	5		c _v vap. °K			
B'* 33 °C	1402.6	5					
Ac to							
Bc t _c °C							
Cc °C							
Cryos. A° const. B°							
t _e °C F	132.609	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al. ; 3' API Res. Proj. 44 (1953)							

NAME		2-Methyl-3-thiahexane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CHS}(\text{CH}_2)_2\text{CH}_3$ CH_3		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_6\text{H}_{14}\text{S}$	Molecular Weight	118.238		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	1.5858	5	g	°K
B. P. °C			BP	0.04839	4	h	
760 mm	132.05	3	t_e	0.0367	5	f'	to
100	70.80	5	t_e (d, e)	68.93	5	g'	°K
30	43.81	4	ΔHm cal/g	0.6756	4	h'	
10	23.23	5	ΔHv cal/g			m	to
1	-11.12	5	25°C	85.17	5	n	°K
Pressure mm 25°C	11.067	5	30 mm	83.33	5	o	
t_e	1082.89	5	BP	70.63	5	m'	to
Density g/ml 20°C	0.8269	3'	t_e	68.93	5	n'	°K
d_4^{25}	0.8225	3'	t_e (d, e)	68.68	5	o'	
d_4^{30}	0.8181	4	$\Delta\text{Hv}/T_e$	19.46	5	Surface tension dynes/cm. 20°C	
a	0.8445	4	d 43 to	89.63	5	30	24.80
b	-0.0288	4	e 145 °C	0.1439	5	40	23.76
Ref. Index n_D^{20}	1.4440	3'	d' 20 to	87.61	5	40	22.75
25	1.4414	3'	e' 43 °C	0.0978	5	Parachor [P] 20°C	
30	1.4390	4	d_c g/ml			30	
"C"	0.7116	4	v_c ml/g			40	
MR (Obs.)	37.98	3'	t_c °C			Sugd.	319.1
MR (Calc.) (nd-d/2)	37.878	5	P _c mm			Exp. L. l. %/wt. u.	
	1.0306	3'	PV/RT 25°C	1.0000	5	115.	3'
Dielectric			30 mm	1.0000	5	Dispersion	
A 43 to	6.92577	3	BP	0.9411	5	Flash Point °C	
B 190 °C	1385.492	3	t_e	0.9294	5	Fire Point	
C	210.476	3	t_c			M Spec. Ultra V. X-Ray Dif. Infrared	
A* 43 to	1.39075	5	ΔHc kcal/m			Solubility in +	
B* 160 °C	1306.21	5	ΔHf			Acetone	
K			ΔFf			Carbon tet.	
t_x to °C			Viscosity centistokes			Benzene	
t_x to °C			η °C			Ether	
A' -10 to	7.26904	5	B ^v to °C			n-Heptane	
B' 43 °C	1565.56	5	A ^v to °C			Ethanol	
C'	226.50	5	(B ^v) to °C			Water	
A'* 0 to	1.68874	5	(A ^v) °C			Water in	
B'* 43 °C	1469.1	5	c_p liq. °K				
Ac to			c_p vap. °K				
Bc t_c °C			c_v vap.				
Cc t_c °C							
Cryos. A* consts. B*							
t_e °C F	145.583	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.; 3' API Res. Proj. 44 (1953)							

TABLE VIII. THIAALKANES

No. 11

NAME		4-Methyl-3-thiahexane			STRUCTURAL FORMULA	
					$\text{CH}_3\text{CH}_2\text{SCH}(\text{CH}_3)\text{CH}_2\text{CH}_3$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_6\text{H}_{14}\text{S}$	Molecular Weight	118.238	
F. P. °C						
F. P. 100%						
B. P. °C						
760 mm	133.65	3		dt/dP °C/mm		
100	72.05	5		25°C	1.6721	5
30	44.89	4		BP	0.04864	4
10	24.16	5		t_e	0.0368	5
1	-10.45	5		30 mm	0.6802	4
				ΔH_m cal/g		
Pressure mm 25°C	10.490	5		ΔH_v cal/g		
t_e	1086.00	5		25°C	85.22	5
				30 mm	83.33	5
Density g/ml 20°C	0.8353	3'		BP	70.74	5
d_{25}^t	0.8307	3'		t_e	69.04	5
d_4^{30}	0.8261	4		t_e (d, e)	68.79	5
				$\Delta H_v/T_e$	19.41	5
a	0.8537	4		d 44 to	89.69	5
b	-0.0392	4		e 145 °C	0.1418	5
Ref. Index n_D^{20}	1.4477	3'		d' 20 to	87.59	5
25	1.4451	3'		e' 44 °C	0.0950	5
30	1.4425	4		d_c g/ml		
"C"	0.7100	4		v_c ml/g		
MR (Obs.)	37.87	3'		t_c °C		
MR (Calc.)	37.878	5		P_c mm		
(nD-d/2)	1.0300	3'		PV/RT		
Dielectric				25°C	1.0000	5
A 44 to	6.93856	3		30 mm	1.0000	5
B 190 °C	1401.462	3		BP	0.9400	5
C	211.732	3		t_e	0.9281	5
A* 44 to	1.40236	5		t_c		
B* 160 °C	1321.52	5		ΔH_c kcal/m		
K				ΔH_f		
c				ΔF_f		
t_k to				Viscosity		
t_x °C				centistokes		
A' -10 to	7.28263	5		η °C		
B' 44 °C	1583.61	5		B^v to		
C'	227.90	5		A^v °C		
A'* 10 to	1.69873	5		(B^v) to		
B'* 44 °C	1485.7	5		(A^v) °C		
Ac to				c_p liq. °K		
Bc t_c -				c_p vap. °K		
Cc t_c -				c_v vap.		
Cryos. A°						
const. B°						
t_e °C F	147.366	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: Lit.						
PURIFICATION: Lit.						
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al. ; 3' API Res. Proj. 44 (1953)						

No. 12

NAME		5-Methyl-3-thiahexane				STRUCTURAL FORMULA				
						$\text{CH}_3\text{CH}_2\text{SCH}_2\underset{\text{CH}_3}{\text{CH}}\text{CH}_3$				
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_6\text{H}_{14}\text{S}$	Molecular Weight	118.238					
		Ref.			Ref.					
F.P. °C			dt/dP			f		to		
F.P. 100%			°C/mm			g		°K		
B.P. °C			25°C	1.7235	5	h				
760 mm	134.22	3	BP	0.04865	4	f'		to		
100	72.64	5	t _e	0.0368	5	g'		°K		
30	45.50	4	30 mm	0.6793	4	h'				
10	24.81	5	ΔHm cal/g			m		to		
1	-9.74	5				n		°K		
Pressure mm 25°C	10.108	5	ΔHv cal/g			o				
t _e	1087.50	5	25°C	85.80	5	m'		to		
Density g/ml 20°C	0.8306	2	30 mm	83.76	5	n'		°K		
d ₄ ^t 25	0.8261	2	BP	70.93	5	o'				
d ₄ ^t 30	0.8216	4	t _e	69.19	5	Surface tension dynes/cm. 20°C				
			t _e (d, e)	68.94	5	25	25.29	5		
			ΔHv/T _e	19.42	5	30	24.21	5		
a	0.8486	4	d 45 to	90.34	5	40	23.17	5		
b	-0.039	4	e 150 °C	0.1446	5	Parachor [P]				
Ref. Index			d' 20 to	88.29	5	20°C				
n _D 20°C	1.4450	2	e' 45 °C	0.0995	5	30				
25	1.4424	2	d _c g/ml			40				
30	1.4398	4	v _c ml/g			S = 51	Sugd.	319.2	5	
"C"	0.5897	4	t _c °C			Exp. L. l. %/wt. u.				
MR (Obs.)	37.89	2	F _c mm			Dispersion	114.	3		
MR (Calc.)	37.878	5	PV/RT			Flash Point °C				
(nD-d/Z)	1.0297	2	25°C	1.0000	5	Fire Point				
Dielectric			30 mm	1.0000	5	M Spec.				
A 45 to	6.92643	3	BP	0.9401	5	Ultra V.				
B 190°C	1393.507	3	t _e	0.9280	5	X-Ray Dif.				
C	210.226	3	t _c			Infrared				
A* 45 to	1.39104	5	ΔHc kcal/m			Solubility in +				
B* 160°C	1314.27	5	ΔHf			Acetone				
K			ΔFf			Carbon tet.				
c			Viscosity centistokes			Benzene				
t _k to °C			η °C			Ether				
A' -10 to	7.26974	5	B ^v to °C			n-Heptane				
B' 45°C	1574.62	5	A ^v to °C			Ethanol				
C'	226.34	5	(B ^v) to °C			Water				
A** 10 to	1.69045	5	(A ^v) to °C			Water in				
B** 45°C	1478.5	5	c _p liq. °K							
Ac to			c _p vap. °K							
Bc t _c °C			c _v vap.							
Cc t _c °C										
Cryos. A°										
const. B°										
t _e °C	148.002	5								
+ grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: Lit.										
PURIFICATION: Lit.										
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.										

TABLE VIII. THIAALKANES

No. 13

NAME		4-Thiaheptane			STRUCTURAL FORMULA		
		Di-n-propyl sulfide			CH ₃ (CH ₂) ₂ S(CH ₂) ₂ CH ₃		
Mole % Pur.	Ref.	Molecular Formula	C ₆ H ₁₄ S	Molecular Weight	118.238		
F. P. °C	-102.5	3'	dt/dP		Ref.	f	to
F. P. 100%			°C/mm			g	*K
B. P. °C			25°C	2.5434	5	h	
760 mm	142.83	3	BP	0.04910	5		
100	80.65	5	t _e	0.0365	5	f'	to
30	53.22	4	30 mm	0.6866	4	g'	*K
10	32.31	5				h'	
1	-2.63	5	ΔHm cal/g			m	to
Pressure mm 25°C	6.523	5	ΔHv cal/g			n	*K
t _e	1111.04	5	25°C	90.97	5	o	
Density g/ml 20°C	0.8377	3'	30 mm	86.95	5		
d ₄ ^t 25	0.8332	3'	BP	73.27	5	m'	to
d ₄ ^t 30	0.8287	4	t _e	71.33	5	n'	*K
			t _e (d, e)	70.89	5	o'	
			ΔHv/T _e	19.57	5		
a	0.8557	4	d	53 to	5	Surface tension dynes/cm. 20°C	
b	-0.0390	4	e	150 °C	5	γ	26.13
Ref. Index n _D 20°C	1.4487	3'	d'	20 to	5		25.02
25	1.4461	3'	e'	53 °C	5		23.95
30	1.4436	4				Parachor [P] 20°C	
"C"	0.7095	4	d _c g/ml				30
MR (Obs.)	37.84	3'	v _c ml/g				40
MR (Calc.)	37.878	5	t _c °C				Sugd. 319.1
(nD-d/2)	1.0298	3'	P _c mm				5
Dielectric			PV/RT			Exp. L. l. %/wt. u.	
A	53 to	3	25°C	1.0000	5		
B	95 °C	3	30 mm	1.0000	5	Dispersion	113.
C	1414.975	3	BP	0.9397	5	Flash Point °C	
	205.846	3	t _e	0.9279	5	Fire Point	
A*	53 to	5	t _c			M. Spec. Ultra V. X-Ray Dif. Infrared	
B*	165 °C	5				Solubility in ⁺	
K	1335.9	5	ΔHc kcal/m			Acetone	∞
c			ΔHf			Carbon tet.	∞
t _k			ΔFf			Benzene	∞
t _x			Viscosity centistokes			Ether	∞
			η °C			n-Heptane	∞
A ^l	0 to	5				Ethanol	∞
B ^l	53 °C	5	B ^v	to		Water	∞
C ^l	1598.88	5	A ^v	°C		Water in	
	222.17	5	(B ^v)	to			
A ^{l*}	20 to	5	(A ^v)	°C			
B ^{l*}	53 °C	5	c _p liq. °K				
A ^c	to		c _p vap. °K				
B ^c	t _c °C		c _v vap.				
C ^c							
Cryos. A° const. B°	0.050	3 ²					
t _e °C F	157.598	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al;							
3 ¹ API Res. Proj. 44 (1953); 3 ² Private communication from Am. Pet. Inst. Res. Proj. 48 A,							
Bureau of Mines, Laramie, Wyo.							

NAME		3-Thiaheptane			STRUCTURAL FORMULA		
					$\text{CH}_3\text{CH}_2\text{S}(\text{CH}_2)_3\text{CH}_3$		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_6\text{H}_{14}\text{S}$	Molecular Weight			
99.8	3			118.238			
F.P. °C	-95.13	3'					
F.P. 100%							
B.P. °C							
760 mm	144.24	3'	dt/dP °C/mm	2.6932	5	f	to
100	81.86	5	BP	0.04924	4	g	°K
30	54.33	4	t_e	0.03651	5	h	
10	33.34	5	30 mm	0.6891	4	f'	to
1	-1.73	5				g'	°K
			$\Delta\text{Hm cal/g}$			h'	
Pressure mm 25°C	6.134	5	$\Delta\text{Hv cal/g}$			m	to
t_e	1114.3	5	25°C	90.48	5	n	°K
			30 mm	87.23	5	o	
			BP	73.51	5		
Density g/ml 20°C	0.8376	3'	t_e	71.55	5	m'	to
d_t 25	0.8332	3'	t_e (d, e)	71.23	5	n'	°K
d_4 30	0.8288	4	$\Delta\text{Hv}/T_e$	19.56	5	o'	
a	0.8552	4	d 54 to	95.52	5	Surface tension dynes/cm. 20°C	
b	-0.0388	4	e 155 °C	0.1526	5	γ	26.14
Ref. Index n_D 20°C	1.4491	3'	d_t 20 to	93.25	5		25.06
25	1.4463	3'	e' 54 °C	0.1108	5		24.02
30	1.4435	4				Parachor [P]	
"C"	0.7101	4	d	0.267	5		
MR (Obs.)	37.87	3'	v	3.738	5		
MR (Calc.)	37.878	5	c	345.	5		
(n_D -d/2)	1.0303	3'	t_c				
Dielectric			P_c mm	23000.	5	S = 51	Sugd. 319.2
A 54 to	6.94424	3	PV/RT			Exp. L. l. %/wt. u.	
B 210 °C	1422.869	3	25°C	1.0000	5	Dispersion	
C	205.927	3	30 mm	1.0000	5	112.	
			BP	0.9392	5	Flash Point °C	
A* 54 to	1.40249	5	t_e	0.9263	5	Fire Point	
B* 165 °C	1343.69	5	t_c	0.264	5	M Spec. Ultra V. X-Ray Dif. Infrared	
K			$\Delta\text{Hc kcal/m}$			Solubility in +	
c			ΔHf			Acetone	∞
t_k to			ΔFi			Carbon tet.	∞
t_x °C			Viscosity centistokes η °C			Benzene	∞
A' 0 to	7.28867	5				Ether	∞
B' 54 °C	1607.7	5	B^v to			n-Heptane	∞
C'	222.3	5	A^v °C			Ethanol	∞
A'* 10 to	1.70873	5	(B^v) to			Water	∞
B'* 54 °C	1512.9	5	(A^v) °C			Water in	∞
Ac to			c_p liq. °K				
Bc t_c °C			c_p vap. °K				
Cc °C			c_v vap.				
Cryos. A° const. B°							
t_e °C	159.17	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Lit.							
PURIFICATION: Lit.							
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.; 3' API Res. Proj. 44 (1953)							

TABLE VIII. THIAALKANES

No. 15

NAME		Ethanethiol		Ethyl mercaptan		STRUCTURAL FORMULA				
						CH ₃ -CH ₂ -SH				
Mole % Pur.	99.98	Ref. 3 ¹	Molecular Formula	C ₂ H ₆ S	Molecular Weight	62.134				
		Ref.			Ref.			Ref.		
F. P. °C	-147.89	3 ¹	dt/dP	°C/mm			f		to	
F. P. 100%			25°C		0.04992	4	g		°C	
B. P. °C			BP		0.03739	5	h			
760 mm	35.0	3 ¹	t _e		0.03474	5	f'		to	
100	-12.379	4	30 mm		0.5238	4	g'		°C	
30	-33.295	4	ΔHm cal/g		19.14	3 ¹	h'			
10	-49.174	4	ΔHv cal/g				m		to	
1	-75.384	4	25°C		105.03	3 ¹	n		°K	
Pressure mm 25°C	527.3	4	30 mm		117.14	5	o			
t _e	835.7	5	BP		103.01	3 ¹	m'		to	
Density g/ml 20°C	0.83914	3	t _e		102.46	5	n'		°K	
d _t 25	0.83316	3	t _e (d, e)		102.45	5	o'			
d ₄ 30	0.82726	4	ΔHv/T _e		20.48	5	Surface tension dynes/cm. 20°C			
a	0.86324	4	d	-35 to	110.25	4	γ	23.5	3	
b	-0.00113	4	d'	45 °C	0.2069	4		30	3	
Ref. Index			e'	to °C				40	5	
n _D 20°C	1.43105	3	d _c g/ml		0.3252	5	Parachor [P] 20°C			
25	1.42779	3	v _c ml/g		3.075	3 ²		163.	4	
30	1.42456	4	t _c °C		225.5	3 ²		25	4	
"C"	0.6820	4	P _c mm		41192.	3 ²		40		
MR (Obs.)	19.177	4	PV/RT				Sugd. 163.2 [‡]			
MR (Calc.)	19.126	5	25°C		0.9692	4	Exp. L. l. %/wt. u.			
(n _D -d/2)	1.01121	4	30 mm		1.0000	5	Dispersion			
Dielectric			BP		0.9665	4	Flash Point °C			
A -40 to	6.95206	3 ¹	t _e		0.9660	5	Fire Point			
B 100 °C	1084.531	3 ¹	t _c		0.253	4	M. Spec. Ultra V. X-Ray Dif. Infrared			
C	231.385	3 ¹	Viscosity centistokes				Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in			
A* -40 to	1.11667	4	η	20 °C	0.297	3				
B* 70 °C	988.69	4	η	25	0.283	3				
K			B ^v to							
c			A ^v °C							
t _k to			(B ^v)							
t _x °C			(A ^v)							
A' to			c _p liq. 20 °C		0.276					
B' °C			40		0.2887					
A'* to			c _p vap. °K							
B'* °C			c _v vap.							
Ac 100 to	7.49061	5								
Bc t _c °C	1470.4	5								
Cc °C	285.8	5								
Cryos. A° const. B°	0.0381	3 ¹								
t _e °C	37.73	5								
[‡] S for alkyl mercaptans = 51.0										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE: API										
PURIFICATION: API										
LITERATURE REFERENCES: 3 Private communication from Am. Pet. Inst., Res. Proj. 48A, Bureau of Mines, Laramie, Wyo. 3 ¹ JACS 74, 2801(1952), H. L. Finke et al.; 3 ² Ind. Eng. 34, 521(1942) H. P. Meissner and E. M. Redding.										

No. 16

NAME		2-Methyl-2-propanethiol			STRUCTURAL FORMULA			
					$\begin{array}{c} \text{SH} \\ \\ \text{CH}_3\text{-C-CH}_3 \\ \\ \text{CH}_3 \end{array}$			
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_4\text{H}_{10}\text{S}$	Molecular Weight	90.186			
99.96								
		Ref.			Ref.			
F. P. °C	+1.26	2	dt/dP °C/mm			f	to	
F. P. 100%			25°C	0.1302	4	g	°K	
B. P. °C			BP	0.04176	4	h		
760 mm	64.22	2	t_e	0.03631	5	f'	to	
100	11.687	3	30 mm	0.5726	4	g'	°K	
30	-11.308	4	ΔH_m cal/g	6.58	3	h'		
10	-28.57	3	ΔH_v cal/g			m	to	
1	-57.0	4	25°C	81.59	3	n	°K	
Pressure mm 25°C	181.46	4	30 mm	88.02	5	o		
t_e	910.2	5	BP	75.37	3	m'	to	
Density g/ml 20°C	0.80020	3'	t_e	74.46	5	n'	°K	
25	0.79472	3'	t_e (d, e)	74.44	5	o'		
d ^t 25	0.79472	3'	$\Delta H_v/T_e$	19.56	5	Surface tension dynes/cm. 20°C		
d ⁴ 30	0.78929	3'	d -11 to	85.55	4	y	20.90	
a	0.82148	5	e 80 °C	0.1586	4		30	
b	-0.021064	4	d' to				40	
Ref. Index			e' °C			Parachor [P]		
n _D 20°C	1.42320	3'	d g/ml	0.278	5	20°C		
25	1.42007	3'	v _c ml/g	3.596	5	30		
30	1.41697	3'	t _c °C	236.0	5	40		
"C"	0.7029	4	P _c mm	24480.	5	Sugd. 241.2		
MR (Obs.)	28.711	2	PV/RT			Exp. L. l. %/wt.		
MR (Calc.)	28.362	5	25°C	0.9845	5	u.		
(nD-d/2)	1.02310	2	30 mm	1.0000	5	Dispersion		
Dielectric			BP	0.9579	5	118.		
A -20 to	6.78781	3	t_e	0.9521	5	Flash Point °C		
B 110 °C	1115.565	3	t_c	0.250	5	Fire Point		
C	221.314	3	ΔH_c kcal/m	-8.276	3	M Spec.		
A* -20 to	1.17704	4	ΔH_f	-33.78	3	Ultra V.		
B* 90 °C	1040.9	4	ΔF_f	-9.33	3	X-Ray Dif.		
K			Viscosity centistokes			Infrared		
c			η			Solubility in +		
t _k to			20 °C	0.639	3'	Acetone		
t _x °C			25	0.589	3'	Carbon tet.		
A' to			30	0.545	3'	Benzene		
B' °C			B ^v 15 to	246.28	4	Ether		
C'			A ^v 40 °C	3.71038	4	n-Heptane		
A'* to			(B ^v) to			Ethanol		
B'* °C			(A ^v) °C			Water		
Ac 110 to	7.38842	5	c _p liq. 25 °C	0.464	3	Water in		
Bc t _c °C	1549.0	5	60	0.483	3			
Cc °C	280.4	5	c _p vap. 65 °C	0.353	3			
Cryos. A°	0.00396	3	75	0.361	3			
const. B°			c _v vap. 25					
t _e °C	70.056	5						
+ grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE:								
PURIFICATION:								
LITERATURE REFERENCES: 3 JACS 75, 1818(1953), McCullough et al.; 3' API 44 (1953)								

TABLE VIII. THIAALKANES

NAME		Pentanethiol		STRUCTURAL FORMULA	
		Amyl mercaptan		CH ₃ (CH ₂) ₄ SH	
Mole % Pur. 99.92	Ref. 3	Molecular Formula C ₅ H ₁₂ S	Molecular Weight 104.212		
		Ref.		Ref.	
F. P. °C	-75.70	3	dt/dP °C/mm		f to °C
F. P. 100%			25°C	1.2943	4
B. P. °C			BP	0.04766	4
760 mm	126.638	3	t _e	0.03556	5
100	66.295	4	30 mm	0.6660	4
30	39.69	4	ΔHm cal/g	40.21	3
10	19.505	4	ΔHv cal/g		
1	-13.787	4	25°C	94.92	5
Pressure mm 25°C	13.80	5	30 mm	93.43	5
t _e	1105.5	5	BP	80.43	5
Density g/ml 20°C	0.84209	3	t _e	79.28	5
d ^t 25	0.83763	3	t _e (d, e)	78.31	5
d ₄ 30	0.83317	4	ΔHv/T _e	20.08	5
a	0.85991	4	d 39 to	99.36	5
b	-0.03888	4	e 135 °C	0.1495	5
Ref. Index n _D 20°C	1.44692	3	d' 10 to	97.45	5
25	1.44439	3	e' 39 °C	0.1014	5
30	1.44188	4	d _c g/ml	0.2847	5
"C"	0.7031	4	v _c ml/g	3.512	5
MR (Obs.)			t _c °C	327.0	5
MR (Calc.) (nD-d/2)			P _c mm	26590.	5
Dielectric			PV/RT 25°C	1.0000	5
A 39 to	6.93311	3	30 mm	1.0000	5
B 180 °C	1369.479	3	BP	0.9607	5
C	211.314	3	t _e	0.9598	5
A* to	1.31534	5	t _c	0.26	5
B* °C	1282.76	5	ΔHc kcal/m		
K			ΔHf		
c			ΔFf		
t _k to			Viscosity centistokes		
t _x °C			η 20 °C	0.639	3'
A' 0 to	7.33940	5	25	0.602	3'
B' 39 °C	1581.0	5	30	0.569	3'
C'	230.	5	B ^v 10 to	448.0	4
A** 0 to	1.71996	5	A ^v 40 °C	Z.27753	4
B** 39 °C	1487.4	5	(B ^v)		
Ac 180 to	7.46403	5	(A ^v)		
Bc t _c °C	1816.6	5	c _p liq 25.9°C	0.2706	3
Cc	270.7	5	c _p vap. °K		
Cryos. A° const. B°	0.0541	3	c _v vap.		
t _e °C	140.776	5			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE:					
PURIFICATION:					
LITERATURE REFERENCES: 3 JACS 74, 2804(1952); 3' Private communication from Am. Pet. Inst. Res. Proj. 48A, Bureau of Mines, Laramie, Wyo.					

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TABLE IX. DITHIAALKANES

No. 1

NAME		2, 3-Dithiabutane		STRUCTURAL FORMULA	
		Methyl disulfide		CH ₃ -S-S-CH ₃	
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight		
99.97	3	C ₂ H ₆ S ₂	94.200		
F. P. °C	-84.72	3	dt/dP °C/mm		
F. P. 100%			25°C	0.6697	5
B. P. °C			BP	0.04583	4
760 mm	109.744	3	t _e	0.03610	5
100	51.60	3	30 mm	0.6441	4
30	25.89	4	ΔHm cal/g	23.32	3
10	6.36	4	ΔHv cal/g		
1	-25.9	4	25°C	97.79	5
Pressure mm 25°C	28.644	4	30 mm	97.66	5
t _e	1030.3	5	BP	85.32	5
Density g/ml 20°C	1.06250	3'	t _e	82.73	5
d ₄ ^t 25	1.05690	3'	t _e (d, e)	83.70	5
d ₄ ^c 30	1.05138	3'	ΔHv/T _e	19.78	5
a	1.08490	4	d 20 to	101.47	5
b	-0.02114	4	e 115 °C	0.1472	5
Ref. Index n _D 20°C	1.52592	3'	d'		
25	1.52298	3'	e'		
30	1.51998	3'	t _e g/ml	0.341	3 ²
"C"	0.6491	4	v _c ml/g	2.930	3 ²
MR (Obs.)	27.209	4	t _c °C	333.	3 ²
MR (Calc.)	27.656	5	P _c mm	36328.	3 ²
(n _D -d/2)	0.99467	4	PV/RT 25°C	1.0000	5
Dielectric			30 mm	1.0000	5
A 15 to	6.97792	3	BP	0.9623	5
B 180 °C	1346.342	3	t _e	0.9401	5
C	218.863	3	t _c	0.264	5
A* 20 to	1.34890	5	ΔHc kcal/m		
B* 170 °C	1265.0	5	ΔHf		
K			ΔFf		
c			Viscosity centistokes		
t _k to			η 20 °C	0.622	3'
t _x °C			25	0.587	3'
A' to			30	0.557	3'
B' °C			B ^v 15 to	426.10	4
C' °C			A ^v 40 °C	7.34052	4
A ^{1*} to			(B ^v)		
B ^{1*} °C			(A ^v)		
Ac 180 to	7.28227	5	c liq. 27.2°C	0.3713	3
Bc t _c °C	1600.0	5	p 79.1	0.3860	3
Cc °C	254.8	5	c _p vap. °K		
Cryos. A° const. B°	0.030	3'	c _v vap.		
t _e °C	120.70	5			
#S for Dithiaalkanes = 50.5					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE:					
PURIFICATION:					
LITERATURE REFERENCES: 3 JACS 72, 2424 (1950), D. W. Scott et al.; 3' Private communication from Am. Pet. Inst. Res. Proj. 48A, Bureau of Mines, Laramie, Wyo.; 3 ² Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.					

NAME		3, 4-Dithiahexane		STRUCTURAL FORMULA	
		Diethyl disulfide, Ethyl disulfide		$C_2H_5-S-S-C_2H_5$	
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight		
99.90		$C_4H_{10}S_2$	122.252		
F. P. °C	Ref.	dt/dP °C/mm	Ref.	f	to °K
-101.52	3			g	
F. P. 100%		25°C	3.8145	5	
		BP	0.05068	4	
B. P. °C		t_e	0.03627	5	
760 mm	153.985	30 mm	0.7112	4	
100	89.72	ΔH_m cal/g	18.20	4	
30	61.33	ΔH_v cal/g			
10	39.8	25°C	88.5	5	
1	3.32	30 mm	85.26	5	
		BP	73.55	5	
Pressure mm 25°C	4.280	t_e	71.58	5	
t_e	1165.3	t_e (d, e)	71.37	5	
		$\Delta H_v/T_e$	19.69	5	
Density g/ml 20°C	0.99311	d 60 to	93.01	5	
d_t 25	0.98818	e 170 °C	0.1264	5	
d_4 30	0.98332	d' 15 to	90.73	5	
		e' 60 °C	0.0892	5	
"a"	1.01281	d g/ml			
"b"	-0.03984	v_c ml/g			
Ref. Index n_D 20°C	1.50731	t_c °C			
25	1.50470	P mm			
30	1.50198	PV/RT			
"C"	0.6715	25°C	1.0000	5	
MR (Obs.)	36.650	30 mm	1.0000	5	
MR (Calc.)	36.892	BP	0.9550	5	
(nD-d/2)	1.01076	t_e	0.9424	5	
Dielectric		t_c			
A 61 to	6.96678	ΔH_c kcal/m			
B °C	1480.584	ΔH_f			
C	208.373	ΔF_f			
A* to	1.39762	Viscosity centistokes			
B* °C	1389.68	η 20 °C	0.861	3	
K		25	0.806	3	
c		30	0.757	3	
t_x to		B ^v 15 to	496.94	4	
t_x °C		A ^v 40 °C	2.24012	4	
A' 15 to	7.34989	(B ^v) to			
B' 61 °C	1695.00	(A ^v) °C			
C'	227.29	c_p liq. °K			
A'* to	1.77116	c_p vap. °K			
B'* °C	1594.95	c_v vap.			
Ac to					
Bc °C					
Cc °C					
Cryos. A' const. B'	0.038				
t_e °C	171.23				
‡ S for dithiaalkanes = 50.1		+ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: API					
PURIFICATION: API					
LITERATURE REFERENCES: 3 API Res. Proj. 48					

TABLE IX. DITHIAALKANES

No. 3

NAME		2-Methyl-3,4-dithiahexane			STRUCTURAL FORMULA	
					$\text{CH}_3\text{CH}-\text{S}-\text{S}-\text{CH}_2\text{CH}_3$ CH_3	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_5\text{H}_{12}\text{S}_2$	Molecular Weight	136.266	
F. P. °C		Ref.				Ref.
F. P. 100%						
B. P. °C						
760 mm	165.5	3		5.9761	5	f to °C
100	99.45	5		0.05202	5	g
30	70.26	4		0.0367	5	h
10	47.96	5		0.7316	4	f' to °C
1	10.65	5				g'
						h'
Pressure mm 25°C	2.636	5				m to °K
t_e	1188.0	5		82.35	5	n
				78.41	5	o
Density g/ml 20°C				67.25	5	m' to °K
d_4^{25}				65.39	5	n'
d_4^{30}				65.07	5	o'
				19.48	5	
a				86.64	5	Surface tension dynes/cm. 20°C
b				0.1172	5	30
Ref. Index n_D^{20}				84.52	5	40
25				0.0870	5	
30						Parachor [P] 20°C
"C"						30
MR (Obs.)						40
MR (Calc.) (nD-d/2)	41.510	5				Sugd. 330.2
Dielectric						5
A 70 to	6.98406	3				Exp. L. l. %/wt. u.
B 240 °C	1532.629	3		1.0000	5	Dispersion
C	208.053	3		1.0000	5	Flash Point °C
A* 70 to	1.46155	5		0.9471	5	Fire Point
B* 200 °C	1441.9	5		0.9340	5	M. Spec. Ultra V. X-Ray Dif. Infrared
K						Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
t_k to °C						
t_x						
A' 0 to	7.33100	5				
B' 70 °C	1731.8	5				
C'	225.6	5				
A' 20 to	1.79549	5				
B' 70 °C	1631.6	5				
Ac to						
Bc t_c °C						
Cc						
Cryos. A' const. B'						
t_e °C	184.0	5				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: 3						
PURIFICATION: 3						
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430, (1952), P. T. White et al.						

NAME		3, 4-Dithiaheptane			STRUCTURAL FORMULA	
Mole % Pur.		Ref.	Molecular Formula	$C_5H_{12}S_2$	Molecular Weight	$C_2H_5S-SC_3H_7$
					136.266	
F. P. °C		Ref.	dt/dP °C/mm		Ref.	f to
F. P. 100%			25°C	8.8201	5	g °K
B. P. °C			BP	0.05251	5	h
760 mm	173.7	3	t_e	0.0366	5	f' to
100	107.02	5	t_e (d, e)			g' °K
30	77.49	4	ΔH_m cal/g			h'
10	54.92	5				m to
1	17.12	5				n °K
Pressure mm 25°C	1.715	5	ΔH_v cal/g	85.73	5	o
t_e	1203.7	5	25°C	80.78	5	m' to
Density g/ml 20°C			30 mm	68.89	5	n' °K
d_4^{25}			BP	66.76	5	o'
d_4^{30}			t_e	66.50	5	
			$\Delta H_v/T_e$	19.51	5	
a			d 77 to	90.35	5	Surface tension dynes/cm. 20°C
b			e 190 °C	0.1236	5	y 30
Ref. Index $n_D^{20°C}$			d' 20 to	88.06	5	40
25			e' 77 °C	0.09430	5	Parachor [P]
30			d_c g/ml			20°C
"C"			v_c ml/g			30
MR (Obs.)			t_c °C			40
MR (Calc.) (nD-d/2)	41.510	5	P_c mm			Sugd. 330.2
Dielectric			PV/RT			5
A 77 to	7.00392	3	25°C	1.0000	5	Exp. L. l. %/wt. u.
B 250°C	1562.196	3	30 mm	1.0000	5	Dispersion
C	205.172	3	BP	0.9430	5	Flash Point °C
A* 77 to	1.48396	5	t_e	0.9280	5	Fire Point
B* 200°C	1473.35	5	t_c			M Spec. Ultra V. X-Ray Dif. Infrared
K			Viscosity centistokes η °C			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
c						
t_k to °C						
t_x to °C						
A' 0 to	7.35211	5	B ^v to °C			
B' 72 °C	1765.2	5	A ^v to °C			
C'	222.9	5	(B ^v) to °C			
A'* 20 to	1.75971	5	(A ^v) °C			
B'* 77 °C	1649.1	5	c_p liq. °K			
Ac to			c_p vap. °K			
Bc t_c -			c_v vap.			
Cc t_c -						
Cryos. A°						
consts. B°						
t_e °C	193.0	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: 3						
PURIFICATION: 3						
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.						

TABLE IX. DITHIAALKANES

No. 5

NAME		2, 5-Dimethyl-3, 4-dithiahexane			STRUCTURAL FORMULA	
iso-Propyl disulfide					$\begin{array}{c} \text{CH}_3-\text{CH}-\text{S}-\text{S}-\text{CH}-\text{CH}_3 \\ \qquad \qquad \\ \text{CH}_3 \qquad \qquad \text{CH}_3 \end{array}$	
Mole % Pur.	98.9	Ref.	Molecular Formula	$\text{C}_6\text{H}_{14}\text{S}_2$	Molecular Weight	150.292
F. P. °C			dt/dP			
F. P. 100%			°C/mm			
B. P. °C			25°C		9.7825	5
760 mm	177.2	3	BP		0.0536	4
100	109.36	5	t_e		0.03732	5
30	79.50	4	30 mm		0.7472	4
10	56.75	5				
1	18.77	5	$\Delta\text{Hm cal/g}$			
Pressure mm 25°C	1.531	5	$\Delta\text{Hv cal/g}$			
t_e	1208.2	5	25°C		78.53	5
Density g/ml 20°C			30 mm		73.42	5
d_4^{25}			BP		61.82	5
d_4^{30}			t_e		59.91	5
			t_e (d, e)		59.47	5
			$\Delta\text{Hv}/T_e$		19.14	5
a			d 79 to		82.85	5
b			e 190 °C		0.1187	5
Ref. Index			d' 20 to		82.19	5
n_D^{20}			e' 75 °C		0.1103	5
25			d_c g/ml		0.290	3
30			v_c ml/g		3.449	3
"C"			t_c °C		428.	3
MR (Obs.)			P_c mm	33087.		5
MR (Calc.) (nD-d/2)	45.288	5	PV/RT			
Dielectric			25°C		1.0000	5
A 79 to	6.91856	3	30 mm		1.0000	5
B 252 °C	1528.232	3	BP		0.938	5
C	201.350	3	t_e		0.924	5
A* to	1.44657	5	t_c		0.255	5
B* °C	1442.19	5	$\Delta\text{Hc kcal/m}$			
K			ΔHf			
c			ΔFf			
t_k to			Viscosity			
t_x °C			centistokes			
A' 0 to	7.26137	5	η			
B' 79 °C	1726.8	5				
C'	219.0	5	B^v to			
A'* to	1.77035	5	A^v °C			
B'* °C	1629.4	5	(B ^v)			
Ac 252 to	7.3307	5	(A ^v)			
Bc t_c °C	1925.41	5	c_p liq. °C			
Cc t_c °C	256.95	5	c_p vap. °K			
Cryos. A° const. B°			c_v vap.			
t_e °C	197.0	5				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: 3						
PURIFICATION: 3						
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.						

NAME		2, 2-Dimethyl-3, 4-dithiahexane tert-Butyl ethyl disulfide			STRUCTURAL FORMULA	
Mole % Pur. 99.1		Ref. 3	Molecular Formula C ₆ H ₁₄ S ₂	Molecular Weight 150.292	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_3-\text{C}-\text{S}-\text{S}-\text{CH}_2-\text{CH}_3 \\ \\ \text{CH}_3 \end{array}$	
		Ref.			Ref.	Ref.
F.P. °C			dt/dP °C/mm			f to
F.P. 100%			25°C	85.7047	5	g °K
B.P. °C			BP	0.05375	4	h
760 mm	175.66	3	t _e	0.03781	5	f' to
100	107.57	5	t _e (d, e)			g' °K
30	77.53	5	ΔHm cal/g			h'
10	53.63	5	ΔHv cal/g			m to
1	16.35	5	25°C	76.44	5	n °K
Pressure mm 25°C	1.796	5	30 mm	72.13	5	o
t _e	1192.7	5	BP	60.80	5	m' to
Density g/ml 20°C			t _e	58.89	5	n' °K
d ^t 25			t _e	58.57	5	o'
d ^d 30			ΔHv/T _e	18.89	5	
a			d 77 to	81.07	5	Surface tension dynes/cm. 20°C
b			e 190 °C	0.1154	5	y 30
Ref. Index n _D 20°C			d' 20 to	78.49	5	40
25			e' 77 °C	0.0820	5	Parachor [P]
30			d g/ml	0.289	5	20°C
"C"			v _c ml/g	3.462	3	30
MR (Obs.)			t _c °C	426.	3	40
MR (Calc.) (nD-d/2)	45.288	5	P _c mm	32964.	5	S = 50.5 Sugd. 369.2
Dielectric			PV/RT			5
A 77 to	6.94259	3	25°C	1.0000	5	Exp. L.l. %/wt. u.
B 25 °C	1551.886	3	30 mm	1.0000	5	Dispersion
C	206.411	3	BP	0.932	5	Flash Point °C
A* to	1.48157	5	t _e	0.9156	5	Fire Point
B* °C	1467.32	5	t _c	0.254	5	M Spec. Ultra V. X-Ray Dif. Infrared
K			Viscosity centistokes °C			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
c						
t _k to °C						
x						
A' 0 to	7.28692	5	B ^v to °C			
B' 77 °C	1753.6	5	A ^v °C			
C'	224.3	5	(B ^v) to °C			
A''* to °C	1.78280	5	(A ^v) °C			
B''* °C	1650.6	5	c _p liq. °K			
Ac 25 to °C	7.3615	5	c _p vap. °K			
Bc t °C	1958.99	5	c _v vap.			
Cc °C	262.94	5				
Cryos. A° const. B°						
t _e °C	195.0	5				
+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: 3						
PURIFICATION: 3						
LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430, (1952), P. T. White, et al.						

TABLE X. ORGANIC ACIDS

No. 1

NAME		Acetic acid			STRUCTURAL FORMULA		
					CH ₃ COOH		
Mole % Pur.	Ref.	Molecular Formula	C ₂ H ₄ O ₂	Molecular Weight	60.052		
F.P. °C	16.63	3 ⁴	dt/dP °C/mm				
F.P. 100%			25°C	1.0411	5	f	to °C
B.P. °C			BP	0.04364	4	g	----- °C
760 mm	117.90	4	t _e	0.03347	5	h	----- °C
100	62.06	4	30 mm	0.6288	4	f'	----- °C
30	36.02	4	ΔHm cal/g	48.12	2	g'	----- °C
10	17.0	4				h'	
1	-14.8	4	ΔHv cal/g			m	to °K
Pressure mm 25°C	15.79	5	25°C	84.96	3'	n	
t _e	1061.	5	30 mm	86.57	3'	o	
Density g/ml 20°C	1.04923	1	BP	92.56	3'	m'	to °K
t	1.04365	1	t _e (d, e)	93.34	3'	n'	
d ₄ 30	1.03818	4	ΔHv/T _e	21.28	5	o'	
a	1.07131	4	d 36 to	176.97	5	Surface tension dynes/cm. 20°C	
b	-0.00110	4	e 135 °C	0.2670	5	γ	27.42 3 ³
Ref. Index n _D 20°C	1.37160	1	d' to			30	26.34 3 ³
25	1.36965	1	e' °C			40	26.8 5
30	1.36757	4	d _c g/ml	0.3506	3'	Parachor [P]	
"C"	0.47428	4	v _c ml/g	2.852	3'	20°C	131.0 4
MR (Obs.)	12.995	4	t _c °C	321.6	3'	30	131.1 4
MR (Calc.) (nD-d/2)	13.014	5	P _c mm	43400.	3'	40	
	0.84699	4	PV/RT 25°C	1.0000	5	Sugd.	133.0 5
Dielectric	20 6.15	3 ²	30 mm	1.0000	5	Exp. L. l. %/wt. u.	
A 36 to	7.18807	4	BP	0.9495	5	Dispersion	
B 170 °C	1416.7	4	t _e	0.9473	5	Flash Point °C	
C	211.	4	t _c	0.200	4	Fire Point	
A* 36 to	1.25935	5	ΔHc kcal/m			M. Spec. Ultra V.	Yes 2
B* 170 °C	1304.0	5	ΔHf			X-Ray Dif.	
K	23.0	4	ΔFf			Infrared	6. 1
c	-0.08340	4	Viscosity centistokes η °C			Solubility in Acetone	∞
t _x to	175.0	4				Carbon tet.	∞
t _x °C	381.0	5				Benzene	∞
A' 0 to	7.80307	5	B ^v to °C			Ether	∞
B' 36 °C	1651.2	5	A ^v ----- °C			n-Heptane	∞
C'	225.	5	(B ^v)			Ethanol	∞
A'* 0 to	1.93628	5	(A ^v)			Water	∞
B'* 36 °C	1557.2	5	c _p liq. °C			Water in	∞
Ac 170 to	7.52110	4	c _p vap. °K				
Bc t _c °C	2071.3	4	c _v vap.				
Cc t _c °C	397.7	4					
Cryos. A* consts. B*							
t _e °C	129.35	5					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3' Young; 3 ² NBS 514; 3 ³ Bull. Soc. Chim. 40, 177 (1931) Hennault-Roland and Zek; 3 ⁴ JACS 56, 1664 (1934) Hovoka and Dreisbach							
<p>‡ Mx (association) 100°C to t_c = 1.55 from data. Mx = 2.1466 - 0.00506t (20°C to 100°C) Both approximately ΔHv divide calc. value. ‡ For dv or ΔHv divide value calc. from A* B* by Mx.</p>							

NAME		Propionic acid			STRUCTURAL FORMULA		
					CH ₃ CH ₂ COOH		
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₆ O ₂	Molecular Weight			
F. P. °C	-20.8						
F. P. 100%							
B. P. °C				dt/dP °C/mm			
760 mm	140.99	1		25°C	4.2452	5	f to
100	85.82	4		BP	0.04284	4	g °K
30	60.90	4		t _e	0.03123	5	h to
10	41.65	5		30 mm	0.6286	4	f' °K
1	9.0	5		ΔHm cal/g			h' to
Pressure mm 25°C				ΔHv cal/g			m to
t _e	3.343	5		25°C	168.09	5	n °K
	1127.4	5		30 mm	158.77	5	o to
Density g/ml 20°C				BP	134.97	5	m' °K
d ^t 25	0.9930	3 ²		t _e	131.48	5	n' to
d ^t 30	0.9878	4		t _e (d, e)	131.38	5	o' °K
d ^t 30	0.9826	3 ²		ΔHv/T _e	22.78	5	
a	1.0138	4		d 60 to	176.79	5	Surface tension
b	-0.00104	4		e 160 °C	0.2942	5	dynes/cm. 20°C
Ref. Index				d' 15 to	174.58	5	30
n _D 20°C	1.3869	4		e' 60 °C	0.2596	5	40
25	1.3848	3 ²					26.70
30	1.3827	4		d g/ml	0.315	3 ¹	25.71
"C"	0.5205	4		v _c ml/g	3.175	4	3 ²
MR (Obs.)	17.563	4		t _c °C	339.5	3 ¹	Parachor [P]
MR (Calc.)	17.590	5		P _c mm	40280.	3 ¹	20°C
(n _D -d/2)	0.8909	4		PV/RT			30
Dielectric				25°C	1.0000	5	40
A 60 to	7.35027	5		30 mm	1.0000	5	171.6
B 185 °C	1497.775	4		BP	0.9574	5	171.6
C	194.12	4		t _e	0.9478	5	172.0
† A* 60 to	1.58276	5		t _c	0.244	4	Sugd.
B* 160 °C	1416.0	5		ΔHc kcal/m	365.28	3 ²	Exp. L. l. %/wt.
K				ΔHf			u.
c				ΔFf			Dispersion
t _k to				Viscosity			Flash Point °C
t _x °C				centistokes			Fire Point
A' 0 to	7.71558	5		η °C			M Spec.
B' 60 °C	1690.	5					Ultra V.
C'	210.	5		B ^v to			X-Ray Dif.
A'* 10 to	1.96672	5		A ^v °C			Infrared
B'* 60 °C	1608.8	5		(B ^v) to			Solubility in +
Ac 185 to	9.02136	5		(A ^v) °C			Acetone
Bc t _c °C	3201.8	5		c _p liq. °K			Carbon tet.
Cc t _c °C	385.5	5		c _p vap. °K			Benzene
Cryos. A°				c _v vap.			Ether
consts. B°							n-Heptane
t _e °C	154.34	5					Ethanol
							Water
							Water in
† Divide by amt. assoc. to obtain correct value				+ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3 ¹ Young; 3 ² Timmermans							

TABLE X. ORGANIC ACIDS

No. 3

NAME		n-Butyric acid			STRUCTURAL FORMULA		
					CH ₃ (CH ₂) ₂ COOH		
Mole % Pur.	99.86	Ref.	1	Molecular Formula	C ₄ H ₈ O ₂	Molecular Weight	88.104
		Ref.				Ref.	
F. P. °C	-4.26	1		dt/dP °C/mm		f	to
F. P. 100%				25°C		g	°C
B. P. °C				BP	17.000	h	
760 mm	163.53	4		t _e	0.04346	f'	to
100	107.50	4		30 mm	0.03088	g'	°C
30	82.14	4		ΔHm cal/g	0.6400	h'	
10	62.51	5				m	to
1	29.1	5		ΔHv cal/g		n	°K
Pressure mm 25°C	0.7183	5		25°C	164.25	o	
t _e	1163.	5		30 mm	148.34		
Density g/ml 20°C	0.95767	1		BP	122.40	m'	to
t	0.95273	1		t _e (d, e)	118.49	n'	°K
d ₄ 30	0.94779	4		t _e	117.74	o'	
				ΔHv/T _e	22.98		
a	0.97743	4		d 82 to	174.52	Surface tension dynes/cm. 20°C	
b	-0.03988	4		e 170 °C	0.3187	26.74	3 ²
Ref. Index n _D 25°C	1.39796	1		d' 0 to	171.21	25.57	3 ²
30	1.39313	4		e' 82 °C	0.2784	40	
"C"	0.55435	4		d c g/ml	0.302	Parachor [P] 20°C	
MR (Obs.)	22.202	4		v c ml/g	3.311	30	209.2
MR (Calc.) (n _D -d/2)	22.208	5		t c °C	355.0	40	209.0
	0.91912	4		P c mm	33500.	40	211.0
Dielectric	20 2.97	3 ³				O ₂ = 55.	Sugd.
A 82 to	7.38423	4		PV/RT 25°C	1.0000	Exp. L. l. %/wt. u.	
B 210 °C	1542.6	4		30 mm	1.0000	Dispersion	
C	179.	4		BP	0.9400	Flash Point °C	
A* 82 to	1.72182	5		t _e	0.9261	Fire Point	
B* 210 °C	1474.2	5		t _c	0.249	M. Spec. Ultra V. X-Ray Dif. Infrared	
K		5		ΔHc kcal/m		Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	
c				ΔHf		∞	
t _k to				ΔFf		∞	
t _x °C				Viscosity centistokes η		∞	
A' 0 to	7.85941	5		15 °C	1.8844	∞	
B' 82 °C	1800.7	5		30	1.4610	∞	
C'	200.	5		B ^v 10 to	643.89	∞	
A'* 0 to	2.15901	5		A ^v 40 °C	Z. 04100	∞	
B'* 82 °C	1716.1	5		(B ^v)		∞	
Ac 210 to	7.81667	5		(A ^v)		∞	
Bc t _c °C	1897.3	5		c _p liq. °C		∞	
Cc t _c °C	221.4	5		c _p vap. °K		∞	
Cryos. A° const. B°				c _v vap.		∞	
t _e °C	178.18	5					

‡ assuming no association

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc by formula

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES: 3¹ Lange; 3² Timmermans; 3³ NBS 514

NAME		Isobutyric acid			STRUCTURAL FORMULA		
					(CH ₃) ₂ CHCOOH		
Mole % Pur.	Ref.	Molecular Formula	C ₄ H ₈ O ₂	Molecular Weight	88.104		
F.P. °C	-46.1	3'	dt/dP			f	to
F.P. 100%			°C/mm			g	°K
B.P. °C			25°C	9.3229	5	h	
760 mm	153.2	4	BP	0.04274	4	f'	to
100	98.06	4	t _e	0.03039	5	g'	°K
30	73.08	4	30 mm	0.6305	4	h'	
10	53.74	4	ΔHm cal/g			m	to
1	20.83	4	ΔHv cal/g			n	°K
Pressure mm 25°C	1.388	5	25°C	≠ 154.8	5	o	
t _e	1161.6	5	30 mm	142.98	5	m'	to
Density g/ml 20°C	0.96815	3'	BP	120.6	5	n'	°K
d ₄ ^t 25	0.94288	4	t _e	117.0	5	o'	
d ₄ ^t 30	0.93785	3'	t _e (d, e)	116.59	5	Surface tension dynes/cm. 20°C	
			ΔHv/T _e	23.39	5	30	25.55
a	0.98926	4	d 73 to	163.39	5	40	25.13
b	-0.021054	4	e 165 °C	0.2793	5		24.22
Ref. Index n _D 20°C			d' 15 to	161.10	5	Parachor [P] 20°C	
25			e' 73 °C	0.2479	5	30	204.6
30			d _c g/ml			40	208.1
"C"			v _c ml/g			Sugd.	205.1
MR (Obs.) MR (Calc.) (n _D -d/2)	22.208	5	t _c °C				206.0 [≠]
Dielectric	10 2.71	3 ²	P mm			Exp. L.l. %/wt. u.	
A 73 to	7.40246	4	PV/RT			Dispersion	
B 190 °C	1529.2	4	25°C	1.0000	5	Flash Point °C	
C	185.0	5	30 mm	1.0000	5	Fire Point	
A* 73 to	17.007	5	BP	0.9581	5	M Spec. Ultra V. X-Ray Dif. Infrared	
B* 170 °C	1451.0	5	t _e	0.9472	5	Solubility in +	
K			t _c	0.255	5	Acetone	
c			ΔHc kcal/m			Carbon tet.	
t _k to			ΔHf			Benzene	
x °C			ΔFF			Ether	
A' 0 to	7.86161	5	Viscosity centistokes °C			n-Heptane	
B' 73 °C	1775.4	5	η			Ethanol	
C'	205.0	5	B ^v to			Water	
A* 15 to	2.16121	5	A ^v °C			Water in	
B* 73. °C	1688,9	5	(B ^v) to				
Ac 190 to	8.23110	5	(A ^v) °C				
Bc t °C	2213.8	5	c _p liq. °K				
Cc °C	261.2	5	c _p vap. °K				
Cryos. A° const. B°			c _v vap.				
t _e °C	167.56	5					
≠ all values assuming no association				+ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: 3'							
PURIFICATION: 3'							
LITERATURE REFERENCES: 3' Timmermans; 3 ² NBS 514; 3 ³ Lange							

No. 5

NAME		n-Valeric acid		Pentanoic acid		STRUCTURAL FORMULA			
Mole % Pur. 99.83		Ref. 1	Molecular Formula $C_5H_{10}O_2$	Molecular Weight 102.130		$CH_3(CH_2)_3COOH$			
		Ref.			Ref.				
F.P. °C	-33.83	1	dt/dP °C/mm			f	to		Ref.
F.P. 100%			25°C		76.035	g	°C		
B.P. °C			BP		0.04396	h	-----		
760 mm	186.05	1	t_e		0.02960	f'	to		
100	128.99	4	30 mm		0.6599	g'	°C		
30	102.92	4	ΔH_m cal/g		27.83	h'			
10	82.7	4	ΔH_v cal/g			m	to		
1	48.1	5	25°C		162.10	n	°K		
Pressure mm 25°C	0.1406	5	30 mm		139.03	o			
t_e	1238.0	5	BP		116.43	o'			
Density g/ml 20°C	0.93914	1	t_e		112.52	m'	to		
25	0.93458	1	t_e (d, e)		111.78	n'	°K		
d_4 30	0.93002	4	$\Delta H_v/T_e$		24.12	o'			
a	0.95738	4	d 102 to	167.01	5	Surface tension dynes/cm. 20°C			
b	-0.03912	4	e 195 °C	0.2719	5	γ	27.25	1	
Ref. Index n_D 20°C	1.40846	1	d' 20 to	169.5	5	30	26.42	1	
25	1.40640	1	e' 102 °C	0.2961	5	40	25.48	1	
30	1.40200	4	d g/ml	0.352	5	Parachor [P]			
"C"	0.5792	4	v_c ml/g	2.84	5	20°C	248.5	4	
MR (Obs.)	26.853	4	t_c °C	379.0	3	30	247.8	4	
MR (Calc.)	26.826	5	P_c mm	35040.	5	40	249.2	4	
($n_D - d/2$)	0.93889	5	PV/RT 25°C	1.0000	5	$O_2 = 55$	Sugd.	5	
Dielectric	2.574	1	30 mm	1.0000	5	Exp. L.l. %/wt. u.			
A 102 to	7.57366	4	BP	0.9480	5	Dispersion			
B 250 °C	1694.37	4	t_e	0.9341	5	Flash Point °C			
C	175.0	4	t_c	0.24	5	Fire Point			
A* 20 to	1.93656	5	ΔH_c kcal/m			M. Spec. Ultra V.			
B* 102 °C	1617.64	5	ΔH_f			X-Ray Dif.			
K			ΔF_f			Infrared			
c			Viscosity centistokes			Solubility in			
t_x --- to			η 20 °C		2.3262	1	Acetone	∞	
t_x --- °C			40		1.6948	1	Carbon tet.	∞	
A' 20 to	7.90344	5	60		1.2771	1	Benzene	∞	
B' 102 °C	1882.4	5	80		1.0242	1	Ether	∞	
C'	190.0	5	B^v 25 to		604.94	4	n-Heptane	∞	
A* 20 to	2.26789	5	A^v 90 °C		2.29764	4	Ethanol	∞	
B* 102 °C	1802.00	5	(B^v) ---				Water	∞	
Ac 250 to	8.17764	5	(A^v) ---				Water in		
Bc 250 °C	2246.7	5	c_p liq. °C						
Cc t_c ---	239.4	5	c_p vap. °K						
Cryos. A° const. B°	0.02497	1	c_v vap.						
t_e °C	203.13	5							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula									
SOURCE: Dow									
PURIFICATION: Distillation									
LITERATURE REFERENCES: 3 ICT									

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

NAME		Chloropicrin		STRUCTURAL FORMULA	
				CCl ₃ NO ₂	
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight		
99.65	1	CCl ₃ NO ₂	164.389		
		Ref.		Ref.	
F.P. °C	-69.49	1	dt/dP °C/mm		f to °C
F.P. 100%	-69.32	1	25°C	0.7525	g °C
B.P. °C			BP	0.04539	h °C
760 mm	111.84	1	t _e	0.03622	f' to °C
100	54.12	4	30 mm	0.6423	g' °C
30	28.52	5	ΔHm cal/g	16.78	h' °C
10	-8.91	5			
1	-24.09	5	ΔHv cal/g		m to °K
Pressure mm 25°C	24.935	5	25°C	57.28	n °K
t _e	1011.91	5	30 mm	57.11	o °K
Density g/ml 20°C	1.65659	1	BP	48.16	m' to °K
d ₄ ²⁵	1.64756	1	t _e	47.17	n' °K
d ₄ ³⁰	1.63852	4	t _e (d, e)	47.07	n' °K
			ΔHv/T _e	19.62	o' °K
a	1.69268	4	d 28 to 130 °C	60.17	Surface tension dynes/cm. 20°C
b	-0.00179	4	d' 130 to °C	0.1074	γ 30 32.04 1
Ref. Index n _D 20°C	1.46217	1	e' to °C		40 30.69 1
25	1.45954	1	d _c g/ml		Parachor [P] 20°C 236.12 4
30	1.44639	1	v _c ml/g		30 236.18 4
"C"	0.3689	4	t _c °C		40 236.22 4
MR (Obs.)	27.289	4	P _c mm		O = 30 Sugd. 240.2 5
MR (Calc.) (n _D -d/2)	27.039	5	PV/RT 25°C	1.0000	Exp. L. l. %/wt. u.
	0.63387	4	30 mm	1.0000	Dispersion
Dielectric			BP	0.9305	Flash Point °C
A 28 to °C	7.03335	1	t _e	0.9202	Fire Point
B 176 °C	1369.70	1	t _c		M. Spec. Ultra V. X-Ray Dif. Infrared
C	218.0	1	ΔHc kcal/m		Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
A* 28 to °C	1.67964	5	ΔHf		
B* 130 °C	1296.96	5	ΔFf		
K			Viscosity centistokes η 20 °C	0.7087	
c			40	0.5595	
t _k to °C			60	0.4571	
t _x to °C			80	0.3828	
A' 0 to °C	7.48413	5	B ^v 10 to °C	471.38	
B' 28 °C	1600.965	5	A ^v 50 °C	Z.24277	
C'	238.0	5	(B ^v) 50 to °C	453.32	
A ^{1*} 0 to °C	2.04481	5	(A ^v) 90 °C	Z.29950	
B ^{1*} 28 °C	1499.51	5	c _p liq. °C		
			c _p vap. °K		
Ac ₁ to °C			c _v vap.		
Bc ₁ t _c °C					
Cc t _c °C					
Cryos. A [*] const. B [*]	0.02039	1			
t _e °C	122.03	5			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: Dow, Distillation					
PURIFICATION: Distillation					
LITERATURE REFERENCES:					

NAME		Dimethyl formamide			STRUCTURAL FORMULA		
					(CH ₃) ₂ NCHO		
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₇ ON	Molecular Weight	73.094		
99.90	1						
		Ref.			Ref.		
F. P. °C	-60.48	1	dt/dP			f	t
F. P. 100%	-60.43	1	°C/mm			g	°K
B. P. °C			25°C		5	h	
760 mm	149.56	1	BP	3.8274	4		
100	87.96	1	t _e	0.04851	5	f'	to
30	60.70	4	30 mm	0.03506	5	g'	°K
10	39.9	5		0.6834	4	h'	
1	5.	5	ΔHm cal/g	25.82	4	m	to
Pressure			ΔHv cal/g			n	°K
mm 25°C	4.064	5	25°C	155.36	5	o	
t _e	1150.	5	30 mm	147.84	5		
Density			BP	125.37	5	m'	to
g/ml 20°C	0.94873	1	t _e	121.27	5	n'	°K
d ^t 25	0.94397	1	t _e (d, e)	120.33	5	o'	
d ^t 30	0.93920	4	ΔHv/T _e	20.20	5	Surface tension	
a	0.96776	4	d 60 to	162.2	5	dynes/cm. 20°C	
b	-0.03951	4	e 150 °C	0.2529	5	γ	36.76
Ref. Index			d' 15 to	160.62	5	30	35.59
n _D 20°C	1.43047	1	e' 60 °C	0.2106	5	40	34.40
25	1.42817	1	d _c g/ml			Parachor [P]	
30	1.41719	1	v _c ml/g			20°C	170.7
"C"			t _c °C			30	167.7
MR (Obs.)	19.920	4	P _c mm			40	164.6
MR (Calc.)	19.815	5	PV/RT			Sugd.	161.6
(n _D -d/2)	0.95611	4	25°C	1.0000	5	Exp. L. l. %/wt.	
Dielectric	< 16.1	1	30 mm	1.0000	5	u.	
A 60 to	6.99608	1	BP	0.9550	5	Dispersion	
B 350 °C	1437.84	1	t _e	0.9421	5	Flash Point °C*	
C	199.83	1	t _c			Fire Point	
A* 60 to	1.22872	5	ΔHc kcal/m			M Spec.	
B* 170 °C	1357.4	5	ΔHf			Ultra V.	
K			ΔFf			X-Ray Dif.	
c			Viscosity			Infrared	
t _x to			centistokes			Solubility in +	
t _x °C			η			Acetone	
A' 15 to	7.3438	5	20 °C	0.9243	1	Carbon tet.	
B' 60 °C	1624.7	5	40	0.7386	1	Benzene	
C'	216.2	5	60	0.6110	1	Ether	
A'* 15 to	1.5551	5	80	0.5084	1	n-Heptane	
B'* 60 °C	1532.	5	B ^v 10 to	439.2	4	Ethanol	
Ac to			A ^v 80 °C	2.46786	4	Water	
Bc to			(B ^v) to			Water in	
Cc t _c °C			(A ^v) °C				
Cryos. A*	0.02106	1	c _p liq. °K				
const. B*			c _p vap. °K				
t _e °C	165.55	5	c _v vap.				
* closed cup			+ grams/100 grams solvent				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Dow							
PURIFICATION: Distillation							
LITERATURE REFERENCES: 3 Hdbk. of Dangerous Chemicals, p. 147 (1951)							

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

No. 3

NAME		Methyl chloroacetate			STRUCTURAL FORMULA		
					<chem>CH2ClCO2CH3</chem>		
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight				
99.76	1	<chem>C3H5ClO2</chem>	108.527				
		Ref.			Ref.		
F. P. °C	-32.12	1	dt/dP °C/mm			f	to
F. P. 100%	-32.02	4	25°C	2.07787	5	g	°C
B. P. °C			BP	0.04315	5	h	
760 mm	129.82	1	t _e	0.03221	5	f'	to
100	74.08	4	30 mm	0.6387	5	g'	°C
30	48.79	5	ΔHm cal/g	24.86	4	h'	
10	29.21	5				m	to
1	-4.10	5	ΔHv cal/g			n	°K
Pressure mm 25°C	7.7247	5	25°C	101.44	5	o	
t _e	1092.6	5	30 mm	99.08	5		
Density g/ml 20°C	1.23371	1	BP	86.33	5	m'	to
t 25	1.22695	1	t _e	84.48	5	n'	°K
d ₄ 30	1.22019	4	t _e (d, e)	84.39	5	o'	
			ΔHv/T _e	22.07	5	Surface tension dynes/cm. 20°C	
a	1.26071	4	d 49 to	106.76	5	30	33.90
b	-0.02135	4	e 142 °C	0.1574	5	40	32.55
Ref. Index			d' 25 to	103.91	5	Parachor [P]	
n _D 20°C	1.42179	1	e' 49 °C	0.0991	5	20°C	214.1
25	1.41965	1				30	214.6
30	1.40870	1	d _c g/ml			40	214.8
"C"	0.4545	4	v _c ml/g			Sugd.	214.2
MR (Obs.)	22.34	4	t _c °C			Exp. L. l. %/wt. u.	
MR (Calc.)	22.001	5	P _c mm			Dispersion	
(n _D -d/2)	0.80493	4	PV/RT	1.0000	5	Flash Point °C	
Dielectric			25°C	1.0000	5	Fire Point	
A 49 to	7.43362	1	BP	0.9550	5	M. Spec. Ultra V.	
B 207 °C	1565.33	1	t _e	0.9455	5	X-Ray Dif.	
C	214.	1	t _c			Infrared	
A* 49 to	1.83741	5	ΔHc kcal/m			Solubility in Acetone	
B* 152 °C	1478.9	5	ΔHf			Carbon tet.	
K			ΔFf			Benzene	
c			Viscosity centistokes			Ether	
t _k — to °C			η	0.9241	1	n-Heptane	
t _x — to °C			20 °C	0.6989	1	Ethanol	
A' 25 to	7.84161	5	40	0.5564	1	Water	
B' 49 °C	1787.1	5	60	0.4585	1	Water in	
C' 232.	232.	5	80				
A'* 25 to	2.21428	5	B ^v 10 to	556.95	4		
B'* 49 °C	1685.99	5	A ^v 50 °C	2.07616	4		
Acl 207 to	7.85239	5	(B ^v) 50 to	494.58	4		
Bc ₁ t _c °C	1937.8	5	(A ^v) 90 °C	2.26106	4		
Cc t _c —	261.	5	c _p liq. °C				
Cryos. A* const. B*	0.02338	1	c _p vap. °K				
t _e °C	142.15	5	c _v vap.				
T _R = 0.75 T _c							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Dow							
PURIFICATION: Distillation							
LITERATURE REFERENCES:							

NAME		Methyl dichloroacetate			STRUCTURAL FORMULA		
					CHCl ₂ COOCH ₃		
Mole % Pur.	Ref.	Molecular Formula	Molecular Weight				
99.85	1	C ₃ H ₄ Cl ₂ O ₂	142.976				
		Ref.			Ref.		
F.P. °C	-51.91	1	dt/dP °C/mm			f	to
F.P. 100%	-51.83	4	25°C	3.4060	5	g	°K
B.P. °C			BP	0.04526	5	h	
760 mm	142.79	1	t _e	0.03300	5	f'	to
100	84.50	4	30 mm	0.6647	5	g'	°K
30	58.15	5	ΔHm cal/g	13.66	4	h'	
10	37.79	5	ΔHv cal/g			m	to
1	3.25	5	25°C	79.14	5	n	°K
Pressure mm 25°C	4.5851	5	30 mm	76.52	5	o	
t _e	1126.5	5	BP	66.36	5	m'	to
Density g/ml 20°C	1.37741	1	t _e	64.75	5	n'	°K
d ^t 25	1.37014	1	t _e (d, e)	64.67	5	o'	
d ₄ 30	1.36287	4	ΔHv/T _e	21.52	5	Surface tension dynes/cm. 20°C	
a	1.4065	4	d 58 to	83.51	5	y	34.17
b	-0.02145	4	e 157 °C	0.1201	5		30
Ref. Index n _D 20°C	1.44293	1	d' 25 to	81.11	5		40
25	1.44054	1	e' 58 °C	0.07885	5	Parachor [P]	
50	1.42894	1	d _c g/ml			20°C	251.0
"C"	0.4263	4	v _c ml/g			30	251.4
MR (Obs.)	27.51	4	t _c °C			40	251.6
MR (Calc.) (nD-d/2)	26.878	5	P _c mm			Sugd.	251.4
	0.85422	4	PV/RT			Exp. L.l. %/wt. u.	
Dielectric	11.93	1	25°C	1.0000	5	Dispersion	
A 58 to	7.36072	1	30 mm	1.0000	5	Flash Point °C	
B 208 °C	1589.44	1	BP	0.9525	5	Fire Point	
C	212.	1	t _e	0.9415	5	M Spec. Ultra V. X-Ray Dif. Infrared	
A* 58 to	1.87541	5	t _c			Solubility in +	
B* 167 °C	1501.5	5	ΔHc kcal/m			Acetone	
K			ΔHf			Carbon tet.	
c			ΔFf			Benzene	
t _k to °C			Viscosity centistokes			Ether	
t _x °C			η			n-Heptane	
A' 25 to	7.75275	5	20 °C	1.1168	1	Ethanol	
B' 58 °C	1808.3	5	40	0.8177	1	Water	
C'	230.	5	60	0.6368	1	Water in	
A** 25 to	2.24066	5	80	0.5168	1		
B** 58 °C	1706.8	5	B ^v 10 to	621.6	4		
Ac to			A ^v 50 °C	3.92792	4		
Bc t _c -			(B ^v) 50 to	533.6	4		
Cc °C -			(A ^v) 90 °C	2.20256	4		
Cryos. A°	0.01997	1	c _p liq. °K				
consts. B°			c _p vap. °K				
t _e °C	156.87	5	c _v vap.				
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Dow							
PURIFICATION: Distillation							
LITERATURE REFERENCES:							

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

NAME		1-Amino-2-propanol			STRUCTURAL FORMULA		
		Monoisopropanolamine			CH ₃ CHCH ₂ NH ₂ OH		
Mole % Pur.	Ref.	Molecular Formula	C ₃ H ₉ NO	Molecular Weight	75.110		
		Ref.			Ref.		
F. P. °C	1.74	1	dt/dP °C/mm			f	to
F. P. 100%	1.90	1	25°C	13.290	5	g	°C
B. P. °C			BP	0.04196	4	h	
760 mm	159.46	1	t _e	0.02963	5	f'	to
100	104.44	1	30 mm	0.6559	5	g'	°C
30	79.83	5	ΔHm cal/g	39.18	4	h'	
10	59.53	4	ΔHv cal/g			m	to
1	24.08	5	25°C	177.92	5	n	°K
Pressure mm 25°C	0.9944	5	30 mm	167.57	5	o	
t _e	1159.5	5	BP	147.05	5	m'	to
Density g/ml 20°C	0.96114	1	t _e	142.76	5	n'	°K
d ⁴ 25	0.95716	1	t _e (d, e)	143.44	5	o'	
d ⁴ 30	0.95318	4	ΔHv/T _e	24.01	5	Surface tension dynes/cm. 20°C	
a	0.9771	4	d 80 to	188.14	5	30	36.35
b	-0.0380	4	e 173 °C	0.2577	5	40	35.60
Ref. Index			d' 25 to	182.64	5	40	34.82
n _D 20°C	1.44786	1	e' 80 °C	0.1888	5	Parachor [P]	
25	1.44604	1	d _c g/ml			20°C	191.8
50	1.43688	1	v _c ml/g			30	192.5
"C"	0.6173	4	t _c °C			40	193.1
MR (Obs.)	20.91	4	P _c mm			O = 15	Sugd.
MR (Calc.)	21.129	5	PV/RT			Exp. L. l. %/wt. u.	
(nD-d/2)	0.96729	4	25°C	1.0000	5	Dispersion	
Dielectric			30 mm	1.0000	5	Flash Point °C	
A 80 to	7.89864	1	BP	0.9500	5	Fire Point	
B 255 °C	1848.9	1	t _e	0.9331	5	M. Spec. Ultra V.	
C	209.	1	t _c			X-Ray Dif.	
A* 80 to	2.19953	5	ΔHc kcal/m			Infrared	
B* 183 °C	1787.7	5	ΔHf			Solubility in	
K			ΔFf			Acetone	∞
c			Viscosity centistokes			Carbon tet.	∞
t _k — to			η 20 °C	949.84	1	Benzene	∞
t _x — °C			60	110.08	1	Ether	∞
A' 25 to	8.27730	5	80	30.478	1	n-Heptane	?
B' 80 °C	2086.5	5	100	11.784	1	Ethanol	∞
C'	227.	5	B _v 10 to	2578.0	4	Water	∞
A'* 25 to	2.47287	5	A _v 110 °C	6.18502	4	Water in	∞
B'* 80 °C	1983.0	5	(B _v) —				
Acl to			(A _v) —				
Bc t _c °C			c _p liq. °C				
Cc t _c °C			c _p vap. °K				
Cryos. A°	0.01961	1	c _v vap.				
const. B°							
t _e °C	173.45	5					

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

No. 6

NAME		Methyl cyanoacetate			STRUCTURAL FORMULA		
					CNCH ₂ COOCH ₃		
Mole % Pur.	99.91	Ref. 1	Molecular Formula C ₄ H ₅ NO ₂	Molecular Weight	99.088		
		Ref.			Ref.		
F. P. °C	-13.11	1	dt/dP °C/mm			f	to
F. P. 100%	-13.07	4	25°C	85.22	5	g	°K
B. P. °C			BP	0.04898	4	h	
760 mm	205.09	1	t _e	0.03184	5	f'	to
100	141.44	4	t _e (d, e)	112.11	5	g'	°K
30	112.32	4	ΔHm cal/g	29.75	4	h'	
10	89.67	5	ΔHv cal/g			m	to
1	51.02	5	25°C	148.88	5	n	°K
Pressure mm 25°C	0.14056	4	30 mm	134.69	5	o	
t _e	1292.3	4	BP	116.24	5	m'	to
Density g/ml 20°C	1.12773	1	t _e	112.43	5	n'	°K
d ^t 25	1.12228	1	t _e (d, e)	112.11	5	o'	
d ^t 30	1.11683	4	ΔHv/T _e	22.32	5	Surface tension dynes/cm. 20°C	
a	1.14953	4	d 112 to	157.02	5	γ	42.32
b	-0.02109	4	e 226 °C	0.1988	5		30 41.16
Ref. Index			d' 25 to	152.94	5		40 39.82
n _D 20°C	1.41791	1	e' 112 °C	0.1625	5	Parachor [P]	
25	1.41662	1	d _c g/ml			20°C	224.11
30.	1.40620	1	v _c ml/g			30	224.73
"C"	0.4929	4	t _c °C			40	225.07
MR (Obs.)	22.138	4	P _c mm			O = 30	Sugd. 202.3
MR (Calc.)	22.073	5	PV/RT			Exp. L. l. %/wt.	
(n _D -d/2)	0.85404	4	25°C	0.9999	5	u.	
Dielectric	7.21	1	30 mm	1.0000	5	Dispersion	
A 112 to	7.60624	1	BP	0.9459	5	Flash Point °C	
B 300 °C	1914.22	1	t _e	0.9307	5	Fire Point	
C	200.	1	t _e			M Spec.	
A* 112 to	1.91784	5	ΔHc kcal/m			Ultra V.	
B* 230 °C	1819.44	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
c			Viscosity centistokes			Solubility in *	
t _k to			γ			Acetone	
t _x °C			20 °C	2.7931	1	Carbon tet.	
A' 25 to	7.95949	5	40	1.7642	1	Benzene	
B' 112 °C	2141.227	5	60	1.2395	1	Ether	
C'	218.0	5	80	0.9413	1	n-Heptane	
A'* 25 to	2.26414	5	B ^v 10 to	916.18	4	Ethanol	
B'* 112 °C	2038.69	5	A ^v 45 °C	3.32131	4	Water	
Ac to			(B ^v) 45 to	703.28	4	Water in	
Bc t _c °C			(A ^v) 90 °C	3.98255	4		
Cc			c _p liq. °K				
Cryos. A°	0.02195	1	c _p vap. °K				
const. B°			c _v vap.				
t _e °C	225.87	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Dow							
PURIFICATION: Distillation							
LITERATURE REFERENCES:							

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

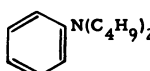
No. 7

NAME		4-Hydroxy-3-methyl-2-butanone 2-Methyl-3-ketobutanol			STRUCTURAL FORMULA CH_3 $\text{CH}_3\text{C}(\text{CH}_3)\text{CH}_2\text{OH}$ O		
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_5\text{H}_{10}\text{O}_2$	Molecular Weight	102.130		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	64.35	5	g	°C
B. P. °C			BP	0.04151	5	h	
760 mm	183.02	1	t_e	0.02777	5	f'	to
100	128.09	4	30 mm	0.6594	5	g'	°C
30	102.27	5	ΔHm cal/g			h'	
10	81.90	5				m	to
1	46.52	5	ΔHv cal/g			n	*K
Pressure mm 25°C	0.1787	5	25°C	150.45	5	o	
t_e	1230.6	5	30 mm	138.66	5		
Density g/ml 20°C	0.98765	1	BP	121.42	5	m'	to
d_{25}^t	0.98351	1	t_e	118.24	5	n'	*K
d_4^{30}	0.97937	4	t_e (d, e)	118.04	5	o'	
			$\Delta\text{Hv}/T_e$	25.58	5	Surface tension dynes/cm. 20°C	
a	1.00421	4	d 102 to	160.50	5	30	35.08
b	-0.03828	4	e 192 °C	0.2135	5	40	34.14
Ref. Index			d' 25 to	154.27	5		33.23
n_D^{20}	1.43386	1	e' 102 °C	0.1526	5	Parachor [P]	
25	1.43204	1	d_c g/ml			20°C	251.7
30	1.42281	1	v_c ml/g			30	252.1
"C"	0.5830	4	t_c °C			40	252.5
MR (Obs.)	26.92	4	P_c mm			O = 20	Sugd. 235.0
MR (Calc.)	26.826	5	PV/RT			Exp. L. l. %/wt.	
(nD-d/2)	0.94003	4	25°C	1.0000	5	u.	
Dielectric	0.721	1	30 mm	1.0000	5	Dispersion	
A 102 to	8.22274	1	BF	0.9490	5	Flash Point °C	
B 255 °C	2072.75	1	t_e	0.9370	5	Fire Point	
C	205.	1	t_c			M. Spec.	
A* 102 to	2.56483	5	ΔHc kcal/m			Ultra V.	
B* 209 °C	1981.3	5	ΔHf			X-Ray Dif.	
K			ΔFf			Infrared	
t_k to			Viscosity centistokes			Solubility in	
t_x °C			η			Acetone	
A' 25 to	8.61790	5	20 °C	5.1542	1	Carbon tet.	
B' 102 °C	2322.7	5	40	3.0392	1	Benzene	
C'	223.	5	60	1.9954	1	Ether	
A'* 25 to	2.93736	5	80	1.4219	1	n-Heptane	
B'* 102 °C	2218.6	5	B ^v 30 to	912.3	4	Ethanol	
			A ^v 90 °C	3.56992	4	Water	
Acl to			(B ^v)			Water in	
Bc t_c °C			(A ^v)				
Cc t_c °C			c _p liq. °C				
Cryos. A* const. B'			c _p vap. °K				
t_e °C	198.84	5	c _v vap.				
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: Dow							
PURIFICATION: Distillation							
LITERATURE REFERENCES:							

NAME		2-Methyl-1,3-butanediol			STRUCTURAL FORMULA			
					CH ₃ CHOHCH ₂ OH			
Mole % Pur.		Ref.	Molecular Formula C ₅ H ₁₂ O ₂	Molecular Weight	104.146			
					CH ₃			
		Ref.			Ref.	Ref.		
F. P. °C			dt/dP °C/mm			f	to	
F. P. 100%			25°C	332.601	5	g	*K	
B. P. °C			BP	0.04388	4	h		
760 mm	211.68	1	t _e	0.02790	5	f'	to	
100	153.58	1	t _e (d, e)		5	g'	*K	
30	126.27	4	ΔHv/T _e		5	h'		
10	104.73	5	ΔHm cal/g			m	to	
1	67.32	5	ΔHv cal/g			n	*K	
Pressure mm 25°C	0.03131	5	25°C	162.94	5	o		
t _e	1308.37	5	30 mm	126.27	4	m'	to	
Density g/ml 20°C	0.98922	1	BP	126.94	5	n'	*K	
d ^t 25	0.98545	1	t _e	123.15	5	o'		
d ₄ 30	0.98168	4	t _e (d, e)	122.86	5	Surface tension dynes/cm. 20°C		
a	1.00430	4	d 126 to	172.91	5	30	42.75	
b	-0.03754	4	e 231 °C	0.2170	5	40	41.46	
Ref. Index n _D 20°C	1.44707	1	d' 25 to	167.24	5	40	40.20	
25	1.44532	1	e' 126 °C	0.1721	5	Parachor [P]		
30	1.43670	1	d _c g/ml			20°C	255.95	
"C"	0.5988	4	t _c ml/g	474.7	5	30	256.20	
MR (Obs.)	28.133	4	t _c °C	99535.	5	40	256.51	
MR (Calc.) (nD-d/2)	28.34	5	P _c mm			Sugd.	259.2	
	0.95246	4	PV/RT			Exp. L. l. %/wt. u.		
Dielectric	721.	1	25°C	0.9998	5	Dispersion		
A 126 to	8.22772	1	30 mm	1.0000	5	Flash Point °C		
B 288 °C	2195.80	1	BP	0.9470	5	Fire Point		
C	199.0	1	t _e	0.9334	5	M Spec. Ultra V. X-Ray Dif. Infrared		
A* 126 to	2.55727	5	t _c			Solubility in +		
B* 241 °C	2100.92	5	ΔHc kcal/m			Acetone		
K			ΔHf			Carbon tet.		
c			ΔFf			Benzene		
t _x to °C			Viscosity centistokes			Ether		
A' 25 to	8.60128	5	γ 20 °C	401.22	1	n-Heptane		
B' 126 °C	2445.55	5	40	81.2830	1	Ethanol		
C'	217.0	5	60	23.9810	1	Water		
A'* 25 to	2.91925	5	80	9.4381	1	Water in		
B'* 126 °C	2341.44	5	B ^v 10 to	2383.45	4			
			A ^v 50 °C	5.22787	4			
Ac to			(B ^v) 50 to	3183.68	4			
Bc t _c °C			(A ^v) 90 °C	7.74500	4			
Cc			c _p liq. °K					
Cryos. A°			c _p vap. °K					
const. B°			c _v vap.					
t _e °C	230.62	5						+ grams/100 grams solvent
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: Dow								
PURIFICATION: Distillation								
LITERATURE REFERENCES:								

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

NAME		cis-1-Cyano-1,3-Butadiene			STRUCTURAL FORMULA		
Mole % Pur. 99.80		Ref. 3	Molecular Formula C ₅ H ₅ N	Molecular Weight 79.098	CH=CHCH=CH ₂ CN		
		Ref.					Ref.
F. P. °C			dt/dP °C/mm		f	to	
F. P. 100%	-62.58	3	25°C	1.9478	g	°C	
B. P. °C			BP	0.04635	h	-----	
760 mm	134.6	3	t _e	0.0341	f'	to	
100	74.9	3	30 mm	0.6818	g'	°C	
30	47.85	4	ΔHm cal/g	38.41 [±] 3	h'		
10	27.0	5			m	to	
1	-8.5	5	ΔHv cal/g		n	°K	
Pressure mm 25°C	8.940	5	25°C	128.29	o		
t _e	1114.	5	30 mm	126.59			
Density g/ml 20°C	0.8621	4	BP	113.44	m'	to	
t	0.8578	3	t _e	111.20	n'	°K	
d ₄ 30	0.8535	4	t _e (d, e)	111.32	o'		
			ΔHv/T _e	20.85			
a	0.8793	5	d 50 to	133.84	Surface tension dynes/cm. 20°C		
b	-0.0386	5	e 150 °C	0.1516	δ	11.81	5
Ref. Index			d' 25 to	130.14		30	5
n _D 20°C	1.4860	4	e' 50 °C	0.0743		40	5
25	1.4835	3			Parachor [P]		
30	1.4810	4	d _c g/ml		20°C		
"C"	0.7431	4	v _c ml/g	372.9	30		
MR (Obs.)	26.342	4	t _c °C		40		
MR (Calc.)	25.376	5	P _c mm	48651.	Sugd.	170.1	5
(n _D -d/2)	0.0550	4			Exp. L. l. %/wt. u.		
Dielectric			PV/RT 25°C	1.0000	Dispersion		
A 50 to	7.376	3	30 mm	1.0000	Flash Point °C		
B 210 °C	1639.	3	BP	0.9596	Fire Point		
C	230.	3	t _e	0.9493	M. Spec.		
A* 50 to	1.6121	5	t _c		Ultra V.		
B* 160 °C	1539.	5	ΔHc kcal/m		X-Ray Dif.		
K			ΔHf		Infrared		
t _k --- to			ΔFf		Solubility in		
t _x --- to			Viscosity centistokes η		Acetone		
A' 25 to	7.748	5			Carbon tet.		
B' 50 °C	1852.	5			Benzene		
C'	248.	5			Ether		
A'* 25 to	1.962	5	B ^v --- to		n-Heptane		
B'* 50 °C	1739.	5	A ^v --- °C		Ethanol		
Ac 210 to	7.821	5	(B ^v) ---		Water		
Bc t _c °C	2056.	5	(A ^v) ---		Water in		
Cc	283.	5	c _p liq. °C				
Cryos. A°	0.0034	3	c _p vap. °K				
const. B°		5	c _v vap.				
t _e °C	148.6	5					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: 3							
PURIFICATION: 3							
LITERATURE REFERENCES: 3 JACS 75 (1954)							

NAME		N, N-Dibutylaniline			STRUCTURAL FORMULA	
						
Mole % Pur. 100.0	Ref. 1	Molecular Formula	C ₁₄ H ₂₃ N	Molecular Weight	205.332	
F. P. °C	-32.20	1	dt/dP			Ref.
F. P. 100%	-32.20	1	°C/mm			
B. P. °C			25°C	2004.51	5	f
760 mm	274.75	4	BP	0.05848	1	g
100	199.33	5	t _e	0.03465	5	h
30	165.18	4	30 mm	0.8619	4	f'
10	138.79	5				g'
1	94.04	5				h'
Pressure mm 25°C			ΔHm cal/g	19.00	4	m
t _e	0.005012	5	25°C	85.65	5	n
	1460.7	5	30 mm	71.93	4	o
Density g/ml 20°C			BP	60.38	5	m'
d ₄ ²⁵	0.90368	1	t _e	57.33	5	n'
d ₄ ³⁰	0.89995	1	t _e (d, e)	57.11	5	o'
	0.89622	4	ΔHv/T _e	20.33	5	
a	0.91860	4	d 165 to	89.34	5	Surface tension
b	-0.03746	4	e 305 °C	0.1054	5	dynes/cm. 20°C
Ref. Index n _D 20°C			d' 25 to	88.10	5	30
25	1.51856	1	e' 165 °C	0.0979	5	40
30	1.51632	1				31.88
	1.50543	1				31.11
"C"	0.7533	4				30.19
MR (Obs.)	68.915	4	d c g/ml			Parachor [P]
MR (Calc.) (nD-d/2)	68.711	5	v c ml/g			20°C
Dielectric	4.349	1	t c °C			30
A 165 to	7.39225	5	P c mm			40
B 380 °C	2083.2	5	PV/RT	1.0000	5	Sugd.
C	187.	5	25°C	1.0000	5	539.9
A* 165 to	1.99271	5	30 mm	0.9301	5	541.1
B* 315 °C	1986.3	5	BP	0.9069	5	541.5
K			t _e			548.7
t _k to °C			t _c			Exp. L. l. %/wt. u.
A' 25 to	7.72816	5	ΔHc kcal/m			Dispersion
B' 65 °C	2326.5	5	ΔHf			Flash Point °C
C'	207.	5	ΔFf			Fire Point
A'*	2.32690	5	Viscosity centistokes			M. Spec. Ultra V. X-Ray Dif. Infrared
B'*	2223.4	5	η			Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in
Ac to			20 °C	6.7988	1	
Bc t _e °C			40	3.5630	1	
Cc t _e °C			60	2.2214	1	
Cryos. A° const. B°	0.03383	1	80	1.5450	1	
t _e °C	305.75	5	B ^v 10 to	1288.5	4	
			A ^v 50 °C	4.43794	4	
			(B ^v) 50 to	927.9	4	
			(A ^v) 90 °C	3.56165	4	
			c _p liq. °C			
			c _p vap. °K			
			c _v vap.			

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

No. 11

NAME		Methyl isopropenyl ketone dimer		3-Methyl-3-buten-2-one dimer		STRUCTURAL FORMULA	
						$\text{H}_2\text{C} \quad \text{C}(\text{CH}_3)\text{COCH}_3$ $\text{CH}_3\text{CO C}(\text{CH}_3)\text{CH}_2$	
Mole % Pur.	Ref.	Molecular Formula	$\text{C}_{10}\text{H}_{16}\text{O}_2$	Molecular Weight	168.228		
		Ref.			Ref.		
F. P. °C			dt/dP °C/mm			f	to
F. P. 100%			25°C	25.3442	5	g	°C
B. P. °C			BP	0.05571	5	h	
760 mm	199.0	4	t_e	0.03690	5	f'	to
100	128.39	4	30 mm	0.7806	4	g'	°C
30	97.22	4				h'	
10	73.43	5	ΔHm cal/g			m	to
1	33.64	5	25°C	75.48	5	n	°K
Pressure mm 25°C	0.5491	5	30 mm	69.21	5	o	
t_e	1288.59	5	BP	58.79	5	m'	to
Density g/ml 20°C	0.9753	1	t_e	56.51	5	n'	°K
25	0.9707	1	t_e (d, e)	56.37	5	o'	
d ^t 25	0.9707	1	$\Delta\text{Hv}/T_e$	19.17	5	Surface tension dynes/cm. 20°C	
d ⁴ 30	0.9662	4				30	29.84
a	0.9935	4	d 97 to	79.17	5	40	28.80
b	-0.0391	4	e 223 °C	0.1024	5		27.80
Ref. Index			d' 25 to	77.65	5	Parachor [P]	
n_D 20°C	1.45976	1	e' 97 °C	0.0867	5	20°C	403.16
25	1.45756	1				30	403.37
30	1.45523	4	d c g/ml			40	403.62
"C"	0.6235	4	v_c ml/g			O = 18	404.0
MR (Obs.)	47.223	4	t_c °C			Exp. L. l. %/wt.	
MR (Calc.)	46.202	5	P_c mm			u.	
(nD-d/2)	0.97213	4	PV/RT	1.0000	5	Dispersion	
Dielectric	5.30	1	25°C	1.0000	5	Flash Point °C	
A 97 to	6.95237	1	30 mm	0.9505	5	Fire Point	
B 290 °C	1616.40	1	BP	0.9340	5	M. Spec.	
C	198.	1	t_e			Ultra V.	
A* 97 to	1.48934	5	t_c			X-Ray Dif.	
B* 240 °C	1520.36	5	ΔHc kcal/m			Infrared	
K			ΔHf			Solubility in	
c			ΔFf			Acetone	
t_k to			Viscosity			Carbon tet.	
t_x °C			centistokes			Benzene	
A' 25 to	7.32330	5	η			Ether	
B' 97 °C	1842.83	5				n-Heptane	
C'	218.	5				Ethanol	
A'*	25 to	1.86868	B ^v to			Water	
B'*	97 °C	1742.93	A ^v °C			Water in	
Ac to			(B ^v)				
Bc t_c °C			(A ^v)				
Cc t_c °C			c _p liq. °C				
Cryos. A ^v const. B ^v			c _p vap. °K				
t_e °C	222.69	5	c _v vap.				

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

No. 1

NAME		Air			STRUCTURAL FORMULA-3'		
					N ₂ Wt.	75.50	Vol. 78.06
					O ₂	23.15	20.99
Mole % Pur.		Ref.	Molecular Formula	See struct. formula	Molecular Weight	28.97-3 ³	
					A	1.292	0.9323
					CO ₂	0.05	0.03
					Ne	0.0014	0.0018
					Kr	0.0001	0.0003
F. P. °C		Ref.	dt/dP °C/mm		f	to	
F. P. 100%			25°C		g	to °K	
B. P. °C			BP		h		
760 mm		-195.	t _e		f'	to	
100			30 mm		g'	to °K	
30			ΔHm cal/g		h'		
10					m	to	
1			ΔHv cal/g		n	to °K	
Pressure mm			25°C		o		
25°C			30 mm		m' to		
t _e			BP		n' to °K		
Density g/ml		≠	t _e (d, e)		o'		
20°C			ΔHv/T _e		Surface tension dynes/cm. 20°C		
d ₄ ²⁵					γ -190.3 # 11.61 34		
30					40		
a			d to		Parachor [P] 20°C		
b			e to °C		30		
Ref. Index n _D		1.03293	e' to °C		40		
25°C					Sugd.		
30			d _c g/ml		0.35	3	
"C"			v _c ml/g		2.857	4	
MR (Obs.)			t _c °C		-140.7	3	
MR (Calc.) (nD-d/2)			P _c mm		28272.	3	
Dielectric			PV/RT 25°C		Exp. L. l. %/wt. u.		
A to			30 mm		Dispersion		
B to °C			BP		Flash Point °C		
C			t _e		Fire Point		
A* to			ΔHc kcal/m		M Spec. Ultra V.		
B* to °C			ΔHf		X-Ray Dif.		
K to °C			ΔFf		Infrared		
c			Viscosity centistokes		Solubility in +		
t _k to			η _{poise} 20°C		180.8x10 ⁻⁶	32	
t _x to °C					Acetone		
A' to			B ^v to		Carbon tet.		
B' to °C			A ^v to °C		Benzene		
C'			(A ^v) to °C		Ether		
A* to					n-Heptane		
B* to °C					Ethanol		
Ac to					Water		
Bc to °C					Water in		
Cc to °C					0.367 3'		
Cryos. A°			c _p liq. °K		Density of vapor		
const. B°			c _p vap. °K		20°C		
t _e °C					25		
					0.0012046 3'		
					0.0011843 3'		
					0.001165 3'		
[‡] Density liquid at BP = 0.86 + 0.00289x (where x = % oxygen)-34 ⁺ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3 Perry's Hdbk. 3rd Ed., p. 204; 3' Lange's Hdbk. 8th Ed., p. 1445; 3 ² ICT; 3 ³ J. Applied Mech. A10, 123, Keenan and Kaye; 3 ⁴ Treat. Inorg. & Theoret. Chem. v. 8, J. W. Mellor							
[#] 49.9% oxygen, d _v air = 0.001293 g/ml 0°C and 760 mm.							

NAME		Ammonia			STRUCTURAL FORMULA			
					N=H ₃			
Mole % Pur.	99.99	Ref.	Molecular Formula	NH ₃	Molecular Weight	17.032		
		Ref.				Ref.		
F. P. °C	-77.7	3 ³	dt/dP °C/mm			f to °C		
F. P. 100%			25°C	0.00425	4	g		
B. P. °C			BP	0.02623	4	h		
760 mm	-33.34	3	t _e	0.03016	5	f' to °C		
100	-67.37	4	30 mm	0.3930	4	g'		
30	-82.90	5	ΔHm cal/g			h'		
10	-94.91	5	ΔHv cal/g			m to °K		
1			25°C	284.68	4	n		
Pressure mm 25°C	7589.	4	30 mm	358.38	5	o		
t _e	640.4	5	BP	326.44	4	m' to °K		
Density g/ml-20°C	0.6650	3 ²	t _e	328.66	4	n'		
d ^t -25	0.6700	4	t _e (d, e)	328.60	5	o'		
d ₄ -30	0.6777	3 ²	ΔHv/T _e	23.67	4	Surface tension dynes/cm.-20°C		
a	0.6420	3 ²	d -83 to °C	304.94	4	γ	38.88	5
b	-0.00121	4	e 20	0.6446	4	-30	41.29	5
Ref. Index n _D 20°C			d' -15 to °C	301.2	4	-40	44.55	5
25			e' +30	0.8700	4	Parachor [P] 20°C		
30			d _c g/ml	0.235	3 ³	30		
"C"			v _c ml/g	4.255	3 ³	40		
MR (Obs.)			t _c °C	132.4	3 ³	Sugd.	63.8	5
MR (Calc.) (n _D -d/2)			P _c mm	84740.	3 ³	Exp. L. l. %/wt. u. Dispersion		
Dielectric			PV/RT 25°C	0.8850	4	Flash Point °C		
A -83 to °C	7.55466	4	30 mm	1.0000	5	Fire Point		
B 60 °C	1002.711	4	BP	0.9701	4	M. Spec. Ultra V. X-Ray Dif. Infrared		
C	247.885	4	t _e	0.9732	5	Solubility in ⁺		
A* -83 to °C	1.33296	5	t _c	0.216	4	Acetone		
B* 80 °C	940.24	5	ΔHc kcal/m			Carbon tet.		
K	10.01	4	ΔHf			Benzene		
c	-0.05883	4	ΔFf			Ether		
t _k to °C	8.0	4	Viscosity centistokes η °C			n-Heptane		
t _x °C	175.0	5				Ethanol		
A' to °C						Water	47.15	3 ¹
B' °C						Water in		
A'* to °C								
B'* to °C								
Ac 70 to °C	8.70513	4						
Bc t _c °C	1930.07	4						
Cc	378.6	4						
Cryos. A° const. B°								
t _e °C	-36.70	5						
							+ grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE:								
PURIFICATION:								
LITERATURE REFERENCES: 3 Sci. Papers Bur. Stand. 16, 37(1920) P. G. Agnew; 3 ¹ Lange's Hdbk. 8th ed., p. 1081; 3 ² Sci. Papers Bur. Stand. 17, 287(1922) Crazoe and Harper; 3 ³ Sci. Papers Bur. Stand. 18, 689(1923) McKelsey and Taylor; 3 ⁴ Sci. Papers Bur. Stand. 14, 339 (1918) Osborne and Van Dusen.								

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 3

NAME	Bromine				STRUCTURAL FORMULA			
					Br-Br			
Mole % Pur. 99.81	Ref. 1	Molecular Formula Br ₂	Molecular Weight 159.832					
		Ref.			Ref.	Ref.		
F.P. °C	-7.42	1	dt/dP °C/mm			f	to	
F.P. 100%	-7.27	1	25°C	0.1093	5	g	°C	
B.P. °C			BP	0.0402	4	h		
760 mm	58.72	1	t _e	0.035	5	f'	to	
100	7.79	4	30 mm	0.5633		g'	°C	
30	-14.4	4	ΔHm cal/g			h'		
10	-31.8	4	ΔHv cal/g			m	to	
1	-58.5	5	25°C	46.22	5	n	°K	
Pressure mm	217.4	5	30 mm	49.29	5	o		
t _e	907.1	5	BP	43.51	5	m'	to	
Density g/ml	3.11870	1	t _e	42.98	5	n'	°K	
25°C	3.10171	1	t _e (d, e)	43.14	5	o'		
t	3.08466	4	ΔHv/T _e	20.36	5	Surface tension dynes/cm. 20°C		
d ₄	3.08466	4				30	49.49	5
a	3.18690	4	d -20 to	48.19	5	40	47.32	5
b	-0.00333	4	e -65 °C	0.0787	5		45.19	5
Ref. Index			d'			Parachor [F]		
n _D	1.6083	5	e'			20°C		
20°C						30		
25			d _c g/ml			40		
30			v _c ml/g			Sugd.	136.0	5
"C"	0.2533	4	t _c °C			Exp. L. l. %/wt. u.		
MR (Obs.)			P _c mm			Dispersion		
MR (Calc.)	17.730	5	PV/RT	0.9940	5	Flash Point °C		
(nD-d/2)	0.0490	5	25°C	1.0000	5	Fire Point		
Dielectric	3.334 [‡]	3 [‡]	30 mm	0.9721	5	M. Spec. Ultra V.		
A -20 to	6.95897	1	BP	0.9662	5	X-Ray Dif.		
B 160 °C	1169.3	1	t _e	0.2880	5	Infrared		
C	228.0	5	t _c			Solubility in Acetone		
A* -20 to	1.58237	5	ΔHc kcal/m			Carbon tet.		
B* 80 °C	1090.0	5	ΔHf			Benzene		
K			ΔFf			Ether		
c			Viscosity centistokes			n-Heptane		
t _k to			η	0.3143	1	Ethanol		
t _x °C			20 °C	0.2876	1	Water 0°C		
A' to			30	0.2643	1	Water in		
B' °C			40	0.2446	1			
C' °C			50					
A'* to			B ^v 25 to	344.60	4			
B'* °C			A ^v 60 °C	2.3223	4			
Ac to			(B ^v)					
Bc °C			(A ^v)					
Cc °C			c _p liq. °C					
Cryos. A°	0.01257	1	c _p vap. °K					
const. B°			c _v vap.					
t _e °C	64.23	5						
T _R = 0.75 T _c		≠ at 53.8°C	grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: Lit. Ref.								
PURIFICATION:								
LITERATURE REFERENCES: 3 Lange's Hdbk.; 3 ¹ Chem. Rev. 52, 117 (1953) Kohe and Lynn; 3 ² T. Physik 66, 657 (1930) D. Doborzynski								

NAME		Carbon bisulfide		STRUCTURAL FORMULA	
		Carbon disulfide		S=C=S	
Mole % Pur.	Ref.	Molecular Formula	CS ₂	Molecular Weight	76.142
F. P. °C	-111.53	3 ²	dt/dP °C/mm		
F. P. 100%			25°C	0.07314	4
B. P. °C	46.25	3 ¹	BP	0.040664	4
760 mm	-5.09	4	t _e	0.03692	5
100	-27.60	4	30 mm	0.5626	4
30	-44.63	4	ΔHm cal/g	13.802	3 ²
10	-72.63	4	ΔHv cal/g		
1			25°C	85.66	5
Pressure mm	361.6	4	30 mm	93.26	5
t _e	860.7	5	BP	82.68	5
Density g/ml	1.2632	3 ¹	t _e	81.84	5
15°C	1.2585	3 ¹	t _e (d, e)	82.13	5
d ₄ ^t 25	1.2500	4	ΔHv/T _e	19.27	5
d ₄ ^t 30			d -20 to	89.31	5
a	1.2746	4	e 50 °C	0.1433	5
b	-0.00076	4	d' to		
Ref. Index n _D	1.6319	3 ²	e' °C		
25	1.62794	4	d c g/ml	0.3679	3 ¹
30			v c ml/g	2.718	4
"C"	0.6479	4	t _c °C	273.0	3 ¹
MR (Obs.)	21.492	4	P _c mm	57760.	3 ¹
MR (Calc.)	21.264	5	PV/RT		
(nD-d/2)	1.0003	4	25°C	0.9773	5
Dielectric	2.6246	3 ¹	30 mm	1.0000	5
A -10 to	6.85145	4	BP	0.9600	5
B 160 °C	1122.50	4	t _e	0.9567	5
C	236.46	4	t _c	0.3475	5
A* -30 to	1.17800	4	ΔHc kcal/m		
B* 220 °C	1045.22	4	ΔHf		
K	47.64	4	ΔFf		
c	0.23628	4	Viscosity centistokes		
t _k to	125.0	4	η 0 °C	0.3453	3 ²
t _x °C	327.	5	15	0.3032	3 ²
A' to			20	0.2916	3 ²
B' °C			35	0.2660	3 ²
C' °C			B ^v to		
A** to °C			A ^v °C		
B** to °C			(B ^v)		
Ac 160 to	7.16623	4	(A ^v)		
Bc t _c °C	1341.93	4	c liq.		
Cc °C	266.54	4	p -24.27°C	0.2387	3 ²
Cryos. A° const.			c _p vap. °K		
B° const.			c _v vap.		
t _e °C	50.14	5			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE:					
PURIFICATION:					
LITERATURE REFERENCES: 3 ¹ Lange's Hdbk. ; 3 ² Timmermans; 3 ³ Product Data Index No. 25304 J. T. Baker Chem. Co.					

No. 5

NAME		Carbon dioxide				STRUCTURAL FORMULA				
						O=C=O				
Mole % Pur.	Ref. 3	Molecular Formula	CO ₂	Molecular Weight	44.01					
		Ref.			Ref.	Ref.				
F.P. °C	-56.6	3 ²	dt/dP			f		to		
F.P. 100%			°C/mm			g		°C		
B.P. °C			-121.5°C		1.0380	4	h			
760 mm	-78.48	3 ¹	BP		0.01642	4				
100	-100.16	4	t _e		0.02286	5	f'		to	
30			30 mm				g'		°C	
10	-118.31	4	ΔHm cal/g				h'			
1	-142.01	4					m		to	
Pressure mm 25°C	6.164	4	ΔHv cal/g		156.5	5	n		°K	
t _e	512.0	5	-121.5°C		1.0000	5	o			
Density g/ml-10°C	0.9810	3 ²	30 mm		132.4	5				
d _t -20	1.0310	3 ²	BP		134.6	5	m'		to	
d ₄ -30	1.0750	3 ²	t _e (d, e)				n'		°K	
			ΔHv/T _e		31.18	5	o'			
a	1.0269	4	d				Surface tension dynes/cm. 20°C			
b	-0.0035	4	e				30			
Ref. Index			d'				40			
n _D 20°C			e'				Parachor [F]			
25			d _c g/ml		0.4587	3 ¹	20°C			
30			v _c ml/g		2.1800	3 ¹	30			
"C"			t _c °C		30.96	3 ¹	40			
MR (Obs.)			P _c mm		55427.	3 ¹	Sugd.			91.2 5
MR (Calc.) (n _D -d/2)	7.075	5	PV/RT		156.5	5	Exp. L. l. %/wt. u.			
Dielectric			-121.5°C				Dispersion			
A	8.15406	4	30 mm		0.9650	5	Flash Point °C			None 1
B	799.02	4	BP		0.9366	5	Fire Point			None 1
C	230.0	4	t _e		0.2803	4	M. Spec. Ultra V. X-Ray Dif. Infrared			
A*	-83 to	5	ΔHc kcal/m		336.0	3 ³	Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in			
B*	-110 °C	5	ΔHf							
K	-10.72	4	ΔFf							
c	0.	4	Viscosity centistokes							
t _k	-40.0	5	η							
t _x	61.4	5								
A'	to		B ^v							
B'	°C		A ^v							
C'			(B ^v)							
A*	to		(A ^v)							
B*	°C		c _p liq. °C							
Ac	-56 to	4	c _p vap. °K							
Bc	860.36	4	c _v vap.							
Cc	273.0	4								
Cryos. A° const. B°										
t _e °C	-83.25	5								

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE:

PURIFICATION:

LITERATURE REFERENCES: 3¹ Timmermans; 3² Lange; 3³ Glasstone, Textbook of Phys. Chem. (1946), p. 590.

NAME		Carbon monoxide			STRUCTURAL FORMULA		
					$\text{C}\equiv\text{O}^{\dagger}$		
Mole % Pur.	Ref.	Molecular Formula	CO	Molecular Weight	28.01		
		Ref.			Ref.		
F. P. °C	-205.06	2	dt/dP			f	to
F. P. 100%			°C/mm			g	°K
B. P. °C			25°C			h	
760 mm	-191.47	3	BP	0.01166	4	f'	to
100	-205.7	4	t _e	0.03253	5	g'	°K
30	-211.655	4	30 mm	0.1458	4	h'	
10			ΔHm cal/g	7.175	3 ²	m	to
1			ΔHv cal/g			n	°K
Pressure mm 25°C			25°C			o	
t _e	197.60	5	30 mm	61.44	5	m'	to
Density g/ml			BP	51.557	3	n'	°K
-141.73	0.42200	3	t _e	56.02	5	o'	
d ^t -165.50	0.66168	3	t _e (d, e)	56.11	5	Surface tension dynes/cm. 20°C	
d ₄ -190.86	0.79086	3	ΔHv/T _e	21.92	5	-165.50	
a -178.73 to [†]	0.72342	4	d	42.19	5	40	
b -172.18	-0.00353	4	e	0.4896	5	4.484	
Ref. Index			d'			40	
n _D 20°C			e'			3 ³	
25			d	0.3010	3	Parachor [P]	
30			v _c	3.322	3	20°C	
"C"			t _c	-140.21	3	30	
MR (Obs.)			P _c mm	26242.	3	40	
MR (Calc.)	4.629	5	PV/RT			Sugd. 61.6	
(n _D -d/2)			25°C			Exp. L. l. %/wt.	
Dielectric			30 mm	1.0000	5	u.	
A -210 to	6.24020	4	BP	0.9637	4	Dispersion	
B -165°C	230.274	4	t _e	0.9922	5	Flash Point °C	
C	260.0	4	t _c	0.2944	3	Fire Point	
A* to	0.74163	4	ΔHc kcal/m	0.6765	2	M Spec.	
B* °C	212.78	4	ΔHf	26.8	3 ³	Ultra V.	
K			ΔFf			X-Ray Dif.	
c			Viscosity centistokes			Infrared	
t _x to			η °C			Solubility in +	
t _x °C			B ^v to			Acetone	
A' to			A ^v °C			Carbon tet.	
B' °C			(B ^v) to			Benzene	
C'			(A ^v) °C			Ether	
A'* to			c _p liq.			n-Heptane	
B'* °C			-191.79°C	0.5268	3 ¹	Ethanol	
Ac -165 to	8.49178	5	c _p vap. -244.4	0.2074	3 ²	Water	
Bc t _c °C	783.48	5	-206.8	0.4414	3 ²	Water in	
Cc t _c °C	332.58	5	c _v vap.				
Cryos. A*							
consts. B*							
t _e °C	-201.62	5					
						† grams/100 grams solvent	
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3 Proc. Koninkl. Nederland. Wet. Schappen 34, 1314 (1931), Crommelin et al.; 3 ¹ Z. Physik. Chem. B3, 41 (1929), K. Clusius; 3 ² Z. Physik. Chem. B40, 273 (1938), R. Kaischew; 3 ³ Physical Chemistry, p. 528, 1946, Glasstone.							

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 7

NAME		Carbonyl chloride Phosgene		STRUCTURAL FORMULA Cl Cl-C=O	
Mole % Pur.	Ref.	Molecular Formula COCl ₂	Molecular Weight 98.924		
F. P. °C	-127.76	3 ²	dt/dP °C/mm		Ref.
F. P. 100%			25°C	0.02116	4
B. P. °C			BP	0.03426	4
760 mm	7.56	3 ²	t _e	0.03428	5
100	-35.65	4	30 mm	0.4732	4
30	-54.6	4	ΔHm cal/g	13.86	3 ²
10	-68.91	4	ΔHv cal/g		
1	-92.45	4	25°C	56.52	5
Pressure mm 25°C	1418.0	4	30 mm	67.61	5
t _e	759.4	5	BP	58.95	3 ²
Density g/ml 20°C			t _e	58.96	5
d ₄ ^t 25	1.381	3 ¹	t _e (d, e)	58.95	5
d ₄ ^t 30	1.369	4	ΔHv/T _e	20.77	5
d ₄ ^t 30	1.357	3 ¹	d -60 to	60.00	5
a	1.432	4	e 15 °C	0.1393	5
b	-0.0022	4	d' to		
Ref. Index			e' °C		
n _D 20°C			d _c g/ml	0.520	3 ¹
25			v _c ml/g	1.923	4
30			t _c °C	181.9	3 ²
"C"			P _c mm	42560.	3 ²
MR (Obs.)			PV/RT		
MR (Calc.) (n _D -d/2)	10.596	5	25°C	0.9492	5
Dielectric			30 mm	1.0000	5
A -60 to	6.84297	4	BP	0.9724	4
B -68 °C	941.25	4	t _e	0.9722	5
C	230.	4	t _e	0.285	4
A* to	1.33370	5	ΔHc kcal/m		
B* °C	876.27	5	ΔHf		
K	26.65	4	ΔFf		
c	-0.21911	4	Viscosity centistokes		
t _k to	60.0	4	η °C		
t _x °C	227.4	5	B ^v to		
A' to			A ^v °C		
B' °C			(B ^v)		
C' °C			(A ^v)		
A'* to			c _p liq. 20 °C	0.2429	3 ²
B'* °C			c _p vap. °K		
Ac 68 to	8.0270	5	c _v vap.		
Bc t _c °C	1779.3	5			
Cc t _c °C	341.73	5			
Cryos. A° const. B°					
t _e °C	7.54	5			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE:					
PURIFICATION:					
LITERATURE REFERENCES: 3 ¹ Lange; 3 ² JACS 70, 120 (1948) Giaque and Jones.					

NAME		Chlorine			STRUCTURAL FORMULA		
					Cl-Cl		
Mole % Pur.	Ref.	Molecular Formula	Cl ₂	Molecular Weight	70.914		
		Ref.			Ref.		
F. P. °C	-100.98	2	dt/dP °C/mm			f	to
F. P. 100%			25°C	0.00632	5	g	°K
B. P. °C			BP	0.02952	5	h	
760 mm	-34.05	2	t _e	0.03391	5	f'	to
100	-71.32	4	30 mm			g'	°K
30		4	ΔH _m cal/g	21.59	2	h'	
10	-100.06	4	ΔH _v cal/g			m	to
1	-120.44	4	25°C	57.14	4	n	°K
Pressure mm	5878.0	4	30 mm			o	
t _e	636.7	5	BP	68.8	2		
Density g/ml			t _e	69.76	5	m'	to
20°C	1.408	3'	t _e (d, e)			n'	°K
25	1.391	3'	ΔH _v /T _e	21.02	4	o'	
d ₄ ^t	1.377	3'	d			Surface tension dynes/cm. 20°C	
a	1.4778	4	e			30	21.62
b	-0.00236	4	e			40	19.78
Ref. Index			d'				18.07
n _D			e'			Parachor [P]	
20°C			d	0.573	3'	20°C	
25			v	1.745	3'	30	
30			c	146.	3'	40	
"C"			P	71060.	3'	Sugd.	108.60
MR (Obs.)			PV/RT			Exp. L. l. %/wt.	
MR (Calc.)	11.934	5	25°C	0.8678	4	u.	
(n _D -d/2)			30 mm	1.0000	5	Dispersion	
Dielectric			BP	0.9652	4	Flash Point °C	
A	6.86773	4	t _e	0.9726	4	Fire Point	
B	821.107	4	t _c	0.3364	4	M Spec.	
C	240.	4	ΔH _c kcal/m			Ultra V.	
A*	1.33933	4	ΔH _f			X-Ray Dif.	
B*	775.711	4	ΔF _i			Infrared	
K	15.86	4	Viscosity centistokes			Solubility in +	
c	-0.09938	4	η			Acetone	
t _k	30.0	4				Carbon tet.	
t _x	188.0	5				Benzene	
A'			B ^v			Ether	
B'			A ^v			n-Heptane	
C'			(B ^v)			Ethanol	
A'*			(A ^v)			Water	
B'*			c _p liq.	°K		Water in	
A _c			c _p vap.	°K			
B _c			c _v vap.				
C _c							
Cryos. A°							
const. B°							
t _e °C	-37.846	5					
* T _R 0.85 and above (85°C)				+ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE: API							
PURIFICATION: API							
LITERATURE REFERENCES: 3' Lange's Hdbk.							

No. 9

NAME		Hydrazine				STRUCTURAL FORMULA					
						NH ₂ -NH ₂					
Mole % Pur.	Ref.	Molecular Formula	N ₂ H ₄	Molecular Weight	32.048						
F.P. °C	2.0	3				f		to			
F.P. 100%						g		°C			
B.P. °C						h					
760 mm	113.13	4		dt/dP °C/mm	7.2453	5					
100	62.61	4		25°C BP	0.03868	4					
30	39.31	4		t _e	0.02983	5					
10	21.1	5		30 mm	0.5916	4			to °C		
1	-10.3	5		ΔHm cal/g	94.39	3					
Pressure mm 25°C	12.820	5		ΔHv cal/g							
t _e	1043.0	5		25°C	345.4	5			to °K		
Density g/ml 20°C	1.0079	4		30 mm	341.2	5					
d _t 25	1.0036	3		BP	300.7	5					
d ₄ 30	0.9992	4		t _e	295.7	5			to °K		
				t _e (d, e)	295.5	5					
				ΔHv/T _e	239.5	5					
a	1.0253	3		d 39 to	362.8	5					
b	-0.00087	4		e 130 °C	0.5486	5			Surface tension dynes/cm. 20°C	74.76	5
Ref. Index n _D 20°C	1.47074	4		d' 0 to	352.7	5			35	62.3	3
25	1.46867	4		e' 39 °C	0.2935	5			40	69.76	5
35	1.46444	3		d _c g/ml					Parachor [P] 20°C		
"C" 35	0.6169	4		v _c ml/g	380.0	3			35	90.5	4
MR (Obs.) 35 8.90		4		t _c °C					40		
MR (Calc.) 35 9.34		5		P _c mm	123000.	4			Sugd.	93.5	5
(nD-d/z) 35 0.96704		4		PV/RT 25°C	1.0000	5			Exp. L. l. %/wt. u.		
Dielectric				30 mm	1.0000	5			Dispersion		
A 39 to	7.77306	4		BP	0.9550	5			Flash Point °C		
B 250 °C	1620.0	4		t _e	0.9469	5			Fire Point		
C 218.0		4		t _c					M. Spec. Ultra V. X-Ray Dif. Infrared		
A* to	1.66688	5		ΔHc kcal/m	148.635	3			Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
B* °C	1537.1	5		ΔHf	12.00	3					
K				ΔFf							
c				Viscosity centistokes η							
t _k to				10 °C	1.0997	3					
t _x °C				15	1.0313	3					
A' -10 to	8.26230	5		20	0.9660	3					
B' 39 °C	1881.6	5		25	0.9016	3					
C' 238.0		5		B ^v 10 to	314.32	4					
A ^{1*} to				A ^v 35 °C	2.90095	4					
B ^{1*} °C				(B ^v)							
Ac 250 to	8.39858	5		(A ^v)							
B _c t _c	2258.5	5		c _p liq. 17°C	0.7336	3					
C _c 302.6		5		37	0.7426	3					
Cryos. A ¹ const. B ¹				c _p vap. °K							
t _e °C	122.70	5		c _v vap.							

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE:

PURIFICATION:

LITERATURE REFERENCES: 3 Hydrazine, Matheson Company

No. 10

NAME		Hydrogen (normal)				STRUCTURAL FORMULA	
		75% O-H ₂		25% P-H ₂		H-H	
Mole % Pur.	Ref.	Molecular Formula	H ₂	Molecular Weight	2.016		
	Ref.						Ref.
F. P. °C	-259.20	3	dt/dP °C/mm			f	to °K
F. P. 100%			25°C			g	
B. P. °C			BP	0.024428	4	h	
760 mm	-252.78	3	t _e			f'	to °K
100	-258.1	4	30 mm	0.03278	4	g'	
30	-259.2	3	ΔHm cal/g	13.889	3	h'	
12.7*	-261.16	3	ΔHv cal/g			m	to °K
1.7*	-263.16	3	25°C			n	
Pressure mm 25°C			30 mm	107.04	4	o	
t _e			BP	107.79	4	m'	to °K
Density g/ml	-259.16	0.07718	3	t _e (d, e)		n'	
t _e BP		0.07097	3	ΔHv/T _e		o'	
d ₄ -247.16		0.06301	3	d -259.2 to	33.35	4	Surface tension dynes/cm. 20°C
a at BP	0.072305	4	e -252.5 °C	0.2945	4		30
b	-0.02785	4	e' to °C				40
Ref. Index n _D 20°C			d _c g/ml	0.3011	3		Parachor [P] 20°C
25			v _c ml/g	33.209	3		30
30			t _c °C	-239.97	3		40
"C"			P _c mm	9865.	3		Sugd.
MR (Obs.)			PV/RT				Exp. L. l. %/wt. u.
MR (Calc.) (nD-d/2)			1* X	0.98415	3		Dispersion
Dielectric			30 mm	0.98415	3		Flash Point °C
A -259 to	5.92088	4	BP	0.9030	4		Fire Point
B -248 °C	71.615	4	22°K	0.87420	3		M Spec. Ultra V. X-Ray Dif. Infrared
C	276.337	4	t _c	0.3115	3		Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water
A* -259 to	T. 84968	4	ΔHc kcal/m	57.7979	2		Water in
B* -243 °C	64.175	4	ΔHf				0.021535
K	1.13	4	ΔFi				3'
c	-0.06955	4	Viscosity centistokes				
t _k to	-249.0	4	η gaseous °C				
t _x °C	-236.65	5	-252.16	0.819	3		
A' to			-243.2	0.1537	3		
B' to			B ^v to °C				
C' to			(B ^v) to °C				
A'* to			(A ^v) to °C				
B'* to			c _p liq. °C				
Ac -248 to	7.37918	4	c _p vap. 25°C	3.4186	2		
Bc t _c °C	185.154	4	300	3.4722	2		
Cc	294.667	4	c _v vap.				
Cryos. A° const. B°							
t _e °C							
*solid		+ grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3 J. Res. NBS 41, 467 (1948) Wooley et al.; 3' Lange's Hdbk., Ed. 8, p. 1082.							
Density of normal hydrogen at 0°C and 760 mm = 0.089888 g/liter - 3							

NAME		Hydrogen Bromide			STRUCTURAL FORMULA				
		Hydrobromic Acid			HBr				
Mole % Pur.	Ref.	Molecular Formula	HBr	Molecular Weight	80.924				
		Ref.			Ref.				Ref.
F.P. °C	-87.04	3	dt/dP			f		to	
F.P. 100%			°C/mm			g		°C	
B.P. °C			25°C	0.01088	5	h			
760 mm	-66.82	3	BP	0.02617	4	f'			
100	-99.9	5	t _e	0.03450	4	g'		to	
30	-114.6 *	4	30 mm	0.3633	4	h'		°C	
10	-125.4	5	ΔHm cal/g	7.11	3	m		to	
1	-143.5 ?	5	ΔHv cal/g			n		°K	
Pressure mm 25°C	17920.	5	25°C			o			
t _e	534.9	4	30 mm	56.67	5				
Density g/ml -67.1°C	2.717	3 ³	BP	49.84	4	m'		to	
d _t -60	2.238	3 ³	t _e	51.01	5	n'		°K	
d ₄ -46	2.174	3 ³	t _e (d, e)	50.81	5	o'			
			ΔHv/T _e	20.68	5	Surface tension dynes/cm.-67.1°C			
a -67°C = b 0 Point	2.729	4	d -120 to	40.30	5	γ	27.07		3 ³
Ref. Index n _D 20°C	0.06718	4	e -75 °C	0.1429	5		25.54		3 ³
25			d'				-60		3 ³
30			e'				-46		3 ³
"C"			d _c g/ml			Parachor [P]			
MR (Obs.) MR (Calc.) (nd-d/2)	9.865	5	v _c ml/g	90.0	3 ²	-67.1°C	81.39		3 ³
Dielectric			t _c °C			-60.	81.53		3 ³
A -120 to	6.88059	4	P _c mm	63840.	3 ²	-46	81.86		3 ³
B -60°C	732.68	4	PV/RT			Sugd.	85.1		5
C 250.	250.	5	25°C	1.0000	5	Exp. L. l. %/wt. u.			
A* 120 to	1.40844	4	30 mm	0.9560	4	Dispersion			
B* -40 °C	679.5	4	BP	0.9629	4	Flash Point °C			
K			t _e			Fire Point			
t _k to			t _c			M. Spec. Ultra V. X-Ray Dif. Infrared			
t _x °C			ΔHc kcal/m	3500.	3 ¹	Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in			
A ¹ -120 to	8.4622	4	ΔHf						
B ¹ -87 °C	1112.4	4	ΔFf						
C ¹ Solid	270.	5	Viscosity centistokes η						
A ¹ * to			B ^v to						
B ¹ * °C			A ^v °C						
Ac -60 to	7.18977	4	(B ^v)						
Bc t _c °C	8127.8	4	(A ^v)						
Cc t _c °C	251.8	4	c _p liq. 35 °C	0.9974	3 ⁴				
Cryos. A° const. B°			c _p 40	0.9898	3 ⁴				
t _e °C	-73.55	4	c _p vap. °K						
			c _v vap.						

*Interpolated below M. P. †Not associated in the vapor stage.

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE:

PURIFICATION:

LITERATURE REFERENCES: 3 JACS 50, 2193 (1928) Giaque and Wiebe; 3' Anorg. Allgem. Chem. 239, 327 (1938); 3² Bur. Stds. Sci. Paper No. 541, S. F. Pickering; 3³ J. Chem. Soc. P 880 (1934) Pearson and Robinson; 3⁴ Z. Physik Chem. A 183, 38 (1938).

NAME		Hydrogen Chloride Hydrochloric Acid			STRUCTURAL FORMULA		
Mole % Pur.		Ref.	Molecular Formula	HCl	Molecular Weight	36.465	
						HCl	
		Ref.					Ref.
F. P. °C	-114.19	2				f	to
F. P. 100%						g	to
B. P. °C						h	to
760 mm	-85.03	3'	dt/dP °C/mm		0.02323	4	
100	-114.61	4	25°C		0.03217	4	
30	-127.75	4	BP		0.3799	4	
10	-137.77	4	t _e				
1	-154.37	4	30 mm				
			ΔHm cal/g		13.05	2	
Pressure mm 25°C	35520.	4	ΔHv cal/g				
t _e	482.8	5	25°C				
Density g/ml 20°C	0.831	3'	30 mm		116.48	5	
t	0.802	4	BP		103.12	4	
d ₄	0.772	3'	t _e		105.99	5	
			t _e (d, e)		105.51	5	
			ΔHv/T _e		21.41	5	
a	0.9800	4	d -130 to		76.53	5	Surface tension
b	-0.00260	4	e -90 °C		0.3127	5	dynes/cm. 20°C
Ref. Index n _D 25			d' to				30
25			e' to				40
30			d c g/ml		0.4214	3'	Parachor [P]
			v c ml/g		2.35	3'	20°C
			t c °C		51.4	3'	30
"C"			P _c mm		61978.	3'	40
MR (Obs.)			PV/RT				Sugd. 59.1
MR (Calc.) (n _D -d/2)	8.385	5	25°C				5
Dielectric			30 mm		1.0000	5	Exp. L. l. %/wt. u.
A -127 to	7.06145	4	BP		0.9447	3'	Dispersion
B -60 °C	710.584	4	t _e		0.9615	5	Flash Point °C
C	255.0	4	t _c		0.2624	4	Fire Point
A* -127 to	1.35658	4	ΔHc kcal/m				None
B* -20 °C	672.85	4	ΔHf				None
K	12.78	4	ΔFf				1
c	-0.12308	4	Viscosity centistokes				1
t _k -20 to	-20.0	4	η °C				
t _x +30 °C	83.9	4					
A' to			B ^v to				
B' °C			A ^v °C				
C' °C			(B ^v) to				
A'* to			(A ^v) °C				
B'* °C			c _p liq. °K				
Ac -60 to	7.91458	4	c _p vap. °K				
Bc t _c °C	1146.89	4					
Cc °C	315.916	4					
Cryos. A° const. B°							
t _e °C	-92.68	5					
+ grams/100 grams solvent							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3' - Lange (Young)							
No association in vapor phase above B. P. at least.							

NAME		Hydrogen fluoride		STRUCTURAL FORMULA	
		Hydrofluoric acid		HF	
Mole % Pur. 99.75	Ref. 3	Molecular Formula HF	Molecular Weight 20.008		
F. P. °C	-83.76	3	dt/dP °C/mm		
F. P. 100%			25°C	0.03137	5
B. P. °C			BP	0.03689	4
760 mm	19.52	3	t _e	0.03464	5
100	-29.5	4	30 mm	0.5931	4
30	-52.7	4	ΔHm cal/g	54.68	3'
10	-71.0	5	ΔHv cal/g		
1	-102.5 ?	5	25°C	84.45	3
			30 mm x Mx	271.4	5
Pressure mm 25°C	921.4	4	BP	80.45	3
t _e	819.1	5	t _e (d, e)	79.09	5
Density g/ml-60°C	1.1660	3'	ΔHv/T _e	19.27	5
t -30	1.0735	3'			
d ₄ 0	1.0015	3'	d to		
			e °C		
a	1.0035	4	e' to		
b	-0.00233	4			
Ref. Index n _D 20°C			d _c g/ml		
25			v _c ml/g		
30			t _c °C		
"C"			P _c mm		
MR (Obs.)			PV/RT		
MR (Calc.) (nD-d/2)	2.05	5	25°C	1.0000	5
Dielectric	83.6	3'	30 mm	1.0000	4
A -55 to	8.38036	3	BP	0.9939	5
B °C	1952.55	3	t _e	0.9985	5
C	335.52	3	ΔHc kcal/m		
A* -55 to	1.93767	4	ΔHf		
B* 40 °C	1781.1	4	ΔFf		
K			Viscosity centistokes		
c			η -50 °C	0.507	3'
t _k to			-25	0.330	3'
t _x °C			0	0.256	3'
A' to			B ^v to		
B' °C			A ^v °C		
C' °C			(B ^v) to		
A'* to			(A ^v) °C		
B'* °C			c _p liq. -32.2°C	0.7546	3'
Ac to			-2.2	0.8372	3'
Bc t _c °C			c _p vap. °K		
Cc			c _v vap.		
Cryos. A° const. B°					
t _e °C	21.63	5			
† grams/100 grams solvent					
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula					
SOURCE: Lit. Ref.					
PURIFICATION:					
LITERATURE REFERENCES: 3 J. Phys. Chem. 57, 600 (1953), Jarry and Davis; 3' Fluorine Chemistry Vol. I, Academic Press, N. Y., 1950.					

NAME		Mercury			STRUCTURAL FORMULA			
					Hg			
Mole % Pur. 100. ?	Ref.	Molecular Formula	Hg	Molecular Weight	200.610			
		Ref.			Ref.			
F.P. °C	-36.87	3	dt/dP			f	to	
F.P. 100%			°C/mm			g	°K	
B.P. °C			25°C	6456.37	4	h		
760 mm	356.706	3	BP	0.07309	4	f'	to	
100	261.499	3	t _e	0.03513	4	g'	°K	
30			30 mm			h'		
10	183.655	3	ΔHm cal/g			m	to	
1	126.287	3	ΔHv cal/g			n	°K	
Pressure mm 25°C	0.00184	3	25°C			o		
t _e	1874.2	4	30 mm					
Density g/ml 20°C	13.5464	3	BP	70.613	5	m'	to	
t	13.5342	3	t _e	70.185	5	n'	°K	
d ₄	13.5219	3	t _e (d, e)	70.205	4	o'		
			ΔHv/T _e	20.57	4	Surface tension dynes/cm. 20°C		
a	13.5952	4	d 217 to	73.382	4	30		
b	-0.0324	4	e 410 °C	0.00777	4	40		
Ref. Index			d' 20 to	73.426	4	Parachor [P]		
n _D 20°C			e' 217 °C	0.00797	4	20°C		
25			d _c g/ml	6.6878	5	30		
30			v _c ml/g	0.1495	5	40		
"C"			t _c °C	900.	5	Sugd.		
MR (Obs.)			P _c mm	136800.	5	Exp. L. l. %/wt.		
MR (Calc.)			PV/RT			u.		
(nD-d/2)			25°C	1.0000	4	Dispersion		
Dielectric			30 mm			Flash Point °C		
A 300 to	7.69059	4	BP	0.9979	4	None		
B 400 °C	2958.841	4	t _e	0.9841	4	Fire Point		
C	258.460	4	t _c	0.545	5	None		
A* 300 to	2.03041	4	ΔHc kcal/m			M Spec.		
B* 412 °C	2731.663	4	ΔHf			Ultra V.		
K			ΔFf			X-Ray Dif.		
A** 200 to	2.09632	4	Viscosity			Infrared		
B** 300 °C	2787.01	4	centistokes			Solubility in +		
C**	262.48	4	η			Acetone		
A' 100 to	7.46905	4	B ^v to			Carbon tet.		
B' 200 °C	2771.898	4	A ^v °C			Benzene		
C'	244.831	4	(B ^v) to			Ether		
A* 100 to	1.89241	4	(A ^v) °C			n-Heptane		
B* 200 °C	2590.7	4	c _p liq. °C	0.0332	3	Ethanol		
Ac 800 to	7.74599	4	c _p vap. °K	0.0331	3	Water		
Bc 1300 °C	3049.646	4	c _v vap.			Water in		
Cc	269.563	4				A'' 200 to	7.7324	4
Cryos. A°						B'' 300 °C	3008.68	4
consts. B°						C''	262.482	4
t _e °C	411.298	4				A''' 400 to	7.7531	4
						B''' 800 °C	3068.195	4
						C'''	273.438	4
+ grams/100 grams solvent								
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: 3								
PURIFICATION: 3								
LITERATURE REFERENCES: 3 Lange's Handbook; A''' 10 to 7.3119 4								
3 ¹ Jr. Res. NBS 46, No. 4334 (1951); 3 ² I. C. T. B''' 100 °C 2762.75 4								
C''' 250.00 4								

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 15

NAME		Nitrogen			STRUCTURAL FORMULA		
		N ₂			N≡N		
Mole % Pur.	Ref.	Molecular Formula	N ₂	Molecular Weight	28.016		
		Ref.			Ref.		
F.P. °C	-210.02	3	dt/dP			f	to
F.P. 100%			°C/mm			g	°C
B.P. °C			25°C			h	
760 mm	-195.82	3	BP	0.01109	4		
100	-209.83	3	t _e	0.03480	5	f'	to
30	-215.98 [‡]		30 mm	0.1537	4	g'	°C
10	-228.3	5	ΔHm cal/g	6.14	3 [‡]	h'	
1			ΔHv cal/g			m	to
Pressure mm 25°C			25°C			n	°K
t _e	182.17	5	30 mm	50.36	5	o	
Density g/ml-208.36			BP	48.8	4	m'	to
d ₄ ²⁰	0.8622	3	t _e	49.09	5	n'	°K
d ₄ ²⁵	0.8265	3	t _e (d, e)	49.59	5	o'	
d ₄ ³⁰	0.8043	3	ΔHv/T _e	20.50	5		
a -207 to b -182 °C	0.0192	4	d _e -205 to e -190 °C	33.63	5	Surface tension dynes/cm. 20°C	
Ref. Index n _D 20°C	-0.00405	4	d _e '	0.0774	5	y 30	
25			e'			40	
30			d _c g/ml	0.3110	3 ¹	Parachor [P] 20°C	
"C"			v _c ml/g	3.215	3 ¹	30	
MR (Obs.)			t _c °C	-147.1	3 ¹	40	
MR (Calc.) (nD-d/2)			P _c mm	25460.	3 ¹	Sugd. 12.5	
Dielectric			PV/RT 25°C			Exp. L. l. %/wt. u.	
A -210 to B -180°C	6.86606	4	30 mm	1.0000	5	Dispersion	
C	308.365	4	BP	0.9690	4	Flash Point °C	
A* -210 to B* -157°C	1.30995	4	t _e	0.9758	5	Fire Point	
K	282.739	4	t _c	0.2916	4	None	
c	5.774	4	ΔHc kcal/m	0		M. Spec. Ultra V.	
t _k to	-0.16054	4	ΔHf	0		X-Ray Dif. Infrared	
t _x to	-170.0	4	ΔFf	0		Solubility in Acetone	
A' to	-134.5	5	Viscosity centistokes η °C			Carbon tet.	
B' to			B ^v to °C			Benzene	
C' to			(B ^v) to °C			Ether	
A** to B** °C			(A ^v) to °C			n-Heptane	
Ac -180 to Bc t _c °C	5.80356	4	c _p liq. °C			Ethanol	
Cc t _c °C	121.88	4	c _p vap. 25°C	0.2484	2	Water	
Cryos. A° const. B°	234.3	4	c _v vap.			Water in	
t _e °C	-206.1	5				0.001751	
[‡] interpolated below F. P.							
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula							
SOURCE:							
PURIFICATION:							
LITERATURE REFERENCES: 3 Ann. Phys. 17, 455(1922) Mathias et al.; 3 ¹ ICT; 3 [‡] Lange's Hdbk. 8th Ed., p. 1083; 3 ³ JACS 55, 4875 (1933) Giauque & Clayton.							

NAME		Nitrous Oxide				STRUCTURAL FORMULA		
Mole % Pur.	Ref.	Molecular Formula	N ₂ O	Molecular Weight	44.016			
F. P. °C								
F. P. 100%								
B. P. °C								
760 mm	-89.5	3'		0.02224	4			
100	-117.75	4		0.03297	5			
30								
10	-139.77	4						
1	-155.51	4						
Pressure mm 25°C	42980.	4		34.90	4			
t _e	463.0	5						
Density g/ml 20°C	0.784	3'		84.70	4			
t	0.732	4		86.36	5			
d ^t 25	0.679	3'						
d ⁴ 30				21.63	5			
a	0.997	4						
b	-0.00260	4						
Ref. Index n _D 20°C								
25								
30								
"C"								
MR (Obs.)								
MR (Calc.) (n _D -d/2)								
Dielectric								
A to	7.00467	4						
B to	661.88	4						
C to	250.0	5						
A* to	1.29209	4						
B* to	610.02	4						
K to	7.3785	4						
c to	-0.03827	4						
t _k to	-50.0	4						
t _x to	58.66	4						
A' to								
B' to								
C' to								
A'* to								
B'* to								
Ac to	7.20195	4						
Bc to	706.4	4						
Cc to								
Cryos. A°								
consts. B°								
t _e °C	-97.46	4						
† T _R 0.80 and above (-20°C)		+ grams/100 grams solvent						
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula								
SOURCE: Lange								
PURIFICATION: Lange								
LITERATURE REFERENCES: 3' Lange.								

No. 17

NAME	Oxygen				STRUCTURAL FORMULA																																																																																																																																																																																																																																																																																																																																																																				
					O=O																																																																																																																																																																																																																																																																																																																																																																				
	Mole % Pur.	Ref.	Molecular Formula	O ₂	Molecular Weight	32.000																																																																																																																																																																																																																																																																																																																																																																			
<table border="1"> <thead> <tr> <th colspan="2"></th> <th>Ref.</th> <th colspan="2"></th> <th>Ref.</th> <th colspan="2"></th> <th>Ref.</th> </tr> </thead> <tbody> <tr> <td>F.P. °C</td> <td>-218.83</td> <td>3</td> <td rowspan="2">dt/dP °C/mm 25°C</td> <td rowspan="2"></td> <td rowspan="2"></td> <td>f</td> <td>to</td> <td></td> </tr> <tr> <td>F.P. 100%</td> <td></td> <td></td> <td>g</td> <td>°C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>B.P. °C</td> <td></td> <td></td> <td rowspan="4">BP</td> <td rowspan="4">0.01255</td> <td rowspan="4">4</td> <td>h</td> <td>to</td> <td></td> </tr> <tr> <td>760 mm</td> <td>-182.970</td> <td>3</td> <td>h'</td> <td>to</td> <td></td> <td></td> <td></td> </tr> <tr> <td>100</td> <td>-198.9</td> <td>4</td> <td>t_e</td> <td>to</td> <td></td> <td></td> <td></td> </tr> <tr> <td>30</td> <td>-205.945</td> <td>4</td> <td>30 mm</td> <td>-205.945</td> <td>4</td> <td>g'</td> <td>to</td> <td></td> </tr> <tr> <td>10</td> <td>-220.</td> <td>5</td> <td></td> <td></td> <td></td> <td>h'</td> <td>to</td> <td></td> </tr> <tr> <td>1</td> <td></td> <td></td> <td>ΔHm cal/g</td> <td></td> <td></td> <td>m</td> <td>to</td> <td></td> </tr> <tr> <td>Pressure mm 25°C</td> <td></td> <td></td> <td rowspan="2">ΔHv cal/g 25°C</td> <td rowspan="2">53.01</td> <td rowspan="2">5</td> <td>n</td> <td>to</td> <td></td> </tr> <tr> <td>t_e</td> <td>218.60</td> <td>5</td> <td>30 mm</td> <td>50.9</td> <td>5</td> <td>o</td> <td>°K</td> </tr> <tr> <td>Density g/ml-182. °C</td> <td>1.1415</td> <td>3²</td> <td>t_e</td> <td>52.24</td> <td>5</td> <td rowspan="3">m'</td> <td rowspan="3">to</td> <td rowspan="3">°K</td> </tr> <tr> <td>t-154.5</td> <td>0.9758</td> <td>3²</td> <td>t_e (d, e)</td> <td>51.86</td> <td>5</td> <td>n'</td> <td></td> </tr> <tr> <td>d₄-140.2</td> <td>0.8742</td> <td>3²</td> <td>ΔHv/T_e</td> <td>20.97</td> <td>5</td> <td>o'</td> <td></td> </tr> <tr> <td>a -218°C</td> <td>0.3258</td> <td>4</td> <td>d -210 to</td> <td>34.15</td> <td>5</td> <td colspan="3" rowspan="3">Surface tension dynes/cm. 20°C.</td> </tr> <tr> <td>b to -170</td> <td>-0.004510</td> <td>4</td> <td>e -175 to</td> <td>0.09156</td> <td>5</td> </tr> <tr> <td>Ref. Index n_D 20°C</td> <td></td> <td></td> <td>d'</td> <td></td> <td></td> <td>g</td> <td></td> </tr> <tr> <td>25</td> <td></td> <td></td> <td>e'</td> <td></td> <td></td> <td colspan="3">30</td> </tr> <tr> <td>30</td> <td></td> <td></td> <td>d_c g/ml</td> <td>0.430</td> <td>3'</td> <td colspan="3">40</td> </tr> <tr> <td>"C"</td> <td></td> <td></td> <td>v_c ml/g</td> <td>2.325</td> <td>3'</td> <td colspan="3">Parachor [P]</td> </tr> <tr> <td>MR (Obs.)</td> <td></td> <td></td> <td>t_c °C</td> <td>-118.8</td> <td>3'</td> <td colspan="3">20°C</td> </tr> <tr> <td>MR (Calc.) (nD-d/2)</td> <td></td> <td></td> <td>P_c mm</td> <td>37770.</td> <td>3'</td> <td colspan="3">30</td> </tr> <tr> <td>Dielectric</td> <td></td> <td></td> <td>PV/RT 25°C</td> <td></td> <td></td> <td colspan="3">40</td> </tr> <tr> <td>A -210 to</td> <td>6.98983</td> <td>4</td> <td>30 mm</td> <td>1.0000</td> <td>5</td> <td colspan="3">Sugd.</td> </tr> <tr> <td>B -160 °C</td> <td>370.757</td> <td>4</td> <td>BP</td> <td>0.9602</td> <td>5</td> <td colspan="3">Exp. L.l. %/wt.</td> </tr> <tr> <td>C</td> <td>273.2</td> <td>5</td> <td>t_e</td> <td>0.9854</td> <td>5</td> <td colspan="3">u.</td> </tr> <tr> <td>A* -210to</td> <td>1.44043</td> <td>4</td> <td>t_c</td> <td>0.2918</td> <td>4</td> <td colspan="3">Dispersion</td> </tr> <tr> <td>B* -182°C</td> <td>341.71</td> <td>4</td> <td>ΔHc kcal/m</td> <td>0</td> <td>2</td> <td colspan="3">Flash Point °C</td> </tr> <tr> <td>K</td> <td>9.2</td> <td>4</td> <td>ΔHf</td> <td>0</td> <td>2</td> <td colspan="3">Fire Point</td> </tr> <tr> <td>c</td> <td>-0.14542</td> <td>4</td> <td>ΔFf</td> <td>0</td> <td>2</td> <td colspan="3">M. Spec.</td> </tr> <tr> <td>t_k to</td> <td>-166.7</td> <td>4</td> <td colspan="2">Viscosity centistokes</td> <td></td> <td colspan="3">Ultra V.</td> </tr> <tr> <td>t_x °C</td> <td>-103.4</td> <td>4</td> <td colspan="2">η °C</td> <td></td> <td colspan="3">X-Ray Dif.</td> </tr> <tr> <td>A' to</td> <td></td> <td></td> <td colspan="2"></td> <td></td> <td colspan="3">Infrared</td> </tr> <tr> <td>B' °C</td> <td></td> <td></td> <td colspan="2"></td> <td></td> <td colspan="3" rowspan="4">Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in</td> </tr> <tr> <td>A'* to</td> <td></td> <td></td> <td>B^v to</td> <td></td> <td></td> </tr> <tr> <td>B'* °C</td> <td></td> <td></td> <td>A^v °C</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>(B^v) </td> <td></td> <td></td> </tr> <tr> <td>Ac -160to</td> <td>6.83514</td> <td>4</td> <td>(A^v) </td> <td></td> <td></td> <td>0.003931</td> <td>3³</td> </tr> <tr> <td>Bc t_c °C</td> <td>336.56</td> <td>4</td> <td>c_p liq. °C</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Cc t_c °C</td> <td>267.85</td> <td>4</td> <td>c_p vap. 25°C</td> <td>0.1636</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>Cryos. A* const. B*</td> <td></td> <td></td> <td>c_p vap. 300</td> <td>0.1580</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>t_e °C</td> <td>-193.47</td> <td>5</td> <td>c_v vap.</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										Ref.			Ref.			Ref.	F.P. °C	-218.83	3	dt/dP °C/mm 25°C			f	to		F.P. 100%			g	°C				B.P. °C			BP	0.01255	4	h	to		760 mm	-182.970	3	h'	to				100	-198.9	4	t _e	to				30	-205.945	4	30 mm	-205.945	4	g'	to		10	-220.	5				h'	to		1			ΔHm cal/g			m	to		Pressure mm 25°C			ΔHv cal/g 25°C	53.01	5	n	to		t _e	218.60	5	30 mm	50.9	5	o	°K	Density g/ml-182. °C	1.1415	3 ²	t _e	52.24	5	m'	to	°K	t-154.5	0.9758	3 ²	t _e (d, e)	51.86	5	n'		d ₄ -140.2	0.8742	3 ²	ΔHv/T _e	20.97	5	o'		a -218°C	0.3258	4	d -210 to	34.15	5	Surface tension dynes/cm. 20°C.			b to -170	-0.004510	4	e -175 to	0.09156	5	Ref. Index n _D 20°C			d'			g		25			e'			30			30			d _c g/ml	0.430	3'	40			"C"			v _c ml/g	2.325	3'	Parachor [P]			MR (Obs.)			t _c °C	-118.8	3'	20°C			MR (Calc.) (nD-d/2)			P _c mm	37770.	3'	30			Dielectric			PV/RT 25°C			40			A -210 to	6.98983	4	30 mm	1.0000	5	Sugd.			B -160 °C	370.757	4	BP	0.9602	5	Exp. L.l. %/wt.			C	273.2	5	t _e	0.9854	5	u.			A* -210to	1.44043	4	t _c	0.2918	4	Dispersion			B* -182°C	341.71	4	ΔHc kcal/m	0	2	Flash Point °C			K	9.2	4	ΔHf	0	2	Fire Point			c	-0.14542	4	ΔFf	0	2	M. Spec.			t _k to	-166.7	4	Viscosity centistokes			Ultra V.			t _x °C	-103.4	4	η °C			X-Ray Dif.			A' to						Infrared			B' °C						Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in			A'* to			B ^v to			B'* °C			A ^v °C						(B ^v)			Ac -160to	6.83514	4	(A ^v)			0.003931	3 ³	Bc t _c °C	336.56	4	c _p liq. °C					Cc t _c °C	267.85	4	c _p vap. 25°C	0.1636	2			Cryos. A* const. B*			c _p vap. 300	0.1580	2			t _e °C	-193.47	5	c _v vap.				
		Ref.			Ref.			Ref.																																																																																																																																																																																																																																																																																																																																																																	
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B.P. °C			BP	0.01255	4	h	to																																																																																																																																																																																																																																																																																																																																																																		
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d ₄ -140.2	0.8742	3 ²	ΔHv/T _e	20.97	5				o'																																																																																																																																																																																																																																																																																																																																																																
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30			d _c g/ml	0.430	3'	40																																																																																																																																																																																																																																																																																																																																																																			
"C"			v _c ml/g	2.325	3'	Parachor [P]																																																																																																																																																																																																																																																																																																																																																																			
MR (Obs.)			t _c °C	-118.8	3'	20°C																																																																																																																																																																																																																																																																																																																																																																			
MR (Calc.) (nD-d/2)			P _c mm	37770.	3'	30																																																																																																																																																																																																																																																																																																																																																																			
Dielectric			PV/RT 25°C			40																																																																																																																																																																																																																																																																																																																																																																			
A -210 to	6.98983	4	30 mm	1.0000	5	Sugd.																																																																																																																																																																																																																																																																																																																																																																			
B -160 °C	370.757	4	BP	0.9602	5	Exp. L.l. %/wt.																																																																																																																																																																																																																																																																																																																																																																			
C	273.2	5	t _e	0.9854	5	u.																																																																																																																																																																																																																																																																																																																																																																			
A* -210to	1.44043	4	t _c	0.2918	4	Dispersion																																																																																																																																																																																																																																																																																																																																																																			
B* -182°C	341.71	4	ΔHc kcal/m	0	2	Flash Point °C																																																																																																																																																																																																																																																																																																																																																																			
K	9.2	4	ΔHf	0	2	Fire Point																																																																																																																																																																																																																																																																																																																																																																			
c	-0.14542	4	ΔFf	0	2	M. Spec.																																																																																																																																																																																																																																																																																																																																																																			
t _k to	-166.7	4	Viscosity centistokes			Ultra V.																																																																																																																																																																																																																																																																																																																																																																			
t _x °C	-103.4	4	η °C			X-Ray Dif.																																																																																																																																																																																																																																																																																																																																																																			
A' to						Infrared																																																																																																																																																																																																																																																																																																																																																																			
B' °C						Solubility in Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in																																																																																																																																																																																																																																																																																																																																																																			
A'* to			B ^v to																																																																																																																																																																																																																																																																																																																																																																						
B'* °C			A ^v °C																																																																																																																																																																																																																																																																																																																																																																						
			(B ^v)																																																																																																																																																																																																																																																																																																																																																																						
Ac -160to	6.83514	4	(A ^v)			0.003931	3 ³																																																																																																																																																																																																																																																																																																																																																																		
Bc t _c °C	336.56	4	c _p liq. °C																																																																																																																																																																																																																																																																																																																																																																						
Cc t _c °C	267.85	4	c _p vap. 25°C	0.1636	2																																																																																																																																																																																																																																																																																																																																																																				
Cryos. A* const. B*			c _p vap. 300	0.1580	2																																																																																																																																																																																																																																																																																																																																																																				
t _e °C	-193.47	5	c _v vap.																																																																																																																																																																																																																																																																																																																																																																						
<p>REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula</p>																																																																																																																																																																																																																																																																																																																																																																									
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LITERATURE REFERENCES: 3 Proc. 7th Inter. Cong. of Refrig. Pt. I, no. 3, p. 174(1936) Henning and Otto; 3' ICT; 3 ² Ann. Phys. 17, 416 (1922) Mathias and Onnes; Lange's hdbk. 8th Ed., p. 1083																																																																																																																																																																																																																																																																																																																																																																									

NAME		Sulfur Dioxide				STRUCTURAL FORMULA				
						O=S=O				
Mole % Pur.	Ref.	Molecular Formula	SO ₂	Molecular Weight	64.06					
		Ref.			Ref.					
F. P. °C	-75.2	3 ¹	dt/dP °C/mm			f		to		
F. P. 100%			25°C	0.001014	5	g		°K		
B. P. °C			BP	0.02938	5	h				
760 mm	-10.00	3 ¹	t _e	0.03125	5	f'		to		
100	-47.81	4	30 mm			g'		°K		
30			ΔHm cal/g			h'				
10	-78.1	4	ΔHv cal/g			m		to		
1	-100.1	4	25°C	84.4	3 ²	n		°K		
Pressure mm 25°C	2939.0	4	30 mm			o				
t _e	704.2	5	BP	92.8	3 ²	m'		to		
Density g/ml 20°C			t _e	93.1	5	n'		°K		
25	1.38290	3 ¹	t _e (d, e)			o'				
d ^t 25	1.36849	3 ¹	ΔHv/T _e	22.80	5	Surface tension dynes/cm. 20°C				
d ₄ 30	1.35593	3 ¹				γ		30		
a	1.43848	4	d					40		
b	-0.002264	4	e							
Ref. Index n _D 20°C			d'			Parachor [P]				
25			e'					20°C		
30			d	0.518	3 ¹			30		
"C"			v	1.9305	3 ¹			40		
MR (Obs.)			c	157.2	3 ¹			Sugd.	88.2	5
MR (Calc.) (n _D -d/2)			P _c mm	59052.	3 ¹	Exp. L. l. %/wt. u.				
Dielectric			PV/RT 25°C	0.9035	5	Dispersion				
A			30 mm			Flash Point °C				
B			BP	0.9663	4	Fire Point				
C			t _e	0.9699	5	M Spec. Ultra V. X-Ray Dif. Infrared				
A*			t _c	0.2720	4	Yes				
B*			ΔHc kcal/m			836.				
K			ΔHf			Solubility in +				
c			ΔFf			Acetone				
t _k			Viscosity centistokes			Carbon tet.				
t _x			η °C			Benzene				
A'						Ether				
B'			B ^v			n-Heptane				
C'			A ^v			Ethanol				
A'*			(B ^v)			Water				
B'*			(A ^v)			Water in				
+ Ac			c _p liq. 10°C	0.35	3 ²					
Bc			c _p vap.* °C	0.1544	3 ²					
Cc			c _v vap.*	0.123	3 ²					
t _e °C	-11.69	5								
+ T _R 0.89 and above (110°C) * C _p /C _v = 1.256 at 16-34°C † grams/100 grams solvent										
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula										
SOURCE:										
PURIFICATION:										
LITERATURE REFERENCES: 3 ¹ - Young; 3 ² Ind. Eng. Chem. 24, 626										

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 19

NAME		Titanium tetrachloride				STRUCTURAL FORMULA				
						TiCl ₄				
Mole % Pur. 99.84	Ref. 1	Molecular Formula	TiCl ₄	Molecular Weight	177.285					
		Ref.								Ref.
F.P. °C	-24.27	1	dt/dP °C/mm			f		to		
F.P. 100%			25°C	1.7323	5	g		°C		
B.P. °C			BP	0.05062	4	h				
760 mm	136.51	1	t _e	0.03782	5	f'		to		
100	73.16	1	30 mm	0.6850	4	g'		°C		
30	45.66	4	ΔHm cal/g	12.63	3	h'				
10	24.85	5	ΔHv cal/g			m		to		
1	-9.7	5	25°C	57.03	5	n		°K		
Pressure mm	10.090	5	30 mm	55.28	5	o				
t _e	1111.0	5	BP	46.39	5	m'		to		
Density g/ml			t _e	45.04	5	n'		°K		
25°C	1.7275	4	t _e (d, e)	44.90	5	o'				
t	1.7191	1	ΔHv/T _e	18.79	5	Surface tension dynes/cm. 20°C				
d ₄	1.6762	1				30				
a	1.7613	4	d 45 to	59.74	5	40				
b	-0.00169	4	e 155 °C	0.0978	5	Parachor [P]				
Ref. Index			d' 10	58.93	5	20°C				
n _D			e' 45 °C	0.0760	5	30				
25	1.6032	1	d _c g/ml			40				
30	1.6002	1	v _c ml/g			Sugd.				
"C"	0.3075	4	t _c °C			Exp. L. l. %/wt.				
MR (Obs.)	31.897	4	P _c mm			u.				
MR (Calc.)	31.897	5	PV/RT	1.0000	5	Dispersion				
(nD-d/2)	0.7437	5	25°C	1.0000	5	Flash Point °C				
Dielectric			BP	0.952	5	Fire Point				
A 45 to	6.69428	1	t _e	0.9396	5	M. Spec.				
B 25 °C	1287.91	1	t _c			Ultra V.				
C	201.2	1	ΔHc kcal/m			X-Ray Dif.				
A* 45 to	1.31804	5	ΔHf			Infrared				
B* 160 °C	1207.17	5	ΔFf			Solubility in				
K			Viscosity centistokes			Acetone				
c			η 25 °C	0.4723	1	Carbon tet.				
t _k to			50	0.3955	1	Benzene				
t _x °C			75	0.3336	1	Ether				
A' -10 to	7.09106	5	100	0.2737	1	n-Heptane				
B' 45 °C	1491.4	5	B ^v to			Ethanol				
C'	220.0	5	A ^v °C			Water				
A'* 10 to	1.69340	5	(B ^v)			Water in				
B'* 45 °C	1399.	5	(A ^v)							
Ac to			c _p liq. °C							
Bc t _c °C			c _p vap. °K							
Cc t _c °C			c _v vap.							
Cryos. A°										
const. B°										
t _e °C	151.8	5								

‡ Atomic refractive index of titanium = 8.03

REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula

SOURCE:

PURIFICATION:

LITERATURE REFERENCES: 3 U.S. Bur. Mines Bull., 393, K. K. Kelly

NAME		Water		STRUCTURAL FORMULA		
				H-O-H		
Mole % Pur.	100	Ref.	Molecular Formula	H ₂ O	Molecular Weight	18.016
F. P. °C	0.0			dt/dP °C/mm		
F. P. 100%				25°C	0.70604	4
B. P. °C				BP	0.03690	4
760 mm	100.0	3'		t _e	0.02835	5
100	51.57	4		30 mm	0.5830	4
30	29.094	4		ΔHm cal/g	79.67	3'
10	11.25	4		ΔHv cal/g		
1	-19.3	4		25°C	582.78	3'
Pressure mm 25°C	23.757	4		30 mm	580.44	4
t _e	1043.6	5		BP	539.83	3'
Density g/ml 20°C	0.99897	3 ⁵		t _e	534.19	3 ³
d ^t 25	0.99707	3 ⁵		t _e (d, e)	534.0	5
d ⁴ 30	0.99568	3 ⁵		ΔHv/T _e	25.17	4
a	1.00283	4		d 20 to	596.83	4
b	-0.02306	4		e 115 °C	0.5727	4
Ref. Index				d' to		
n _D 20°C	1.33299	3 ⁷		e' to		
25	1.33250	3 ⁷		d g/ml	0.4	3 ²
30	1.33194	3 ⁷		v c ml/g	2.5	3 ²
"C"	0.6522	4		t _c °C	374.0	3 ²
MR (Obs.)	3.710	4		P _c mm	265467.	3 ²
MR (Calc.)	3.725	5		PV/RT		
(nD-d/2)	0.83351	4		25°C	0.9966	4
Dielectric	78.54	3 ⁴		30 mm	0.9918	4
A 60 to	7.96681	4		BP	0.9842	4
B 150 °C	1668.21	4		t _e	0.9811	5
C	228.0	4		t _c	0.1847	4
A* 60 to	1.55544	5		ΔHc kcal/m		
B* 150 °C	1567.76	5		ΔHf		
K				ΔFf		
c				Viscosity centistokes		
t _k to				γ 10 °C	1.3039	3 ⁸
t _x to				40	0.6590	3
A' 0 to	8.10765	4		80	0.3656	3
B' 60 °C	1750.286	4		100	0.2929	3
C'	235.0	4		B ^v to	838.735	4
A** 0 to	1.70544	5		A ^v to	3.14232	4
B** 60 °C	1650.061	5		(B ^v) to		
Ac 230 to	8.23070	4		(A ^v) to		
Bc t _c °C	1902.46	4		c _p liq. 20 °C	1.000	3 ³
Cc t _c °C	257.74	4		c _p vap. 25 °C	0.4454	3 ⁶
Cryos. A*				300	0.4518	3 ⁶
const. B*				c _v vap.		
t _e °C	109.13	5				
† super cooled water (Geo. Thomson equation)			‡ grams/100 grams solvent			
REFERENCES: 1-Dow 2-API 3-Lit. 4-Calc. from det. data 5-Calc. by formula						
SOURCE: Lange						
PURIFICATION: Lange						
LITERATURE REFERENCES: 3' Lange; 3 ² ICT; 3 ³ Steam Tables, (1917) Goodenough; 3 ⁴ NBS 514; 3 ⁵ J. Res. NBS 18, 213 (1937); 3 ⁶ J. Res. NBS 34, 153 (1945); 3 ⁷ J. Res. NBS 20, 446 (1938); 3 ⁸ C & E News, 2092 (1953)						
	A''	150 to	8.214704	4		
	B''	230°C	1863.5	4		
	C''		249.72	4		
	A''*	150 to	1.81403	5		
	B''*	230°C	1761.2	5		

INDEX

Compound	Vol.	Page	Compound	Vol.	Page			
A								
Acetic acid	III	437	Amyl mercaptan	III	429			
Acetonitrile	III	392	2- <i>tert</i> -Amyl-4-methylphenol	I	301			
Acetophenone	I	353	4- <i>tert</i> -Amyl-2-methylphenol	I	299			
Acetylene	II	445	4- <i>tert</i> -Amyl-3-methylphenol	I	300			
Air	III	455	2,6-Di- <i>tert</i> -amyl-4-methylphenol	I	321			
Allene	II	413	2- <i>n</i> -Amylnaphthalene	I	223			
<i>m</i> -Aminobenzotrifluoride	I	344	4- <i>n</i> -Amylphenol	I	298			
1-Aminobutane	III	292	4- <i>tert</i> -Amylphenol	I	297			
2-Aminobutane	III	330	Aniline	I	335			
<i>o</i> -Aminochlorobenzene	I	342	B					
<i>m</i> -Aminochlorobenzene	I	343	Benzene	I	11			
4-Amino-1,3-dimethylbenzene	I	341	Benzenethiol	I	325			
1-Aminodecane	III	298	Benzophenone	I	354			
1-Aminodocosane	III	310	Benzotrifluoride	I	133			
1-Aminododecane	III	300	Benzyl alcohol	I	347			
1-Aminodotriacontane	III	320	Bromine	III	457			
1-Aminoicosane	III	308	Bromobenzene	I	150			
Aminoethane	III	290	1-Bromobutane	III	150			
<i>p</i> -Aminoethylbenzene	I	339	2-Bromobutane	III	188			
<i>o</i> -Aminoethyl benzoate	I	514	2-Bromo-1-butene	III	283			
1-Aminoheneicosane	III	309	<i>cis</i> -1-Bromo-1-butene	III	281			
1-Aminohentriacontane	III	319	<i>trans</i> -1-Bromo-1-butene	III	282			
1-Aminoheptacosane	III	315	2-Bromo- <i>cis</i> -2-butene	III	284			
1-Aminoheptadecane	III	305	2-Bromo- <i>trans</i> -2-butene	III	285			
1-Aminoheptane	III	295	Bromochloromethane	II	198			
1-Aminoheptatriacontane	III	325	<i>o</i> -Bromocumene	I	156			
1-Aminohexacosane	III	314	<i>p</i> -Bromocumene	I	157			
1-Aminohexadecane	III	304	Bromocyclohexane	I	487			
1-Aminohexane	III	294	1-Bromodecane	III	156			
1-Aminohexatriacontane	III	324	2-Bromo-3,3-dimethylbutane	III	199			
Aminomethane	III	289	3-Bromo-2,2-dimethylbutane	III	199			
<i>m</i> -Aminomethylbenzene	I	337	1-Bromo-2,2-dimethylpropane	III	197			
<i>p</i> -Aminomethylbenzene	I	338	<i>p</i> -Bromodiphenyl oxide	I	522			
<i>o</i> -Aminomethyl benzoate	I	513	1-Bromododecane	III	168			
1-Amino-2-methylpropane	III	331	1-Bromododecane	III	158			
2-Amino-2-methylpropane	III	332	1-Bromodotriacontane	III	178			
1-Aminononacosane	III	317	1-Bromoicosane	III	166			
1-Aminononadecane	III	307	Bromoethane	II	207			
1-Aminononane	III	297	Bromoethene	II	406			
1-Aminononatriacontane	III	327	<i>o</i> -Bromoethylbenzene	I	154			
1-Amino-octacosane	III	316	<i>p</i> -Bromoethylbenzene	I	155			
1-Amino-octadecane	III	306	1-Bromo-2-ethylbenzene	I	154			
1-Amino-octane	III	296	1-Bromo-4-ethylbenzene	I	155			
1-Amino-octatriacontane	III	326	(2-Bromoethyl)cyclohexane	I	488			
1-Aminopentacosane	III	313	β -Bromoethylcyclohexane	I	488			
1-Aminopentadecane	III	303	1-Bromoheneicosane	III	167			
1-Aminopentane	III	293	1-Bromohentriacontane	III	177			
1-Aminopentatriacontane	III	323	1-Bromohexacosane	III	173			
1-Aminopropane	III	291	1-Bromoheptadecane	III	163			
2-Aminopropane	III	329	1-Bromoheptane	III	153			
1-Amino-2-propanol	III	447	1-Bromoheptatriacontane	III	183			
1-Aminotetracontane	III	328	<i>cis</i> -1-Bromo-1-heptene	III	286			
1-Aminotetracosane	III	312	<i>trans</i> -1-Bromo-1-heptene	III	286			
1-Aminotetradecane	III	302	1-Bromohexacosane	III	172			
1-Aminotetriacontane	III	322	1-Bromohexadecane	III	162			
1-Aminotriacontane	III	318	1-Bromohexane	III	152			
1-Aminotricosane	III	311	1-Bromohexatriacontane	III	182			
1-Aminotridecane	III	301	1-Bromo-2-isopropylbenzene	I	156			
1-Aminotritriacontane	III	321	1-Bromo-4-isopropylbenzene	I	157			
1-Aminoundecane	III	299	Bromomethane	II	200			
4-Amino- <i>m</i> -xylene	I	341	1-Bromo-2-methylbenzene	I	152			
Ammonia	III	456	1-Bromo-4-methylbenzene	I	153			
<i>n</i> -Amylbenzene	I	47	1-Bromo-2-methylbutane	III	193			

Compound	Vol.	Page	Compound	Vol.	Page
1-Bromo-3-methylbutane	III	194	4,6-Di- <i>tert</i> -butyl-2,3-dimethylphe- nol	I	317
2-Bromo-2-methylbutane	III	195	Butylene	II	219
2-Bromo-3-methylbutane	III	196	<i>tert</i> -Butyl ethyl disulfide	III	436
2-Bromo-4-methylpentane	III	198	2- <i>tert</i> -Butyl-4-ethylphenol	I	307
1-Bromo-2-methylpropane	III	189	4- <i>tert</i> -Butyl-2-ethylphenol	I	306
2-Bromo-2-methylpropane	III	190	2,6-Di- <i>tert</i> -butyl-4-ethylphenol	I	320
1-Bromononacosane	III	175	4,6-Di- <i>tert</i> -butyl-2-ethylphenol	I	318
1-Bromononadecane	III	165	4,6-Di- <i>tert</i> -butyl-3-ethylphenol	I	319
1-Bromononane	III	155	<i>tert</i> -Butyl ethyl sulfide	III	421
1-Bromonatriacontane	III	185	1- <i>n</i> -Butyl-2-methylbenzene	I	55
1-Bromo-octacosane	III	174	1- <i>n</i> -Butyl-3-methylbenzene	I	56
1-Bromo-octadecane	III	164	1- <i>n</i> -Butyl-4-methylbenzene	I	57
1-Bromo-octane	III	154	1- <i>sec</i> -Butyl-2-methylbenzene	I	58
1-Bromo-octatriacontane	III	184	1- <i>sec</i> -Butyl-3-methylbenzene	I	59
1-Bromopentacosane	III	171	1- <i>sec</i> -Butyl-4-methylbenzene	I	60
1-Bromotadecane	III	161	1- <i>tert</i> -Butyl-2-methylbenzene	I	64
1-Bromopentane	III	151	1- <i>tert</i> -Butyl-3-methylbenzene	I	65
2-Bromopentane	III	191	1- <i>tert</i> -Butyl-4-methylbenzene	I	66
3-Bromopentane	III	192	2- <i>sec</i> -Butyl-4-methylphenol	I	296
1-Bromopentatriacontane	III	181	2- <i>tert</i> -Butyl-4-methylphenol	I	295
<i>p</i> -Bromophenyl phenyl ether	I	522	4,6-Di- <i>tert</i> -butyl-2-methylphenol	I	311
1-Bromopropane	III	149	4,6-Di- <i>tert</i> -butyl-3-methylphenol	I	312
2-Bromopropane	III	187	2,6-Di- <i>tert</i> -butyl-4-methylphenol	I	313
<i>cis</i> -1-Bromo-1-propene	III	279	1- <i>n</i> -Butyl-naphthalene	I	220
<i>trans</i> -1-Bromo-1-propene	III	280	2- <i>n</i> -Butyl-naphthalene	I	221
<i>o</i> -Bromostyrene	I	172	2- <i>n</i> -Butylphenol	I	292
1-Bromotetracontane	III	186	3- <i>n</i> -Butylphenol	I	293
1-Bromotetracosane	III	170	4- <i>n</i> -Butylphenol	I	294
1-Bromotetradecane	III	160	2- <i>tert</i> -Butylphenol	I	289
1-Bromotetatriacontane	III	180	4- <i>tert</i> -Butylphenol	I	291
<i>o</i> -Bromotoluene	I	152	2,4-Di- <i>tert</i> -butylphenol	I	308
<i>p</i> -Bromotoluene	I	153	<i>o</i> - <i>tert</i> -Butylphenol	I	289
1-Bromotriaccontane	III	176	<i>m</i> - <i>tert</i> -Butylphenol	I	290
Bromotrichloromethane	II	199	<i>p</i> - <i>tert</i> -Butylphenol	I	291
1-Bromotricosane	III	169	<i>o</i> - <i>n</i> -Butylphenol	I	292
1-Bromotridecane	III	159	<i>m</i> - <i>n</i> -Butylphenol	I	293
1-Bromotritriacontane	III	179	<i>p</i> - <i>n</i> -Butylphenol	I	294
1-Bromoundecane	III	157	<i>o</i> -Butyltoluene	I	55
<i>o</i> -Bromovinylbenzene	I	172	<i>o</i> - <i>sec</i> -Butyltoluene	I	58
<i>p</i> -Bromovinylbenzene	I	173	<i>o</i> - <i>tert</i> -Butyltoluene	I	64
1,2-Butadiene	II	414	<i>m</i> - <i>n</i> -Butyltoluene	I	56
1,3-Butadiene	II	415	<i>m</i> - <i>sec</i> -Butyltoluene	I	59
<i>n</i> -Butane	II	14	<i>m</i> - <i>tert</i> -Butyltoluene	I	65
1-Butene	II	219	<i>p</i> - <i>n</i> -Butyltoluene	I	57
<i>cis</i> -2-Butene	II	220	<i>p</i> - <i>sec</i> -Butyltoluene	I	60
<i>trans</i> -2-Butene	II	221	<i>p</i> - <i>tert</i> -Butyltoluene	I	66
<i>n</i> -Butylacetanilide	I	512	1-Butyne	II	447
Butylamine	III	292	2-Butyne	II	448
<i>sec</i> -Butylamine	III	330	<i>n</i> -Butyric acid	III	439
<i>tert</i> -Butylamine	III	332			
<i>n</i> -Butylaminobenzene	I	340	C		
<i>n</i> -Butylaniline	I	340	Carbon bisulfide	III	458
<i>n</i> -Butylbenzene	I	25	Carbon dioxide	III	459
<i>sec</i> -Butylbenzene	I	27	Carbon disulfide	III	458
<i>tert</i> -Butylbenzene	I	28	Carbon monoxide	III	460
<i>sec</i> -Butyl bromide	II	205	Carbon tetrachloride	II	197
<i>n</i> -Butyl chloride	II	216	Carbonyl chloride	III	461
<i>n</i> -Butyl cyanide	III	395	Chlorine	III	462
<i>n</i> -Butylcyclohexane	I	453	<i>p</i> -Chloroacetophenone	I	355
<i>n</i> -Butylcyclopentane	I	382	<i>o</i> -Chloroaniline	I	342
4- <i>tert</i> -Butyl-2,5-dimethylphenol	I	303	<i>m</i> -Chloroaniline	I	343
4- <i>tert</i> -Butyl-2,6-dimethylphenol	I	304	<i>o</i> -Chlorobenzaldehyde	I	523
6- <i>tert</i> -Butyl-2,4-dimethylphenol	I	302			
6- <i>tert</i> -Butyl-3,4-dimethylphenol	I	305			

Compound	Vol.	Page	Compound	Vol.	Page
Chlorobenzene	I	134	Chloropicrin	III	443
<i>o</i> -Chlorobenzotrichloride	I	142	1-Chloropropane	III	73
1-Chlorobutane	II	216	2-Chloropropane	II	210
	III	74		III	111
2-Chlorobutane	III	112	2-Chloro-1-propene	III	276
<i>o</i> -Chlorocumene	I	148	3-Chloro-1-propene	III	277
<i>p</i> -Chlorocumene	I	149	<i>cis</i> -1-Chloro-1-propene	II	408
1-Chlorododecane	III	80		II	274
2-Chloro-2,3-dimethylbutane	III	119	<i>trans</i> -1-Chloro-1-propene	II	409
2-Chloro-3,3-dimethylbutane	III	120		III	275
1-Chloro-2,2-dimethylpropane	III	118	<i>o</i> -Chlorostyrene	I	170
1-Chlorodocosane	III	92	<i>p</i> -Chlorostyrene	I	171
1-Chlorododecane	III	82	1-Chlorotetracontane	III	110
1-Chlorodotriacontane	III	102	1-Chlorotetracosane	III	94
1-Chloroheicosane	III	90	1-Chlorotetradecane	III	84
Chloroethane	II	201	1-Chlorotetatriacontane	III	104
	III	72	<i>o</i> -Chlorotoluene	I	139
Chloroethene	II	407	1-Chlorotriacontane	III	100
	III	273	1-Chlorotricosane	III	93
<i>o</i> -Chloroethylbenzene	I	144	1-Chlorotridecane	III	83
<i>m</i> -Chloroethylbenzene	I	145	2-Chloro- α,α,α -trifluoro-5-nitro-		
<i>p</i> -Chloroethylbenzene	I	146	toluene	I	508
1-Chloro-2-ethylbenzene	I	144	4-Chloro- α,α,α -trifluoro-3-nitro-		
1-Chloro-3-ethylbenzene	I	145	toluene	I	509
1-Chloro-4-ethylbenzene	I	146	1-Chlorotritriacontane	III	103
Chloroform	II	196	1-Chloroundecane	III	81
	III	137	<i>o</i> -Chlorovinylbenzene	I	170
1-Chloroheneicosane	III	91	<i>p</i> -Chlorovinylbenzene	I	171
1-Chlorohentriacontane	III	101	<i>o</i> -Cresol	I	274
1-Chloroheptacosane	III	97	<i>m</i> -Cresol	I	275
1-Chloroheptadecane	III	87	<i>p</i> -Cresol	I	276
1-Chloroheptane	III	77	Cumene	I	18
1-Chloroheptatriacontane	III	107	<i>cis</i> -1-Cyano-1,3-butadiene	III	451
1-Chlorohexacosane	III	96	Cyclohexane	I	441
1-Chlorohexadecane	III	86	Cyclohexene	I	489
1-Chlorohexane	III	76	1-Cyclohexyldecane	I	459
1-Chlorohexatriacontane	III	106	1-Cyclohexyldecosane	I	471
1-Chloro-2-isopropylbenzene	I	148	1-Cyclohexylododecane	I	461
1-Chloro-4-isopropylbenzene	I	149	1-Cyclohexyldotriacontane	I	481
Chloromethane	II	194	1-Cyclohexyldodecane	I	469
	III	71	1-Cyclohexylheicosane	I	470
1-Chloro-2-methylbenzene	I	139	1-Cyclohexylheneicosane	I	470
2-Chloro-2-methylbutane	III	116	1-Cyclohexylhentriacontane	I	480
2-Chloro-3-methylbutane	III	117	1-Cyclohexylheptacosane	I	476
2-Chloro-2-methylpropane	III	113	1-Cyclohexylheptadecane	I	466
2-Chloro-5-nitrobenzotrifluoride	I	508	1-Cyclohexylheptane	I	456
4-Chloro-3-nitrobenzotrifluoride	I	509	1-Cyclohexylhexacosane	I	475
1-Chlorononacosane	III	99	1-Cyclohexylhexadecane	I	465
1-Chlorononadecane	III	89	1-Cyclohexylhexane	I	455
1-Chlorononane	III	79	1-Cyclohexylhexatriacontane	I	485
1-Chlorononatriacontane	III	109	1-Cyclohexylnonacosane	I	478
1-Chloro-octacosane	III	98	1-Cyclohexylnonadecane	I	468
1-Chloro-octadecane	III	88	1-Cyclohexylnonane	I	458
1-Chloro-octane	III	78	1-Cyclohexyloctacosane	I	477
1-Chloro-octatriacontane	III	108	1-Cyclohexyloctadecane	I	467
1-Chloropentacosane	III	95	1-Cyclohexyloctane	I	457
1-Chloropentadecane	III	85	1-Cyclohexylpentacosane	I	474
1-Chloropentane	III	75	1-Cyclohexylpentadecane	I	464
2-Chloropentane	III	114	1-Cyclohexylpentatriacontane	I	484
3-Chloropentane	III	115	1-Cyclohexyltetracosane	I	473
1-Chloropentatriacontane	III	105	1-Cyclohexyltetradecane	I	463
<i>p</i> -Chlorophenethyl alcohol	I	352	1-Cyclohexyltetriacontane	I	483
<i>o</i> -Chlorophenol	I	324	1-Cyclohexyltriacontane	I	479
<i>p</i> -Chloro- <i>p</i> -phenyl ethyl alcohol	I	352	1-Cyclohexyltricosane	I	472
			1-Cyclohexyltridecane	I	462

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1-Cyclohexyltrtriacontane.....	I	482		III	210
1-Cyclohexylundecane.....	I	460	1,1-Dibromoheptane.....	III	206
Cyclo-octatetraene.....	I	517	1,1-Dibromohexane.....	III	205
Cyclopentane.....	I	359	Dibromomethane.....	III	200
Cyclopentene.....	I	415	1,2-Dibromo-2-methylbutane.....	III	217
1-Cyclopentyldecane.....	I	388	2,3-Dibromo-2-methylbutane.....	III	218
1-Cyclopentyldocosane.....	I	400	1,1-Dibromononane.....	III	208
1-Cyclopentylododecane.....	I	390	1,1-Dibromo-octane.....	III	207
1-Cyclopentylodotriacontane.....	I	410	1,1-Dibromopentane.....	III	204
1-Cyclopentyleicosane.....	I	398	1,4-Dibromopentane.....	III	215
1-Cyclopentylheneicosane.....	I	399	1,5-Dibromopentane.....	III	216
1-Cyclopentylhentriacontane.....	I	409	1,1-Dibromopropane.....	III	202
1-Cyclopentylheptacosane.....	I	405	1,2-Dibromopropane.....	II	214
1-Cyclopentylheptadecane.....	I	395		III	211
1-Cyclopentylheptane.....	I	385	1,3-Dibromopropane.....	II	213
1-Cyclopentylhexacosane.....	I	404		III	212
1-Cyclopentylhexadecane.....	I	394	Di- <i>n</i> -butylamine.....	III	338
1-Cyclopentylhexane.....	I	384	<i>N,N</i> -Dibutylaniline.....	III	454
1-Cyclopentylhexatriacontane.....	I	414	<i>o</i> -Dichlorobenzene.....	I	135
1-Cyclopentylnonacosane.....	I	407	<i>m</i> -Dichlorobenzene.....	I	136
1-Cyclopentylnonadecane.....	I	397	<i>p</i> -Dichlorobenzene.....	I	137
1-Cyclopentylnonane.....	I	387	1,2-Dichlorobenzene.....	I	135
1-Cyclopentylotacosane.....	I	406	1,3-Dichlorobenzene.....	I	136
1-Cyclopentylotadecane.....	I	396	1,4-Dichlorobenzene.....	I	137
1-Cyclopentylotactane.....	I	386	3,4-Dichlorobenzotrchloride.....	I	143
1-Cyclopentylpentacosane.....	I	403	2,4-Dichlorobenzyl chloride.....	I	141
1-Cyclopentylpentadecane.....	I	393	1,1-Dichlorobutane.....	III	124
1-Cyclopentylpentane.....	I	383	1,4-Dichlorobutane.....	III	135
1-Cyclopentylpentatriacontane.....	I	413	1,1-Dichlorodecane.....	III	130
1-Cyclopentyltetracosane.....	I	402	1,1-Dichloroethane.....	III	122
1-Cyclopentyltetradecane.....	I	392	1,2-Dichloroethane.....	II	202
1-Cyclopentyltetraatriacontane.....	I	412		III	131
1-Cyclopentyltriacontane.....	I	408	1,1-Dichloroheptane.....	III	127
1-Cyclopentyltricosane.....	I	401	1,1-Dichlorohexane.....	III	126
1-Cyclopentyltridecane.....	I	391	Dichloromethane.....	II	195
1-Cyclopentyltritiacontane.....	I	411		III	121
1-Cyclopentylundecane.....	I	389	3,4-Dichloro-1-methylbenzene.....	I	140
			1,1-Dichlorononane.....	III	129
			1,1-Dichloro-octane.....	III	128
			1,1-Dichloropentane.....	III	125
			1,5-Dichloropentane.....	III	136
			1,1-Dichloropropane.....	III	123
			1,2-Dichloropropane.....	II	211
				III	132
			1,3-Dichloropropane.....	III	133
			2,2-Dichloropropane.....	III	134
			3,4-Dichlorotoluene.....	I	140
			2,5-Dichloro- <i>p</i> -xylene.....	I	147
			Di- <i>n</i> -decylamine.....	III	344
			Di- <i>n</i> -dodecylamine.....	III	346
			Di- <i>n</i> -eicosylamine.....	III	354
			Diethylamine.....	III	336
			<i>o</i> -Diethylbenzene.....	I	35
			<i>m</i> -Diethylbenzene.....	I	36
			<i>p</i> -Diethylbenzene.....	I	37
			1,2-Diethylbenzene.....	I	35
			1,3-Diethylbenzene.....	I	36
			1,4-Diethylbenzene.....	I	37
			Diethyl disulfide.....	III	432
			3,3-Diethylhexane.....	II	132
			3,4-Diethylhexane.....	II	133
			2,3-Diethyl-1-methylbenzene.....	I	85
			2,4-Diethyl-1-methylbenzene.....	I	86
			2,5-Diethyl-1-methylbenzene.....	I	87

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<i>cis</i> -Decahydronaphthalene.....	I	263
<i>trans</i> -Decahydronaphthalene.....	I	264
<i>n</i> -Decane.....	II	86
1-Decene.....	II	375
Decylamine.....	III	298
<i>n</i> -Decylbenzene.....	I	105
<i>n</i> -Decyl cyanide.....	III	401
<i>n</i> -Decylcyclohexane.....	I	459
<i>n</i> -Decylcyclopentane.....	I	388
1- <i>n</i> -Decylnaphthalene.....	I	232
2- <i>n</i> -Decylnaphthalene.....	I	233
1-Decyne.....	II	456
<i>o</i> -Dibromobenzene.....	I	151
1,2-Dibromobenzene.....	I	141
1,3-Dibromo-2-(bromomethyl)- propane.....	III	225
1,1-Dibromobutane.....	III	203
1,2-Dibromobutane.....	III	213
1,4-Dibromobutane.....	III	214
1,1-Dibromodecane.....	III	209
1,2-Dibromo-1,1-dichloroethane.....	II	206
1,1-Dibromo-2,2-dimethylpropane.....	III	219
1,1-Dibromoethane.....	III	201
1,2-Dibromoethane.....	II	208

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2,6-Diethyl-1-methylbenzene	I	88	1, <i>trans</i> -2-Dimethylcyclohexane	I	446
3,4-Diethyl-1-methylbenzene	I	89	1, <i>cis</i> -3-Dimethylcyclohexane	I	447
3,5-Diethyl-1-methylbenzene	I	90	1, <i>trans</i> -3-Dimethylcyclohexane	I	448
3,3-Diethyl-2-methylpentane	II	155	1, <i>cis</i> -4-Dimethylcyclohexane	I	449
3,3-Diethylpentane	II	78	1, <i>trans</i> -4-Dimethylcyclohexane	I	450
Diethyl sulfide	III	416	1,2-Dimethylcyclohexene	I	496
2,3-Diethyltoluene	I	85	1,3-Dimethylcyclohexene	I	497
2,4-Diethyltoluene	I	86	1,4-Dimethylcyclohexene	I	498
2,5-Diethyltoluene	I	87	1,5-Dimethylcyclohexene	I	499
2,6-Diethyltoluene	I	88	1,6-Dimethylcyclohexene	I	500
3,4-Diethyltoluene	I	89	2,3-Dimethylcyclohexene	I	500
3,5-Diethyltoluene	I	90	2,4-Dimethylcyclohexene	I	499
1,1-Difluorobutane	III	59	3,3-Dimethylcyclohexene	I	501
2,2-Difluorobutane	III	67	4,4-Dimethylcyclohexene	I	502
1,1-Difluorodecane	III	65	1,1-Dimethylcyclopentane	I	362
1,1-Difluorododecane	III	57	<i>cis</i> -1,2-Dimethylcyclopentane	I	363
1,1-Difluoroheptane	III	62	<i>trans</i> -1,2-Dimethylcyclopentane	I	364
1,1-Difluorohexane	III	61	<i>cis</i> -1,3-Dimethylcyclopentane	I	365
Difluoromethane	III	56	<i>trans</i> -1,3-Dimethylcyclopentane	I	366
1,1-Difluorononane	III	64	1,2-Dimethylcyclopentene	I	422
1,1-Difluoro-octane	III	63	1,3-Dimethylcyclopentene	I	423
1,1-Difluoropentane	III	60	1,4-Dimethylcyclopentene	I	424
2,2-Difluoropentane	III	68	1,5-Dimethylcyclopentene	I	425
3,3-Difluoropentane	III	69	3,3-Dimethylcyclopentene	I	426
1,1-Difluoropropane	III	58	4,4-Dimethylcyclopentene	I	427
2,2-Difluoropropane	III	66	1,10-Dimethyl-(<i>cis</i> -decahydro)- naphthalene	I	270
Di- <i>n</i> -heptadecylamine	III	351	1,10-Dimethyl-(<i>trans</i> -decahydro)- naphthalene	I	271
Di- <i>n</i> -heptylamine	III	341	Dimethyl- <i>n</i> -decylamine	III	356
Di- <i>n</i> -hexadecylamine	III	350	2,2-Dimethyl-3,4-dithiahexane	III	436
Di- <i>n</i> -hexylamine	III	340	2,5-Dimethyl-3,4-dithiahexane	III	435
1,2-Diiodoethane	III	270	Dimethyl- <i>n</i> -docosylamine	III	364
Diiodomethane	III	269	Dimethyl- <i>n</i> -dodecylamine	III	357
2,2-Diiodopropane	III	271	Dimethyl- <i>n</i> -dotriacontylamine	III	374
2,2-Diisobutyl-4-methylphenol	I	316	Dimethyl- <i>n</i> -eicosylamine	III	362
4-Diisobutyl-2-methylphenol	I	314	Dimethyl- <i>n</i> -fornosylamine	III	444
4-Diisobutyl-3-methylphenol	I	315	Dimethyl- <i>n</i> -heneicosylamine	III	363
4-Diisobutylphenol	I	309	Dimethyl- <i>n</i> -hentriacontylamine	III	373
<i>o</i> -Diisopropylbenzene	I	99	Dimethyl- <i>n</i> -heptacosylamine	III	369
<i>m</i> -Diisopropylbenzene	I	100	2,2-Dimethylheptane	II	57
<i>p</i> -Diisopropylbenzene	I	101	2,3-Dimethylheptane	II	58
1,2-Diisopropylbenzene	I	99	2,4-Dimethylheptane	II	59
1,3-Diisopropylbenzene	I	100	2,5-Dimethylheptane	II	60
1,4-Diisopropylbenzene	I	101	2,6-Dimethylheptane	II	61
Dimethylacetylene	II	448	3,3-Dimethylheptane	II	62
Dimethylamine	III	335	3,4-Dimethylheptane	II	63
1,2-Dimethylbenzene	I	14	3,5-Dimethylheptane	II	64
1,3-Dimethylbenzene	I	15	4,4-Dimethylheptane	II	65
1,4-Dimethylbenzene	I	16	Dimethyl- <i>n</i> -heptatriacontylamine	III	379
2,4-Dimethylbenzenethiol	I	332	Dimethyl- <i>n</i> -hexacosylamine	III	368
2,5-Dimethylbenzenethiol	I	333	Dimethyl- <i>n</i> -hexadecylamine	III	359
2,3-Dimethyl-1,3-butadiene	II	444	2,2-Dimethylhexane	II	38
2,2-Dimethylbutane	II	22	2,3-Dimethylhexane	II	39
2,3-Dimethylbutane	II	23	2,4-Dimethylhexane	II	40
2,3-Dimethyl-1-butene	II	243	2,5-Dimethylhexane	II	41
3,3-Dimethyl-1-butene	II	244	3,3-Dimethylhexane	II	42
2,3-Dimethyl-2-butene	II	245	3,4-Dimethylhexane	II	43
2,3-Dimethylcumene	I	79	Dimethyl- <i>n</i> -hexatriacontylamine	III	378
2,4-Dimethylcumene	I	82	2,3-Dimethyl-1-hexene	II	316
2,5-Dimethylcumene	I	84	2,4-Dimethyl-1-hexene	II	317
2,6-Dimethylcumene	I	81	2,5-Dimethyl-1-hexene	II	318
3,4-Dimethylcumene	I	80	3,3-Dimethyl-1-hexene	II	319
3,5-Dimethylcumene	I	83	3,4-Dimethyl-1-hexene	II	320
1,1-Dimethylcyclohexane	I	444			
1, <i>cis</i> -2-Dimethylcyclohexane	I	445			

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3,5-Dimethyl-1-hexene	II	321	2,4-Dimethylpentane	II	30
4,4-Dimethyl-1-hexene	II	322	3,3-Dimethylpentane	II	31
4,5-Dimethyl-1-hexene	II	323	Dimethyl- <i>n</i> -pentatriacontylamine	II	377
5,5-Dimethyl-1-hexene	II	324	2,3-Dimethyl-1-pentene	II	268
2,3-Dimethyl-2-hexene	II	329	2,4-Dimethyl-1-pentene	II	269
2,4-Dimethyl-2-hexene	II	330	3,3-Dimethyl-1-pentene	II	270
2,5-Dimethyl-2-hexene	II	331	3,4-Dimethyl-1-pentene	II	271
3,4-Dimethyl- <i>cis</i> -2-hexene	II	332	4,4-Dimethyl-1-pentene	II	272
3,4-Dimethyl- <i>trans</i> -2-hexene	II	333	2,3-Dimethyl-2-pentene	II	274
3,5-Dimethyl- <i>cis</i> -2-hexene	II	334	2,4-Dimethyl-2-pentene	II	275
3,5-Dimethyl- <i>trans</i> -2-hexene	II	335	3,4-Dimethyl- <i>trans</i> -2-pentene	II	276
4,4-Dimethyl- <i>cis</i> -2-hexene	II	336	3,4-Dimethyl- <i>trans</i> -2-pentene	II	277
4,4-Dimethyl- <i>trans</i> -2-hexene	II	337	4,4-Dimethyl- <i>cis</i> -2-pentene	II	278
4,5-Dimethyl- <i>cis</i> -2-hexene	II	338	4,4-Dimethyl- <i>trans</i> -2-pentene	II	279
4,5-Dimethyl- <i>trans</i> -2-hexene	II	339	2,3-Dimethylphenol	I	277
5,5-Dimethyl- <i>cis</i> -2-hexene	II	340	2,4-Dimethylphenol	I	278
5,5-Dimethyl- <i>trans</i> -2-hexene	II	341	2,5-Dimethylphenol	I	279
2,2-Dimethyl- <i>cis</i> -3-hexene	II	343	2,6-Dimethylphenol	I	280
2,2-Dimethyl- <i>trans</i> -3-hexene	II	344	3,4-Dimethylphenol	I	281
2,3-Dimethyl- <i>cis</i> -3-hexene	II	345	3,5-Dimethylphenol	I	282
2,3-Dimethyl- <i>trans</i> -3-hexene	II	346	2,2-Dimethylpropane	II	18
2,4-Dimethyl- <i>cis</i> -3-hexene	II	347	(1,1-Dimethylpropyl)benzene	I	52
2,4-Dimethyl- <i>trans</i> -3-hexene	II	348	(1,2-Dimethylpropyl)benzene	I	53
2,5-Dimethyl- <i>cis</i> -3-hexene	II	349	1,2-Dimethyl-3- <i>n</i> -propylbenzene	I	73
2,5-Dimethyl- <i>trans</i> -3-hexene	II	350	1,2-Dimethyl-4- <i>n</i> -propylbenzene	I	74
3,4-Dimethyl- <i>cis</i> -3-hexene	II	351	1,3-Dimethyl-2- <i>n</i> -propylbenzene	I	75
3,4-Dimethyl- <i>trans</i> -3-hexene	II	352	1,3-Dimethyl-4- <i>n</i> -propylbenzene	I	76
1,2-Dimethyl-3-isopropylbenzene	I	79	1,3-Dimethyl-5- <i>n</i> -propylbenzene	I	77
1,2-Dimethyl-4-isopropylbenzene	I	80	1,4-Dimethyl-2- <i>n</i> -propylbenzene	I	78
1,3-Dimethyl-2-isopropylbenzene	I	81	(2,2-Dimethylpropyl)benzene	I	54
1,3-Dimethyl-4-isopropylbenzene	I	82	Dimethyl- <i>n</i> -tetracosylamine	III	366
1,3-Dimethyl-5-isopropylbenzene	I	83	Dimethyl- <i>n</i> -tetradecylamine	III	358
1,4-Dimethyl-2-isopropylbenzene	I	84	1, <i>cis</i> -2-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	249
1,2-Dimethylnaphthalene	I	208	1, <i>cis</i> -3-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	250
1,3-Dimethylnaphthalene	I	209	1, <i>cis</i> -4-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	251
1,4-Dimethylnaphthalene	I	210	1,1-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	248
1,5-Dimethylnaphthalene	I	211	1,5-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	254
1,6-Dimethylnaphthalene	I	212	2, <i>cis</i> -3-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	253
1,7-Dimethylnaphthalene	I	213	2,2-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	252
1,8-Dimethylnaphthalene	I	214	2,5-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	255
2,3-Dimethylnaphthalene	I	215	2,6-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	256
2,6-Dimethylnaphthalene	I	216	2,7-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	257
2,7-Dimethylnaphthalene	I	217	2,8-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	258
Dimethyl- <i>n</i> -nonacosylamine	III	371	5,6-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	259
Dimethyl- <i>n</i> -nonadecylamine	III	361	5,7-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	260
Dimethyl- <i>n</i> -octacosylamine	III	370	5,8-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	261
Dimethyl- <i>n</i> -octadecylamine	III	360	6,7-Dimethyl-1,2,3,4-tetrahydro- naphthalene	I	262
2,2-Dimethyloctane	II	93	Dimethyl- <i>n</i> -tetratriacontylamine	III	376
2,3-Dimethyloctane	II	94	2, <i>cis</i> -5-Dimethylthiacyclopentane	I	434
2,4-Dimethyloctane	II	95			
2,5-Dimethyloctane	II	96			
2,6-Dimethyloctane	II	97			
2,7-Dimethyloctane	II	98			
3,3-Dimethyloctane	II	99			
3,4-Dimethyloctane	II	100			
3,5-Dimethyloctane	II	101			
3,6-Dimethyloctane	II	102			
4,4-Dimethyloctane	II	103			
4,5-Dimethyloctane	II	104			
Dimethyl- <i>n</i> -octatriacontylamine	III	380			
Dimethyl- <i>n</i> -octylamine	III	355			
Dimethyl- <i>n</i> -pentacosylamine	III	367			
2,2-Dimethylpentane	II	28			
2,3-Dimethylpentane	II	29			

Compound	Vol.	Page	Compound	Vol.	Page
2, <i>trans</i> -5-Dimethylthiacyclopentane	I	435	<i>n</i> -Eicosylbenzene	I	115
2,2-Dimethylthiacyclopropane	I	440	<i>n</i> -Eicosyl cyanide	III	411
2,2-Dimethyl-3-thiapentane	III	421	<i>n</i> -Eicosylcyclohexane	I	469
2,4-Dimethyl-3-thiapentane	III	420	<i>n</i> -Eicosylcyclopentane	I	398
2,2-Dimethylthiirane	I	440	1-Eicosyne	II	466
2,3-Dimethylthiophene	I	188	Ethane	II	12
2,4-Dimethylthiophene	I	189	Ethanethiol	III	427
2,5-Dimethylthiophene	I	190	Ethene	II	217
3,4-Dimethylthiophene	I	191	Ethylacetylene	II	447
2,4-Dimethylthiophenol	I	332	Ethylamine	III	290
2,5-Dimethylthiophenol	I	333	<i>p</i> -Ethylaniline	I	339
Dimethyl- <i>n</i> -triacontylamine	III	372	Ethyl anthranilate	I	514
Dimethyl- <i>n</i> -tricosylamine	III	365	Ethylbenzene	I	13
Dimethyl- <i>n</i> -tritiacontylamine	III	375	2-Ethylbenzenethiol	I	329
Di- <i>n</i> -nonadecylamine	III	353	3-Ethylbenzenethiol	I	330
Di- <i>n</i> -nonylamine	III	343	4-Ethylbenzenethiol	I	331
Di- <i>n</i> -octadecylamine	III	352	Ethyl bromide	II	207
Di- <i>n</i> -octylamine	III	342	2-Ethyl-1,3-butadiene	II	443
Di- <i>n</i> -pentadecylamine	III	349	2-Ethyl-1-butene	II	242
Di- <i>n</i> -pentylamine	III	339	Ethyl chloride	II	201
Diphenyl ether	I	521	<i>o</i> -Ethylcumene	I	70
Diphenyl ketone	I	354	<i>m</i> -Ethylcumene	I	71
Diphenylmethane	I	518	<i>p</i> -Ethylcumene	I	72
Diphenyl oxide	I	521	Ethyl cyanide	III	393
Di- <i>n</i> -propylamine	III	337	Ethylcyclohexane	I	443
Di- <i>n</i> -propyl sulfide	III	425	1-Ethylcyclohexene	I	493
Di- <i>n</i> -tetradecylamine	III	348	3-Ethylcyclohexene	I	494
2,3-Dithiabutane	III	431	4-Ethylcyclohexene	I	495
3,4-Dithiaheptane	III	434	Ethylcyclopentane	I	361
3,4-Dithiahexane	III	432	1-Ethylcyclopentene	I	419
Di- <i>n</i> -tridecylamine	III	347	3-Ethylcyclopentene	I	420
Di- <i>n</i> -undecylamine	III	345	4-Ethylcyclopentene	I	421
<i>n</i> -Docosane	II	172	9-Ethyl- <i>cis</i> -decahydronaphthalene)	I	268
1-Docosene	II	387	9-Ethyl- <i>trans</i> -decahydronaphthalene)	I	269
Docosylamine	III	310	2-Ethyl-1,3-dimethylbenzene	I	38
<i>n</i> -Docosylbenzene	I	117	2-Ethyl-1,4-dimethylbenzene	I	39
<i>n</i> -Docosylcyclohexane	I	471	3-Ethyl-1,2-dimethylbenzene	I	40
<i>n</i> -Docosylcyclopentane	I	400	4-Ethyl-1,2-dimethylbenzene	I	41
1-Docosyne	II	468	4-Ethyl-1,3-dimethylbenzene	I	42
<i>n</i> -Dodecane	II	162	5-Ethyl-1,3-dimethylbenzene	I	43
1-Dodecene	II	377	3-Ethyl-2,2-dimethylhexane	II	134
Dodecylamine	III	300	4-Ethyl-2,2-dimethylhexane	II	135
<i>n</i> -Dodecylbenzene	I	107	3-Ethyl-2,3-dimethylhexane	II	136
<i>n</i> -Dodecyl cyanide	III	403	4-Ethyl-2,3-dimethylhexane	II	137
<i>n</i> -Dodecylcyclohexane	I	461	3-Ethyl-2,4-dimethylhexane	II	138
<i>n</i> -Dodecylcyclopentane	I	390	4-Ethyl-2,4-dimethylhexane	II	139
1- <i>n</i> -Dodecyl naphthalene	I	236	3-Ethyl-2,5-dimethylhexane	II	140
2- <i>n</i> -Dodecyl naphthalene	I	237	4-Ethyl-3,3-dimethylhexane	II	141
1-Dodecyne	II	458	3-Ethyl-3,4-dimethylhexane	II	142
<i>n</i> -Dotriacontane	II	182	3-Ethyl-2,2-dimethylpentane	II	79
1-Dotriacontene	II	397	3-Ethyl-2,3-dimethylpentane	II	80
Dotriacontylamine	III	320	3-Ethyl-2,4-dimethylpentane	II	81
<i>n</i> -Dotriacontylbenzene	I	127	Ethyl disulfide	III	432
<i>n</i> -Dotriacontylcyclohexane	I	481	Ethylene	II	217
<i>n</i> -Dotriacontylcyclopentane	I	410	Ethylene dibromide	II	208
1-Dotriacontyne	II	478	Ethylene sulfide	I	437
Durene	I	46	3-Ethylheptane	II	55
			4-Ethylheptane	II	56
			3-Ethylhexane	II	37
			2-Ethyl-1-hexene	II	313
			3-Ethyl-1-hexene	II	314
			3-Ethyl-3-hexene	II	342
E					
<i>n</i> -Eicosane	II	170			
1-Eicosene	II	385			
Eicosylamine	III	308			

Compound	Vol.	Page	Compound	Vol.	Page
4-Ethyl-1-hexene	II	315	<i>o</i> -Ethyl β -phenyl ethyl alcohol	I	350
3-Ethyl- <i>cis</i> -2-hexene	II	325	<i>p</i> -Ethyl β -phenyl ethyl alcohol	I	351
3-Ethyl- <i>trans</i> -2-hexene	II	326	Ethyl phenyl ketone	I	356
4-Ethyl- <i>cis</i> -2-hexene	II	327	Ethyl phenyl sulfide	I	176
4-Ethyl- <i>trans</i> -2-hexene	II	328	(1-Ethylpropyl)benzene	I	49
1-Ethyl-2-isopropylbenzene	I	70	1-Ethyl-2- <i>n</i> -propylbenzene	I	67
1-Ethyl-3-isopropylbenzene	I	71	1-Ethyl-3- <i>n</i> -propylbenzene	I	68
1-Ethyl-4-isopropylbenzene	I	72	1-Ethyl-4- <i>n</i> -propylbenzene	I	69
Ethyl mercaptan	III	427	<i>m</i> -Ethylstyrene	I	166
2-Ethyl-1-methylbenzene	I	22	<i>p</i> -Ethylstyrene	I	167
3-Ethyl-1-methylbenzene	I	23	Ethyl sulfide	III	416
4-Ethyl-1-methylbenzene	I	24	1-Ethyl-1,2,3,4-tetrahydronaphthalene	I	244
2-Ethyl-3-methyl-1-butene	II	280	2-Ethyl-1,2,3,4-tetrahydronaphthalene	I	245
1-Ethyl-1-methylcyclopentane	I	369	5-Ethyl-1,2,3,4-tetrahydronaphthalene	I	246
<i>cis</i> -1-Ethyl-2-methylcyclopentane	I	370	6-Ethyl-1,2,3,4-tetrahydronaphthalene	I	247
<i>trans</i> -1-Ethyl-2-methylcyclopentane	I	371	3-Ethyltetrahydrothiophene	I	433
<i>cis</i> -1-Ethyl-3-methylcyclopentane	I	372	2-Ethylthiacyclopentane	I	432
<i>trans</i> -1-Ethyl-3-methylcyclopentane	I	373	3-Ethylthiacyclopentane	I	433
3-Ethyl-2-methylheptane	II	107	2-Ethylthiacyclopropane	I	439
4-Ethyl-2-methylheptane	II	108	2-Ethyl-(1-thiaethyl)-benzene	I	182
5-Ethyl-2-methylheptane	II	109	<i>o</i> -Ethyl-(1-thiaethyl)-benzene	I	182
3-Ethyl-3-methylheptane	II	110	2-Ethylthiirane	I	439
4-Ethyl-3-methylheptane	II	111	2-Ethylthiophene	I	186
5-Ethyl-3-methylheptane	II	112	3-Ethylthiophene	I	187
3-Ethyl-4-methylheptane	II	113	<i>o</i> -Ethylthiophenol	I	329
4-Ethyl-4-methylheptane	II	114	<i>m</i> -Ethylthiophenol	I	330
3-Ethyl-2-methylhexane	II	66	<i>p</i> -Ethylthiophenol	I	331
4-Ethyl-2-methylhexane	II	67	<i>o</i> -Ethyltoluene	I	22
3-Ethyl-3-methylhexane	II	68	<i>m</i> -Ethyltoluene	I	23
4-Ethyl-3-methylhexane	II	69	<i>p</i> -Ethyltoluene	I	24
3-Ethyl-2-methylpentane	II	44	2-Ethyl-1,3,5-trimethylbenzene	I	91
3-Ethyl-3-methylpentane	II	45	3-Ethyl-1,2,4-trimethylbenzene	I	92
2-Ethyl-3-methyl-1-pentene	II	355	4-Ethyl-1,2,3-trimethylbenzene	I	93
2-Ethyl-4-methyl-1-pentene	II	356	5-Ethyl-1,2,3-trimethylbenzene	I	94
3-Ethyl-2-methyl-1-pentene	II	357	5-Ethyl-1,2,4-trimethylbenzene	I	95
3-Ethyl-3-methyl-1-pentene	II	358	6-Ethyl-1,2,4-trimethylbenzene	I	96
3-Ethyl-4-methyl-1-pentene	II	359	3-Ethyl-2,2,3-trimethylpentane	II	156
3-Ethyl-2-methyl-2-pentene	II	365	3-Ethyl-2,2,4-trimethylpentane	II	157
3-Ethyl-4-methyl- <i>cis</i> -2-pentene	II	366	3-Ethyl-2,3,4-trimethylpentane	II	158
3-Ethyl-4-methyl- <i>trans</i> -2-pentene	II	367	<i>m</i> -Ethylvinylbenzene	I	166
Ethyl methyl sulfide	III	414	<i>p</i> -Ethylvinylbenzene	I	167
2-Ethyl-3-methylthiophene	I	196	2-Ethyl- <i>m</i> -xylene	I	38
3-Ethyl-2-methylthiophene	I	197	2-Ethyl- <i>p</i> -xylene	I	39
4-Ethyl-2-methylthiophene	I	198	3-Ethyl- <i>o</i> -xylene	I	40
5-Ethyl-2-methylthiophene	I	199	4-Ethyl- <i>o</i> -xylene	I	41
1-Ethyl-naphthalene	I	206	4-Ethyl- <i>m</i> -xylene	I	42
2-Ethyl-naphthalene	I	207	5-Ethyl- <i>m</i> -xylene	I	43
<i>o</i> -Ethyl-nitrobenzene	I	346	Ethyne	II	445
3-Ethyl-octane	II	91			
4-Ethyl-octane	II	92	F		
3-Ethyl-pentane	II	27	Fluorobenzene	I	132
2-Ethyl-1-pentene	II	266	1-Fluorobutane	III	14
3-Ethyl-1-pentene	II	267	2-Fluorobutane	III	32
3-Ethyl-2-pentene	II	273	1-Fluorodecane	III	20
<i>o</i> -Ethyl phenethyl alcohol	I	350	1-Fluorodocosane	III	37
<i>p</i> -Ethyl phenethyl alcohol	I	351	1-Fluorododecane	III	22
2-Ethylphenol	I	283	1-Fluorodotriacontane	III	47
3-Ethylphenol	I	284	1-Fluoroeicosane	III	30
4-Ethylphenol	I	285	Fluoroethane	III	12
<i>o</i> -Ethylphenol	I	283			
<i>m</i> -Ethylphenol	I	284			
<i>p</i> -Ethylphenol	I	285			

Compound	Vol.	Page	Compound	Vol.	Page
1-Fluoroheneicosane	III	36	<i>n</i> -Heptacosylcyclopentane	I	405
1-Fluorohentriacontane	III	46	1-Heptacosyne	II	473
1-Fluoroheptacosane	III	42	<i>n</i> -Heptadecane	II	167
1-Fluoroheptadecane	III	27	1-Heptadecene	II	382
1-Fluoroheptane	III	17	Heptadecylamine	III	305
1-Fluoroheptatriacontane	III	52	<i>n</i> -Heptadecylbenzene	I	112
1-Fluorohexacosane	III	41	<i>n</i> -Heptadecyl cyanide	III	408
1-Fluorohexadecane	III	26	<i>n</i> -Heptadecylcyclohexane	I	466
1-Fluorohexane	III	16	<i>n</i> -Heptadecylcyclopentane	I	395
3-Fluorohexane	III	35	1-Heptadecyne	II	463
1-Fluorohexatriacontane	III	51	<i>n</i> -Heptane	II	24
Fluoromethane	II	191	<i>n</i> -Heptatriacontane	II	187
	III	11	1-Heptatriacontene	II	402
2-Fluoro-2-methylbutane	III	34	Heptatriacontylamine	III	325
2-Fluoro-2-methylpropane	III	33	1-Heptatriacontyne	II	483
1-Fluorononacosane	III	44	1-Heptene	II	246
1-Fluorononadecane	III	29	<i>cis</i> -2-Heptene	II	247
1-Fluorononane	III	19	<i>trans</i> -2-Heptene	II	248
1-Fluorononatriacontane	III	54	<i>cis</i> -3-Heptene	II	249
1-Fluoro-octacosane	III	43	<i>trans</i> -3-Heptene	II	250
1-Fluoro-octadecane	III	28	Heptylamine	III	295
1-Fluoro-octane	III	18	<i>n</i> -Heptylbenzene	I	102
1-Fluoro-octatriacontane	III	53	Heptyl cyanide	III	398
1-Fluoropentacosane	III	40	<i>n</i> -Heptylcyclohexane	I	456
1-Fluoropentadecane	III	25	<i>n</i> -Heptylcyclopentane	I	385
1-Fluoropentane	III	15	1- <i>n</i> -Heptylnaphthalene	I	226
1-Fluoropentatriacontane	III	50	2- <i>n</i> -Heptylnaphthalene	I	227
1-Fluoropropane	III	13	1-Heptyne	I	453
2-Fluoropropane	III	31	γ -Hexachlorocyclohexane	I	486
1-Fluorotetracontane	III	55	Hexachloropropene	II	412
1-Fluorotetracosane	III	39	Hexachloropropylene	II	412
1-Fluorotetradecane	III	24	<i>n</i> -Hexacosane	II	176
1-Fluorotetraatriacontane	III	49	1-Hexacosene	II	391
1-Fluorotriacontane	III	45	Hexacosylamine	III	314
1-Fluorotricosane	III	38	<i>n</i> -Hexacosylbenzene	I	121
1-Fluorotridecane	III	23	<i>n</i> -Hexacosylcyclohexane	I	475
1-Fluorotritriacontane	III	48	<i>n</i> -Hexacosylcyclopentane	I	404
1-Fluoroundecane	III	21	1-Hexacosyne	II	472
Furan	I	516	<i>n</i> -Hexadecane	II	166
Furfurane	I	516	1-Hexadecene	II	381
			Hexadecylamine	III	304
			<i>n</i> -Hexadecylbenzene	I	111
H			<i>n</i> -Hexadecyl cyanide	III	407
Hemimellitene	I	19	<i>n</i> -Hexadecylcyclohexane	I	465
<i>n</i> -Heneicosane	II	171	<i>n</i> -Hexadecylcyclopentane	I	394
1-Heneicosene	II	386	1-Hexadecyne	II	462
Hexacosylamine	III	309	1,2-Hexadiene	II	423
<i>n</i> -Hexacosylbenzene	I	116	1, <i>cis</i> -3-Hexadiene	II	424
<i>n</i> -Hexacosylcyclohexane	I	470	1, <i>trans</i> -3-Hexadiene	II	425
<i>n</i> -Hexacosylcyclopentane	I	399	1, <i>cis</i> -4-Hexadiene	II	426
1-Heneicosyne	II	467	1, <i>trans</i> -4-Hexadiene	II	427
1-Hentriacontane	I	126	1,5-Hexadiene	II	428
<i>n</i> -Hentriacontane	II	181	2,3-Hexadiene	II	429
1-Hentriacontene	II	396	<i>cis</i> -2, <i>cis</i> -4-Hexadiene	II	430
Hentriacontylamine	III	319	<i>cis</i> -2, <i>trans</i> -4-Hexadiene	II	431
<i>n</i> -Hentriacontylbenzene	I	126	<i>trans</i> -2, <i>trans</i> -4-Hexadiene	II	432
<i>n</i> -Hentriacontylcyclohexane	I	480	γ -Hexane	I	486
<i>n</i> -Hentriacontylcyclopentane	I	409	<i>n</i> -Hexane	II	19
1-Hentriacontyne	II	477	<i>n</i> -Hexatriacontane	II	186
<i>n</i> -Heptacosane	II	177	1-Hexatriacontene	II	401
1-Heptacosene	II	392	Hexatriacontylamine	III	324
Hexacosylamine	III	315	<i>n</i> -Hexatriacontylbenzene	I	131
<i>n</i> -Heptacosylbenzene	I	122	<i>n</i> -Hexatriacontylcyclohexane	I	485
<i>n</i> -Heptacosylcyclohexane	I	476	<i>n</i> -Hexatriacontylcyclopentane	I	414

Compound	Vol.	Page	Compound	Vol.	Page
1-Hexatriacontyne	II	482	1-Iodotetracosane	III	252
1-Hexene	II	229	1-Iodotetradecane	III	242
<i>cis</i> -2-Hexene	II	230	1-Iodotetracontane	III	262
<i>trans</i> -2-Hexene	II	231	1-Iodotriacontane	III	258
<i>cis</i> -3-Hexene	II	232	1-Iodotricosane	III	251
<i>trans</i> -3-Hexene	II	233	1-Iodotridecane	III	241
Hexylamine	III	294	1-Iodotriatriacontane	III	261
<i>n</i> -Hexylbenzene	I	98	1-Icoundecane	III	239
<i>n</i> -Hexyl cyanide	III	397	Isobutane	II	15
<i>n</i> -Hexylcyclohexane	I	455	Isobutene	II	222
<i>n</i> -Hexylcyclopentane	I	384	Isobutylamine	III	331
1- <i>n</i> -Hexylnaphthalene	I	224	Isobutylbenzene	I	26
2- <i>n</i> -Hexylnaphthalene	I	225	1-Isobutyl-2-methylbenzene	I	61
1-Hexyne	II	452	1-Isobutyl-3-methylbenzene	I	62
Hydrazine	III	463	1-Isobutyl-4-methylbenzene	I	63
Hydrobromic acid	III	465	<i>o</i> -Isobutyltoluene	I	61
Hydrochloric acid	III	466	<i>m</i> -Isobutyltoluene	I	62
Hydrocyanic acid	III	391	<i>p</i> -Isobutyltoluene	I	63
Hydrofluoric acid	III	467	Isobutyric acid	III	440
Hydrogen	III	464	Isodurene	I	45
Hydrogen bromide	III	465	Isohexane	II	20
Hydrogen chloride	III	466	Isopentane	II	17
Hydrogen cyanide	III	391	Isopentylbenzene	I	51
Hydrogen fluoride	III	467	Isopropanolamine (mono-)	III	447
Hydrogen (normal)	III	464	Isopropenylbenzene	I	160
<i>p</i> - <i>tert</i> -Hydroxybenzene	I	297	Isopropylamine	III	329
4-Hydroxy-3-methyl-2-butanone	III	449	Isopropylbenzene	I	18
I					
Iodobenzene	I	158	Isopropyl chloride	II	210
1-Iodobutane	III	232	Isopropylcyclohexane	I	452
1-Iodododecane	III	238	Isopropylcyclopentane	I	368
1-Iododocosane	III	250	3-Isopropyl-2,4-dimethylpentane	II	154
1-Iodododecane	III	240	Isopropyl disulfide	III	435
1-Iodotriacontane	III	260	4-Isopropylheptane	II	106
1-Iodoicosane	III	248	2-Isopropyl-3-methyl-1-butene	II	372
Iodoethane	III	230	3-Isopropyl-2-methylhexane	II	131
1-Iodohenicicosane	III	249	2-Isopropyl-1-pentene	II	354
1-Iodohentriacontane	III	259	<i>p</i> -Isopropyl- α -methylstyrene	I	169
1-Iodoheptacosane	III	255	Isopropyl phenyl sulfide	I	179
1-Iodoheptadecane	III	245	<i>p</i> -Isopropylstyrene	I	168
1-Iodoheptane	III	235	Isopropyl sulfide	III	420
1-Iodoheptatriacontane	III	265	2-Isopropylthiophene	I	194
1-Iodohexacosane	III	254	3-Isopropylthiophene	I	195
1-Iodohexadecane	III	244	<i>o</i> -Isopropyltoluene (<i>o</i> -cymene)	I	32
1-Iodohexane	III	234	<i>m</i> -Isopropyltoluene (<i>m</i> -cymene)	I	33
1-Iodohexatriacontane	III	264	<i>p</i> -Isopropyltoluene (<i>p</i> -cymene)	I	34
Iodomethane	III	229	<i>p</i> -Isopropylvinylbenzene	I	168
1-Iodononacosane	III	257	M		
1-Iodononadecane	III	247	Mercury	III	468
1-Iodononane	III	237	Mesitylene	I	21
1-Iodononatriacontane	III	267	Methane	II	11
1-Iodo-octacosane	III	256	Methylacetylene	II	446
1-Iodo-octadecane	III	246	Methylamine	III	289
1-Iodo-octane	III	236	Methyl anthranilate	I	513
1-Iodo-octatriacontane	III	266	Methylbenzene	I	12
1-Iodopentacosane	III	253	2-Methylbenzenethiol	I	326
1-Iodopentadecane	III	243	3-Methylbenzenethiol	I	327
1-Iodopentane	III	233	4-Methylbenzenethiol	I	328
1-Iodopentatriacontane	III	263	Methyl benzoate	I	357
1-Iodopropane	III	231	α -Methyl benzyl alcohol	I	348
3-Iodo-1-propene	III	287	Methyl bromide	II	200
1-Iodotetracontane	III	268	2-Methyl-1,3-butadiene	II	422
			3-Methyl-1,2-butadiene	II	421

Compound	Vol.	Page	Compound	Vol.	Page
2-Methylbutane	II	17	3-Methyl-1-hexene	II	252
2-Methyl-1,3-butanediol	III	450	4-Methyl-1-hexene	II	253
2-Methyl-1-butene	II	226	5-Methyl-1-hexene	II	254
3-Methyl-1-butene	II	227	2-Methyl-2-hexene	II	255
2-Methyl-2-butene	II	228	3-Methyl- <i>cis</i> -2-hexene	II	256
3-Methyl-3-buten-2-one dimer	III	453	3-Methyl- <i>trans</i> -2-hexene	II	257
(1-Methylbutyl)benzene	I	48	4-Methyl- <i>cis</i> -2-hexene	II	258
(2-Methylbutyl)benzene	I	50	4-Methyl- <i>trans</i> -2-hexene	II	259
3-Methyl-1-butyne	II	451	5-Methyl- <i>cis</i> -2-hexene	II	260
Methyl chloride	II	194	5-Methyl- <i>trans</i> -2-hexene	II	261
Methyl chloroacetate	III	445	2-Methyl- <i>cis</i> -3-hexene	II	262
Methyl chloroform	II	204	2-Methyl- <i>trans</i> -3-hexene	II	263
Methyl cyanide	III	392	3-Methyl- <i>cis</i> -3-hexene	II	264
Methyl cyanoacetate	III	448	3-Methyl- <i>trans</i> -3-hexene	II	265
Methylcyclohexane	I	442	Methyl- <i>n</i> -hexylamine	III	333
1-Methylcyclohexene	I	490	Methyl isopropenyl ketone dimer	III	453
3-Methylcyclohexene	I	491	1-Methyl-2-isopropylbenzene	I	32
4-Methylcyclohexene	I	492	1-Methyl-3-isopropylbenzene	I	33
Methylcyclopentane	I	360	1-Methyl-4-isopropylbenzene	I	34
1-Methylcyclopentene	I	416	Methyl isopropyl sulfide	III	415
3-Methylcyclopentene	I	417	2-Methyl-3-ketobutanol	III	449
4-Methylcyclopentene	I	418	1-Methylnaphthalene	I	204
1-Methyl-(<i>trans</i> -decahydronaphthalene)	I	265	2-Methylnaphthalene	I	205
9-Methyl-(<i>cis</i> -decahydronaphthalene)	I	266	2-Methylnonane	II	87
9-Methyl-(<i>trans</i> -decahydronaphthalene)	I	267	3-Methylnonane	II	88
Methyl dichloroacetate	III	446	4-Methylnonane	II	89
Methyl disulfide	III	431	5-Methylnonane	II	90
2-Methyl-3,4-dithiahexane	III	433	2-Methyloctane	II	52
Methylene bromochloride	II	198	3-Methyloctane	II	53
Methylene chloride	II	195	4-Methyloctane	II	54
Methyl fluoride	II	191	Methyl- <i>n</i> -octylamine	III	334
2-Methylheptane	II	34	3-Methyl-1,2-pentadiene	II	433
3-Methylheptane	II	35	4-Methyl-1,2-pentadiene	II	434
4-Methylheptane	II	36	2-Methyl-1, <i>cis</i> -3-pentadiene	II	435
2-Methyl-1-heptene	II	289	2-Methyl-1, <i>trans</i> -3-pentadiene	II	436
3-Methyl-1-heptene	II	290	3-Methyl-1, <i>cis</i> -3-pentadiene	II	437
4-Methyl-1-heptene	II	291	3-Methyl-1, <i>trans</i> -3-pentadiene	II	438
5-Methyl-1-heptene	II	292	4-Methyl-1,3-pentadiene	II	439
6-Methyl-1-heptene	II	293	2-Methyl-1,4-pentadiene	II	440
2-Methyl-2-heptene	II	294	3-Methyl-1,4-pentadiene	II	441
3-Methyl- <i>cis</i> -2-heptene	II	295	2-Methyl-2,3-pentadiene	II	442
3-Methyl- <i>trans</i> -2-heptene	II	296	2-Methylpentane	II	20
4-Methyl- <i>cis</i> -2-heptene	II	297	3-Methylpentane	II	21
4-Methyl- <i>trans</i> -2-heptene	II	298	2-Methyl-1-pentene	II	234
5-Methyl- <i>cis</i> -2-heptene	II	299	3-Methyl-1-pentene	II	235
5-Methyl- <i>trans</i> -2-heptene	II	300	4-Methyl-1-pentene	II	236
6-Methyl- <i>cis</i> -2-heptene	II	301	2-Methyl-2-pentene	II	237
6-Methyl- <i>trans</i> -2-heptene	II	302	3-Methyl- <i>cis</i> -2-pentene	II	238
2-Methyl- <i>cis</i> -3-heptene	II	303	3-Methyl- <i>trans</i> -2-pentene	II	239
2-Methyl- <i>trans</i> -3-heptene	II	304	4-Methyl- <i>cis</i> -2-pentene	II	240
3-Methyl- <i>cis</i> -3-heptene	II	305	4-Methyl- <i>trans</i> -2-pentene	II	241
3-Methyl- <i>trans</i> -3-heptene	II	306	2-Methylphenol	I	274
4-Methyl- <i>cis</i> -3-heptene	II	307	<i>m</i> -Methylphenol	I	275
4-Methyl- <i>trans</i> -3-heptene	II	308	<i>p</i> -Methylphenol	I	276
5-Methyl- <i>cis</i> -3-heptene	II	309	2-Methyl-1-phenylbutane	I	50
5-Methyl- <i>trans</i> -3-heptene	II	310	2-Methyl-2-phenylbutane	I	52
6-Methyl- <i>cis</i> -3-heptene	II	311	3-Methyl-1-phenylbutane	I	51
6-Methyl- <i>trans</i> -3-heptene	II	312	3-Methyl-2-phenylbutane	I	53
2-Methylhexane	II	25	Methyl phenyl ketone	I	353
3-Methylhexane	II	26	Methyl phenyl sulfide	I	175
2-Methyl-1-hexene	II	251	2-Methylpropane	II	15
			2-Methyl-2-propanethiol	III	428
			2-Methylpropene	II	222
			1-Methyl-2-propylbenzene	I	29

Compound	Vol.	Page	Compound	Vol.	Page
1-Methyl-3-propylbenzene	I	30	Nonadecanenitrile	III	409
1-Methyl-4-propylbenzene	I	31	1-Nonadecene	II	384
Methyl <i>n</i> -propyl sulfide	III	417	Nonadecylamine	III	307
α -Methylstyrene	I	160	<i>n</i> -Nonadecylbenzene	I	114
β -Methylstyrene	I	161	<i>n</i> -Nonadecyl cyanide	III	410
<i>o</i> -Methylstyrene	I	162	<i>n</i> -Nonadecylcyclohexane	I	468
<i>m</i> -Methylstyrene	I	163	<i>n</i> -Nonadecylcyclopentane	I	397
<i>p</i> -Methylstyrene	I	164	1-Nonadecyne	II	465
Methyl sulfide	III	413	<i>n</i> -Nonane	II	51
1-Methyl-1,2,3,4-tetrahydronaphthalene	I	240	Nonanenitrile	III	399
2-Methyl-1,2,3,4-tetrahydronaphthalene	I	241	<i>n</i> -Nonatriacontane	II	189
5-Methyl-1,2,3,4-tetrahydronaphthalene	I	242	1-Nonatriacontene	II	404
6-Methyl-1,2,3,4-tetrahydronaphthalene	I	243	Nonatriacontylamine	III	327
3-Methyl-2-thiabutane	III	415	1-Nonatriacontyne	II	485
2-Methylthiacyclohexane	I	504	1-Nonene	II	374
3-Methylthiacyclohexane	I	505	Nonylamine	III	297
4-Methylthiacyclohexane	I	506	<i>n</i> -Nonylbenzene	I	104
2-Methylthiacyclopentane	I	430	<i>n</i> -Nonyl cyanide	III	400
3-Methylthiacyclopentane	I	431	<i>n</i> -Nonylcyclohexane	I	458
2-Methylthiacyclopropane	I	438	<i>n</i> -Nonylcyclopentane	I	387
<i>p</i> -Methyl-(1-thiaethyl)-benzene	I	177	1- <i>n</i> -Nonylnaphthalene	I	230
4-Methyl-(1-thiaethyl)-benzene	I	177	2- <i>n</i> -Nonylnaphthalene	I	231
2-Methyl-3-thiahexane	III	422	1-Nonyne	II	455
4-Methyl-3-thiahexane	III	423			
5-Methyl-3-thiahexane	III	424	O		
2-Methyl-3-thiapentane	III	418	<i>n</i> -Octacosane	II	178
(2-Methyl-1-thiapropryl)-benzene	I	179	1-Octacosene	II	393
3-Methyl-(1-thiapropryl)-benzene	I	180	Octacosylamine	III	316
4-Methyl-(1-thiapropryl)-benzene	I	181	<i>n</i> -Octacosylbenzene	I	123
<i>m</i> -Methyl-(1-thiapropryl)-benzene	I	180	<i>n</i> -Octacosylcyclohexane	I	477
<i>p</i> -Methyl-(1-thiapropryl)-benzene	I	181	<i>n</i> -Octacosylcyclopentane	I	406
2-Methylthiophene	I	184	1-Octacosyne	II	474
3-Methylthiophene	I	185	<i>n</i> -Octadecane	II	168
<i>o</i> -Methylthiophenol	I	326	1-Octadecene	II	383
<i>m</i> -Methylthiophenol	I	327	Octadecylamine	III	306
<i>p</i> -Methylthiophenol	I	328	<i>n</i> -Octadecylbenzene	I	113
2-Methylthiirane	I	438	<i>n</i> -Octadecyl cyanide	III	409
<i>o</i> -Methylvinylbenzene	I	162	<i>n</i> -Octadecylcyclohexane	I	467
<i>m</i> -Methylvinylbenzene	I	163	<i>n</i> -Octadecylcyclopentane	I	396
<i>p</i> -Methylvinylbenzene	I	164	1-Octadecyne	II	464
Morpholine	I	515	<i>n</i> -Octane	II	33
			<i>n</i> -Octatriacontane	II	188
			1-Octatriacontene	II	403
			Octatriacontylamine	III	326
			1-Octatriacontyne	II	484
			1-Octene	II	282
N			<i>cis</i> -2-Octene	II	283
Naphthalene	I	203	<i>trans</i> -2-Octene	II	284
Neohexane	II	22	<i>cis</i> -3-Octene	II	285
Neopentane	II	18	<i>trans</i> -3-Octene	II	286
Neopentylbenzene	I	54	<i>cis</i> -4-Octene	II	287
Nitrobenzene	I	345	<i>trans</i> -4-Octene	II	288
<i>m</i> -Nitrobenzotrifluoride	I	507	Octylamine	III	296
Nitrogen	III	469	<i>n</i> -Octylbenzene	I	103
Nitrous oxide	III	470	<i>n</i> -Octyl cyanide	III	399
<i>n</i> -Nonacosane	II	179	<i>n</i> -Octylcyclohexane	I	457
1-Nonacosene	II	394	<i>n</i> -Octylcyclopentane	I	386
Nonacosylamine	III	317	1- <i>n</i> -Octylnaphthalene	I	228
<i>n</i> -Nonacosylbenzene	I	124	2- <i>n</i> -Octylnaphthalene	I	229
<i>n</i> -Nonacosylcyclohexane	I	478	<i>p</i> - <i>tert</i> -Octylphenol	I	323
<i>n</i> -Nonacosylcyclopentane	I	407	1-Octyne	II	454
1-Nonacosyne	II	475	Oxygen	III	471
<i>n</i> -Nonadecane	II	169			

Compound	Vol.	Page	Compound	Vol.	Page
P					
<i>n</i> -Pentacosane	II	175	1-Phenylheptadecane	I	112
1-Pentacosene	II	390	1-Phenylheptane	I	102
Pentacosylamine	III	313	1-Phenylhexacosane	I	121
<i>n</i> -Pentacosylbenzene	I	120	1-Phenylhexadecane	I	111
<i>n</i> -Pentacosylcyclohexane	I	474	1-Phenylhexane	I	98
<i>n</i> -Pentacosylcyclopentane	I	403	1-Phenylhexatriacontane	I	131
1-Pentacosyne	II	471	Phenylhydrazine	I	510
<i>n</i> -Pentadecane	II	165	2-Phenyl-2-methylpropane	I	28
1-Pentadecene	II	380	1-Phenylnonacosane	I	124
Pentadecylamine	III	303	1-Phenylnonadecane	I	114
<i>n</i> -Pentadecylbenzene	I	110	1-Phenylnonane	I	104
<i>n</i> -Pentadecyl cyanide	III	406	1-Phenyltetracosane	I	123
<i>n</i> -Pentadecylcyclohexane	I	464	1-Phenyltridecane	I	113
<i>n</i> -Pentadecylcyclopentane	I	393	1-Phenyltridecane	I	103
1-Pentadecyne	II	461	1-Phenyltridecane	I	120
1,2-Pentadiene	II	416	2-Phenylpentane	I	48
1, <i>cis</i> -3-Pentadiene	II	417	3-Phenylpentane	I	49
1, <i>trans</i> -3-Pentadiene	II	418	1-Phenylpentatriacontane	I	130
1,4-Pentadiene	II	419	1-Phenyltetracosane	I	119
2,3-Pentadiene	II	420	1-Phenyltetradecane	I	109
Pentamethylbenzene	I	97	1-Phenyltetratriacontane	I	129
2,2,3,3,4-Pentamethylpentane	II	159	1-Phenyltriacontane	I	125
2,2,3,4,4-Pentamethylpentane	II	160	1-Phenyltricosane	I	118
<i>n</i> -Pentane	II	16	1-Phenyltridecane	I	108
Pentanethiol	III	429	1-Phenyltridecane	I	128
Pentanoic acid	III	441	1-Phenyltridecane	I	106
<i>n</i> -Pentatriacontane	II	185	Phosgene	III	461
1-Pentatriacontene	II	400	Prehnitene	I	44
Pentatriacontylamine	III	323	Propadiene	II	413
<i>n</i> -Pentatriacontylbenzene	I	130	Propane	II	13
<i>n</i> -Pentatriacontylcyclohexane	I	484	Propene	II	218
<i>n</i> -Pentatriacontylcyclopentane	I	413	Propenylbenzene	I	161
1-Pentatriacontyne	II	481	Propionic acid	III	438
1-Pentene	II	223	Propiophenone	I	356
<i>cis</i> -2-Pentene	II	224	Propylamine	III	291
<i>trans</i> -2-Pentene	II	225	<i>n</i> -Propylbenzene	I	17
Pentylamine	III	293	<i>n</i> -Propyl cyanide	III	394
<i>n</i> -Pentylbenzene	I	47	<i>n</i> -Propylcyclohexane	I	451
<i>n</i> -Pentyl cyanide	III	396	<i>n</i> -Propylcyclopentane	I	367
<i>n</i> -Pentylcyclohexane	I	454	Propylene	II	218
<i>n</i> -Pentylcyclopentane	I	383	Propylene dibromide	II	214
1- <i>n</i> -Pentyl-naphthalene	I	222	Propylene dichloride	II	211
2- <i>n</i> -Pentyl-naphthalene	I	223	4-Propylheptane	II	105
1-Pentyne	II	449	1- <i>n</i> -Propyl-naphthalene	I	218
2-Pentyne	II	450	2- <i>n</i> -Propyl-naphthalene	I	219
Perchloroethylene	II	411	2-Propyl-1-pentene	II	353
Perfluoro- <i>n</i> -hexane	II	192	2-Propylphenol	I	286
Perfluoro-2-methylpentane	II	193	3-Propylphenol	I	287
Phenethyl alcohol	I	349	<i>o</i> -Propylphenol	I	286
<i>p</i> -Phenetidine	I	511	<i>m</i> -Propylphenol	I	287
Phenol	I	273	<i>p</i> -Propylphenol	I	288
1-Phenylbutane	I	27	<i>n</i> -Propyl phenyl sulfide	I	178
1-Phenyldecaheptane	I	105	2-Propylthiophene	I	192
1-Phenyltricosane	I	117	3-Propylthiophene	I	193
1-Phenyltridecane	I	107	<i>o</i> -Propyltoluene	I	29
1-Phenyltriacontane	I	127	<i>m</i> -Propyltoluene	I	30
1-Phenyleicosane	I	115	<i>p</i> -Propyltoluene	I	31
α -Phenyl ethyl alcohol	I	348	2-Propyl- <i>m</i> -xylene	I	75
β -Phenyl ethyl alcohol	I	349	2-Propyl- <i>p</i> -xylene	I	78
Phenyl fluoride	I	132	3-Propyl- <i>o</i> -xylene	I	73
1-Phenylheneicosane	I	116	4-Propyl- <i>o</i> -xylene	I	74
1-Phenylheptacosane	I	122	4-Propyl- <i>m</i> -xylene	I	76
			5-Propyl- <i>m</i> -xylene	I	77

Compound	Vol.	Page	Compound	Vol.	Page
Propyne.....	II	446	2,2,3,3-Tetramethylpentane.....	II	82
Pseudocumene.....	I	20	2,2,3,4-Tetramethylpentane.....	II	83
			2,2,4,4-Tetramethylpentane.....	II	84
			2,3,3,4-Tetramethylpentane.....	II	85
S			<i>n</i> -Tetraatriacontane.....	II	184
Spiropentane.....	I	519	1-Tetraatriacontene.....	II	399
Styrene.....	I	159	Tetraatriacontylamine.....	III	322
Sulfur dioxide.....	III	472	<i>n</i> -Tetraatriacontylbenzene.....	I	129
			<i>n</i> -Tetraatriacontylcyclohexane.....	I	483
			<i>n</i> -Tetraatriacontylcyclopentane.....	I	412
T			1-Tetraatriacontyne.....	II	480
1,1,2,2-Tetrabromoethane.....	III	226	2-Thiabutane.....	III	414
1,2,2,3-Tetrabromopropane.....	III	227	(1-Thiabutyl)-benzene.....	I	178
1,1,1,2-Tetrachloroethane.....	III	143	Thiacyclobutane.....	I	520
1,1,2,2-Tetrachloroethane.....	III	144	Thiacyclohexane.....	I	503
Tetrachloromethane.....	III	142	Thiacyclopentane.....	I	429
1,1,1,2-Tetrachloropropane.....	III	145	Thiacyclopropane.....	I	437
<i>o</i> , <i>α</i> , <i>α</i> , <i>α</i> -Tetrachlorotoluene.....	I	142	(1-Thiaethyl)-benzene.....	I	175
<i>n</i> -Tetracontane.....	II	190	3-Thiaheptane.....	III	426
1-Tetracontene.....	II	405	4-Thiaheptane.....	III	425
Tetracontylamine.....	III	328	3-Thiahexane.....	III	419
1-Tetracontyne.....	II	486	2-Thiapentane.....	III	417
<i>n</i> -Tetracosane.....	II	174	3-Thiapentane.....	III	416
1-Tetracosene.....	II	389	2-Thiapropene.....	III	413
Tetracosylamine.....	III	312	(1-Thiapropyl)-benzene.....	I	176
<i>n</i> -Tetracosylbenzene.....	I	119	Thiophene.....	I	183
<i>n</i> -Tetracosylcyclohexane.....	I	473	Thiophenol.....	I	325
<i>n</i> -Tetracosylcyclopentane.....	I	402	Titanium tetrachloride.....	III	473
1-Tetracosyne.....	II	470	Toluene.....	I	12
<i>n</i> -Tetradecane.....	II	164	<i>o</i> -Toluidine.....	I	336
1-Tetradecene.....	II	379	<i>m</i> -Toluidine.....	I	337
Tetradecylamine.....	III	302	<i>p</i> -Toluidine.....	I	338
<i>n</i> -Tetradecylbenzene.....	I	109	<i>n</i> -Triacantane.....	II	180
<i>n</i> -Tetradecylcyanide.....	III	405	1-Triacantene.....	II	395
<i>n</i> -Tetradecylcyclohexane.....	I	463	Triacantylamine.....	III	318
<i>n</i> -Tetradecylcyclopentane.....	I	392	<i>n</i> -Triacantylbenzene.....	I	125
1-Tetradecyne.....	II	460	<i>n</i> -Triacantylcyclohexane.....	I	479
<i>trans</i> -Tetrahydro-2,5-dimethyl- thiophene.....	I	435	<i>n</i> -Triacantylcyclopentane.....	I	408
Tetrahydro- <i>p</i> -isoxazine.....	I	515	1-Triacantyne.....	II	476
Tetrahydro-2-methyl-1-thiapyran.....	I	504	Triacosylamine.....	III	311
Tetrahydro-3-methyl-1-thiapyran.....	I	505	2,4,6-Triallylphenol.....	I	310
Tetrahydro-4-methyl-1-thiapyran.....	I	506	1,2,3-Tribromobutane.....	III	222
Tetrahydro-2-methylthiophene.....	I	430	1,2,4-Tribromobutane.....	III	223
Tetrahydro-3-methylthiophene.....	I	431	2,3,3-Tribromobutane.....	III	224
1,2,3,4-Tetrahydronaphthalene.....	I	239	1,1,2-Tribromoethane.....	II	209
Tetrahydrothiophene.....	I	429	1,1,2-Tribromoethane.....	III	220
1,2,3,4-Tetramethylbenzene.....	I	44	1,2,3-Tribromopropane.....	II	215
1,2,3,5-Tetramethylbenzene.....	I	45	1,2,3-Tribromopropane.....	III	221
1,2,4,5-Tetramethylbenzene.....	I	46	2,4,6-Tri- <i>tert</i> -butylphenol.....	I	322
2,2,3,3-Tetramethylbutane.....	II	50	1,2,4-Trichlorobenzene.....	I	138
<i>p</i> -(1,1,3,3-Tetramethylbutyl)- phenol.....	I	323	1,1,1-Trichloroethane.....	III	138
2,2,3,3-Tetramethylhexane.....	II	143	1,1,2-Trichloroethane.....	II	203
2,2,3,4-Tetramethylhexane.....	II	144	1,1,2-Trichloroethylene.....	II	410
2,2,3,5-Tetramethylhexane.....	II	145	Trichloromethane.....	II	196
2,2,4,4-Tetramethylhexane.....	II	146		III	137
2,2,4,5-Tetramethylhexane.....	II	147	1,1,3-Trichloropropane.....	III	140
2,2,5,5-Tetramethylhexane.....	II	148	1,2,3-Trichloropropane.....	III	141
2,3,3,4-Tetramethylhexane.....	II	149	<i>α</i> ,2,4-Trichlorotoluene.....	I	141
2,3,3,5-Tetramethylhexane.....	II	150	<i>n</i> -Tricosane.....	II	173
2,3,4,4-Tetramethylhexane.....	II	151	1-Tricosene.....	II	388
2,3,4,5-Tetramethylhexane.....	II	152	<i>n</i> -Tricosylbenzene.....	I	118
3,3,4,4-Tetramethylhexane.....	II	153	<i>n</i> -Tricosylcyclohexane.....	I	472
			<i>n</i> -Tricosylcyclopentane.....	I	401

Compound	Vol.	Page	Compound	Vol.	Page
1-Tricosyne	II	469	3,3,4-Trimethylhexane	II	77
<i>n</i> -Tridecane	II	163	2,2,3-Trimethylpentane	II	46
1-Tridecene	II	378	2,2,4-Trimethylpentane	II	47
Tridecylamine	III	301	2,3,3-Trimethylpentane	II	48
Tri- <i>n</i> -decylamine	III	385	2,3,4-Trimethylpentane	II	49
<i>n</i> -Tridecylbenzene	I	108	2,3,3-Trimethyl-1-pentene	II	360
<i>n</i> -Tridecyl cyanide	III	404	2,3,4-Trimethyl-1-pentene	II	361
<i>n</i> -Tridecylcyclohexane	I	462	2,4,4-Trimethyl-1-pentene	II	362
<i>n</i> -Tridecylcyclopentane	I	391	3,3,4-Trimethyl-1-pentene	II	363
1-Tridecyne	II	459	3,4,4-Trimethyl-1-pentene	II	364
Tri- <i>n</i> -dodecylamine	III	386	2,3,4-Trimethyl-2-pentene	II	368
Tri- <i>n</i> -eicosylamine	III	390	2,4,4-Trimethyl-2-pentene	II	369
Triethylamine	III	382	3,4,4-Trimethyl- <i>cis</i> -2-pentene	II	370
Triethylmethane	II	27	3,4,4-Trimethyl- <i>trans</i> -2-pentene	II	371
1,1,1-Trifluorobutane	III	70	2,3,4-Trimethylthiophene	I	200
α,α,α -Trifluoro- <i>m</i> -nitrotoluene	I	507	2,3,5-Trimethylthiophene	I	201
α,α,α -Trifluorotoluene	I	133	Tri- <i>n</i> -octadecylamine	III	389
Tri- <i>n</i> -hexadecylamine	III	388	Tri- <i>n</i> -octylamine	III	384
Trimethylamine	III	381	Tri- <i>n</i> -propylamine	III	383
1,2,3-Trimethylbenzene	I	19	Tri- <i>n</i> -tetradecylamine	III	387
1,2,4-Trimethylbenzene	I	20	<i>n</i> -Tritriacontane	II	183
1,3,5-Trimethylbenzene	I	21	1-Tritriacontene	II	398
2,2,3-Trimethylbutane	II	32	Tritriacontylamine	III	321
2,3,3-Trimethyl-1-butene	II	281	<i>n</i> -Tritriacontylbenzene	I	128
Trimethylene chlorobromide	II	212	<i>n</i> -Tritriacontylcyclohexane	I	482
1,1,2-Trimethylcyclopentane	I	374	<i>n</i> -Tritriacontylcyclopentane	I	411
1,1,3-Trimethylcyclopentane	I	375	1-Tritriacontyne	II	479
1, <i>cis</i> -2, <i>cis</i> -3-Trimethylcyclopentane	I	376			
1, <i>cis</i> -2, <i>trans</i> -3-Trimethylcyclopentane	I	377	U		
1, <i>cis</i> -2, <i>cis</i> -4-Trimethylcyclopentane	I	379	<i>n</i> -Undecane	II	161
1, <i>cis</i> -2, <i>trans</i> -4-Trimethylcyclopentane	I	380	1-Undecene	II	376
1, <i>trans</i> -2, <i>cis</i> -3-Trimethylcyclopentane	I	378	Undecylamine	III	299
1, <i>trans</i> -2, <i>cis</i> -4-Trimethylcyclopentane	I	381	<i>n</i> -Undecylbenzene	I	106
Trimethylene dibromide	II	213	<i>n</i> -Undecyl cyanide	III	402
Trimethylene sulfide	I	520	<i>n</i> -Undecylcyclohexane	I	460
2,2,3-Trimethylheptane	II	115	<i>n</i> -Undecylcyclopentane	I	389
2,2,4-Trimethylheptane	II	116	1- <i>n</i> -Undecyl-naphthalene	I	234
2,2,5-Trimethylheptane	II	117	2- <i>n</i> -Undecyl-naphthalene	I	235
2,2,6-Trimethylheptane	II	118	1-Undecyne	II	457
2,3,3-Trimethylheptane	II	119			
2,3,4-Trimethylheptane	II	120	V		
2,3,5-Trimethylheptane	II	121	<i>n</i> -Valeric acid	III	441
2,3,6-Trimethylheptane	II	122	Vinylbenzene	I	159
2,4,4-Trimethylheptane	II	123	Vinyl bromide	II	406
2,4,5-Trimethylheptane	II	124	Vinyl chloride	II	407
2,4,6-Trimethylheptane	II	125	<i>m</i> - and β -vinyltoluene	I	165
2,5,5-Trimethylheptane	II	126			
3,3,4-Trimethylheptane	II	127	W		
3,3,5-Trimethylheptane	II	128	Water	III	474
3,4,4-Trimethylheptane	II	129			
3,4,5-Trimethylheptane	II	130	X		
2,2,3-Trimethylhexane	II	70	<i>o</i> -Xylene	I	14
2,2,4-Trimethylhexane	II	71	<i>m</i> -Xylene	I	15
2,2,5-Trimethylhexane	II	72	<i>p</i> -Xylene	I	16
2,3,3-Trimethylhexane	II	73	2,3-Xylenol	I	277
2,3,4-Trimethylhexane	II	74	2,4-Xylenol	I	278
2,3,5-Trimethylhexane	II	75	2,5-Xylenol	I	279
2,4,4-Trimethylhexane	II	76	2,6-Xylenol	I	280
			3,4-Xylenol	I	281
			3,5-Xylenol	I	282