PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III

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INTRODUCTION

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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.

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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.

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
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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.) $= (n_D^2 - 1)/(n_D^2 + 2) \times M/d =$ MR at 20° 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
$\log d_V$(g./ml.) $= A^* - B^*/(t + C)$ to the temperature t_k
$\log d_V$(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 $t_x = (1.1\,T_C - 273.2)$° C.

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

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

Where the latent heat is not available use
$M(\Delta Hv)/T_B = 21.0$ and from this $\Delta Hv = (T_B \times 21.0)/M$
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.

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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 $dt/dp = B/[2.3026 \times P \times (A - \log P)^2]$° C./mm. Also $dt/dp = (t + C)^2/2.3\,PB$

ΔHm: Latent heat of fusion in cal./g.

ΔHv: 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 $\Delta Hv = d - et$, and indicates the accuracy of this equation at the temperature t_e.

$\Delta Hv/T_e$: 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, ΔHv(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 ±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 $R = 62361$.

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

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

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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.; Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

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; ΔHv; 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:
$(y_3 - y_2)/(y_2 - y_1) \times (t_2 - t_1)/(t_3 - t_2) = 1 - (t_3 - t_1)/(t_3 + C)$
$B = (y_3 - y_1)/(t_3 - t_1) \times (t_1 + C)(t_3 + C)$
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.

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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., $M\Delta Hv_2$, is given by

$M\Delta Hv_2 = 2.3026\ RB'\ [(t_2 + 273.2)/(t_2 + C']^2$

where $t_2 = 25°$ C. To solve for A', B', C' let

$g_2 = M\Delta Hv_2/2.3026\ R(t_2 + 273.2)^2 = M\Delta Hv_2/406883$ if $t_2 = 25°$ 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:

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

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

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

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

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

and $Bc = (y_c - y_1)/(t_c - t_1) \times (t_1 + Cc)(t_c + Cc)$;

$Ac = B/(t_c + Cc) + y_c$

where t_1 ° C. $= T_R$ 0.75, t_c ° C. = critical temperature

$y_1 = \log P$ 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 $M_x = p - rt$. For instance, for acetic acid this formula would be $M_x = 2.225 - 0.004085\ t$ from 0° C. to 100° C. From 100° C. to a T_R of 0.92, $M_x = 1.85$. 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.

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.; Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

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 halohydrocarbons.

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
2. Chloroalkanes
3. Bromoalkanes
4. Iodoalkanes
5. Haloalkenes
6. Aminoalkanes
7. Cyanoalkanes (alkyl cyanides)
8. Thiaalkanes
9. Dithiaalkanes
10. Aliphatic acids (organic acids)
11. Miscellaneous organic compounds
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[a]
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 teritary amide	2.71		

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

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Atomic and Structural Constants for Calculation of Parachor

	Sugden		*Sugden*
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_3F

Mole % Pur.	Ref. 3	Molecular Formula CH_3F	Molecular Weight 34.034

		Ref.			Ref.			Ref.
F.P. °C	-141.8	3	dt/dP °C/mm 25°C			f | to		
F.P. 100%			BP	0.0238	5	g | °C		
B.P. °C			t_e	0.0325	5	h |		
760 mm	-78.35	3	30 mm	0.3392	5	f' | to		
100	-108.68	5	ΔHm cal/g			g' | °C		
30	-122.19	5				h' |		
10	-132.50	5	ΔHv cal/g 25°C			m | to		
1	-149.60	5	30 mm	130.74	5	n | °K		
Pressure mm 25°C			BP	119.27	5	o |		
t_e	514.16	5	t_e	121.23	5	m' | to		
Density g/ml 20°C	0.5786[a]	3	t_e (d, e)	121.05	5	n' | °K		
d_4^t 25	0.5570[a]	3	ΔHv/T_e	21.95	5	o' |		
30			d -130 to	98.76	5	Surface tension dynes/cm. 20°C		
a	0.6963	5	e -70 °C	0.2617	5	γ 30		
b	-0.02311	5	d' to			40		
Ref. Index			e' °C			Parachor [P]		
n_D 20°C	1.1727[a]	3	d_c g/ml			20°C		
25	1.1674[a]	3	v_c ml/g			30		
30			t_c °C			40		
"C"	0.4124	4	P_c mm			Sugd.	81.8	5
MR (Obs.)	6.5392	4	PV/RT 25°C			Exp. L. 1. %/wt. u.		
MR (Calc.)	6.668	5	30 mm	1.0000	5	Dispersion		
(nD-d/2)	0.8834	4	BP	0.9755	5	Flash Point °C		
Dielectric			t_e	0.9829	5	Fire Point		
A -125 to	7.09761	3	t_c			M. Spec.		
B -60 °C	740.218	3	ΔHc kcal/m			Ultra V.		
C	253.89	3	ΔHf			X-Ray Dif.		
A* -70 to	1.25564	5	ΔFf			Infrared		
B* -90 °C	687.52	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)			Water		
A'* to			(A^v)			Water in		
B'* °C								
Ac to			c_p liq. °C					
Bc t_c °C			c_p vap. °K					
Cc								
Cryos. A°			c_v vap.					
consts. B°								
t_e °C	-85.14	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

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No. 2

NAME	Fluoroethane			STRUCTURAL FORMULA
				CH_3CH_2F
Mole % Pur.	Ref. 3	Molecular Formula C_2H_5F	Molecular Weight 48.060	

		Ref.
F.P. °C	-143.2	3
F.P. 100%		
B.P. °C		
760 mm	-37.70	3
100	-74.58	5
30	-90.89	5
10	-103.28	5
1	-123.75	5
Pressure mm 25°C	6734.	5
t_e	626.19	5
Density g/ml 20°C	0.7182[a]	3
d_4^t 25	0.7062[a]	3
30		
a	0.7741	5
b	-0.001934	5
Ref. Index n_D 20°C	1.2656[a]	3
25	1.2621[a]	3
30		
"C"	0.5030	4
MR (Obs.)	11.1799	4
MR (Calc.)	11.286	5
(nD-d/2)	0.9065	4
Dielectric		
A | -100 to	6.97853	3
B | -30 °C	854.211	3
C	246.16	3
A* | -92 to	1.2656	3
B* | °C	794.90	3
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	-41.89	5

		Ref.
dt/dP °C/mm		
25°C	0.0056	5
BP	0.0291	5
t_e	0.0339	5
30 mm	0.4086	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	112.05	5
BP	100.22	5
t_e	101.20	5
t_e (d, e)	101.15	5
$\Delta Hv/T_e$	21.03	5
d | to	91.83	5
e | °C	0.2224	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	0.9689	5
t_e	0.9732	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.		

		Ref.
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	9.64	5
γ 30	8.13	5
40	6.74	5
Parachor [P]		
20°C		
30		
40		
Sugd.	120 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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 3

NAME	1-Fluoropropane		STRUCTURAL FORMULA
			$(CH_3)(CH_2)_2F$
Mole % Pur.	Ref. 3	Molecular Formula C_3H_7F	Molecular Weight 62.086

		Ref.			Ref.			Ref.
F.P. °C	-159.0	3	dt/dP °C/mm			f / g / h	to °K	
F.P. 100%			25°C	0.0156	5			
B.P. °C			BP	0.0333	5			
760 mm	-2.50	3	t_e	0.0345	5	f' / g' / h'	to °K	
100	-44.64	5	30 mm	0.4659	5			
30	-63.25	5	ΔHm cal/g					
10	-77.37	5				m / n / o	to °K	
1	-100.69	5	ΔHv cal/g					
Pressure			25°C	83.94	5	m' / n' / o'	to °K	
mm 25°C	2014.77	5	30 mm	100.88	5			
t_e	725.55	5	BP	89.41	5			
Density			t_e	89.63	5	Surface tension		
g/ml 20°C	0.7956[a]	3	t_e (d, e)	89.63	5	dynes/cm. 20°C	17.04	5
d_4^t 25	0.7518[a]	3	ΔHv/T_e	20.65	5	γ 30	10.51	5
30			d -70 to e 10 °C	88.93	5	40	6.03	5
a	0.9730	5		0.1889	5	Parachor [P]		
b	-0.008559	5	d' / e' to °C			20°C		
Ref. Index			d_c g/ml			30		
n_D 20°C	1.3115[a]	3	v_c ml/g			40		
25	1.3091[a]	3	t_c °C	179.06	5	Sugd.	159.8	5
30			P_c mm	47501.35	5	Exp. L. l. %/wt. u.		
"C"	0.5288	4	PV/RT			Dispersion		
MR (Obs.)	15.1044	4	25°C	0.9377	5	Flash Point °C		
MR (Calc.)	15.904	5	30 mm	1.0000	5	Fire Point		
(nD-d/2)	0.9137	4	BP	0.9666	5	M. Spec.		
Dielectric			t_e	0.9677	5	Ultra V.		
A -70 to	6.9533	3	t_c			X-Ray Dif.		
B 30 °C	965.18	3	ΔHc kcal/m			Infrared		
C	239.5	3	ΔHf			Solubility in [+]		
A* -65 to	1.2563	5	ΔFf			Acetone		
B* 15 °C	899.42	5	Viscosity centistokes			Carbon tet.		
K			η °C			Benzene		
c						Ether		
t_k to			B^v to			n-Heptane		
t_x °C			A^v °C			Ethanol		
A' to			(B^v) to			Water		
B' °C			(A^v) °C			Water in		
C'			c_p liq. °K					
A'* to			c_p vap. °K					
B'* °C			c_v vap.					
Ac to								
Bc t_c °C								
Cc								
Cryos. A°								
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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 4

NAME	1-Fluorobutane		STRUCTURAL FORMULA
			$CH_3(CH_2)_3F$
Mole % Pur.	Ref. 3	Molecular Formula C_4H_9F	Molecular Weight 76.112

		Ref.
F.P. °C	-134	3
F.P. 100%		
B.P. °C		
760 mm	+32.5	3
100	-14.6	5
30	-35.4	5
10	-51.3	5
1	-77.3	5
Pressure		
mm 25°C	578.33	5
t_e	817.98	5
Density		
g/ml 20°C	0.7789	3
d_4^t 25	0.7727	3
30		
a	0.8041	5
b	-0.001160	5
Ref. Index		
n_D 20°C	1.3396	3
25	1.3376	3
30		
"C"	0.5864	4
MR (Obs.)	20.4608	4
MR (Calc.)	20.522	5
(nD-d/2)	0.9501	4
Dielectric		
A | -40 to	6.9581	3
B | 75 °C	1081.71	3
C	232.8	3
A* | to	1.3162	5
B* | °C	1012.16	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	+34.60	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0156	5
BP	0.0372	5
t_e	0.0351	5
30 mm	0.4659	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.61	5
30 mm	94.32	5
BP	82.30	5
t_e	81.92	5
t_e (d, e)	81.93	5
$\Delta Hv/T_e$	20.26	5
d | -40 to	88.05	5
e | 40 °C	0.1770	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9644	5
30 mm	1.0000	5
BP	0.9574	5
t_e	0.9553	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.		

			Ref.
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		16.95	5
γ 30		15.82	5
40		14.70	5
Parachor [P]			
20°C			
30			
40			
Sugd.		198.8	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			

+ grams/100 grams solvent

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
		$CH_3(CH_2)_4F$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}F$	Molecular Weight 90.138

		Ref.
F. P. °C	-120.	3
F. P. 100%		
B. P. °C		
760 mm	62.8	3
100	11.6	5
30	-11.1	5
10	-28.3	5
1	-56.8	5
Pressure		
mm 25°C	184.18	5
t_e	899.65	5
Density		
g/ml 20°C	0.7907	3
d_4^t 25	0.7851	3
30		
a	0.8132	5
b	-0.001086	5
Ref. Index		
n_D 20°C	1.3591	3
25	1.3571	3
30		
"C"	0.6091	4
MR (Obs.)	25.1026	4
MR (Calc.)	25.140	5
(nD-d/2)	0.9637	4
Dielectric		
A -20 to	6.9857	3
B 100 °C	1190.03	3
C	227.1	3
A* to	1.3870	5
B* °C	1116.51	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	68.07	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1259	5
BP	0.0404	5
t_e	0.0353	5
30 mm	0.5677	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.99	5
30 mm	88.89	5
BP	76.93	5
t_e	76.08	5
t_e (d, e)	76.07	5
ΔHv/T_e	20.10	5
d -15 to	87.10	5
e 75 °C	0.1620	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		
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.		

			Ref.
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		18.86	5
σ 30		17.78	5
40		16.72	5
Parachor [P]			
20°C			
30			
40			
Sugd.		237.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 6

NAME	1-Fluorohexane	STRUCTURAL FORMULA
		$CH_3(CH_2)_5F$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}F$	Molecular Weight 104.164

		Ref.
F.P. °C	-103.	3
F.P. 100%		
B.P. °C		
760 mm	91.5	3
100	36.7	5
30	12.4	5
10	-6.2	5
1	-36.8	5
Pressure		
mm 25°C	57.82	5
t_e	976.82	5
Density		
g/ml 20°C	0.7995	3
d_4^t 25	0.7942	3
30		
a	0.8207	5
b	-0.001046	5
Ref. Index		
n_D 20°C	1.3738	3
25	1.3718	3
30		
"C"	0.6257	4
MR (Obs.)	29.7394	4
MR (Calc.)	29.758	5
(nD-d/2)	0.9740	4
Dielectric		
A | 0 to	7.0305	3
B | 120 °C	1299.19	3
C	221.6	3
A* | 5 to	1.4680	5
B* | 115 °C	1222.05	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	99.93	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3516	5
BP	0.0431	5
t_e	0.0354	5
30 mm	0.6098	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.03	5
30 mm	84.98	5
BP	73.03	5
t_e	71.84	5
t_e (d, e)	71.75	5
$\Delta Hv/T_e$	20.06	5
d | to	86.84	5
e | °C	0.1510	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9956	5
30 mm	1.0000	5
BP	0.9481	5
t_e	0.9411	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.		

		Ref.
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	20.35	5
γ 30	19.27	5
40	18.23	5
Parachor [P]		
20°C		
30		
40		
Sugd.	276.8	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		

+ grams/100 grams solvent

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
		$CH_3(CH_2)_6F$
Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{15}F$ — Molecular Weight 118.190

		Ref.
F.P. °C	-73.	3
F.P. 100%		
B.P. °C		
760 mm	117.9	3
100	59.9	5
30	34.2	5
10	14.5	5
1	-18.1	5
Pressure mm 25°C	18.40	5
t_e	1046.85	5
Density g/ml 20°C	0.8062	3
d_4^{t} 25	0.8013	3
30		
a	0.8258	5
b	-0.0_3975	5
Ref. Index n_D 20°C	1.3854	3
25	1.3834	3
30		
"C"	0.6387	4
MR (Obs.)	34.3873	4
MR (Calc.)	34.376	5
(nD-d/2)	0.9823	4
Dielectric		
A | 20 to	7.0835	3
B | 150 °C	1405.79	3
C	216.6	3
A* | 25 to	1.5541	5
B* | 135 °C	1325.66	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	129.35	5

		Ref.
dt/dP		
°C/mm		
25°C	0.9800	5
BP	0.0455	5
t_e	0.0353	5
30 mm	0.6475	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.07	5
30 mm	81.72	5
BP	69.89	5
t_e	68.35	5
t_e (d, e)	68.27	5
$\Delta Hv/T_e$	20.07	5
d | 40 to	86.55	5
e | 140 °C	0.1413	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0024	5
30 mm	1.0000	5
BP	0.9447	5
t_e	0.9348	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.		

		Ref.
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	21.52	5
σ 30	20.49	5
40	19.49	5
Parachor [P] 20°C		
30		
40		
Sugd.	315.8	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		

+ grams/100 grams solvent

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. 8

NAME	1-Fluorooctane	STRUCTURAL FORMULA
		$CH_3(CH_2)_7F$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_8H_{17}F$	132.216

		Ref.
F.P. °C	-64.	3
F.P. 100%		
B.P. °C		
760 mm	142.3	3
100	81.6	5
30	54.5	5
10	33.8	5
1	-0.6	5
Pressure mm 25°C	5.92	5
t_e	1111.10	5
Density g/ml 20°C	0.8116	3
d_4^{t} 25	0.8068	3
30		
a	0.8308	5
b	-0.0_3958	5
Ref. Index n_D 20°C	1.3946	3
25	1.3926	3
30		
"C"	0.6488	4
MR (Obs.)	39.0207	4
MR (Calc.)	38.994	5
(nD-d/2)	0.9888	4
Dielectric		
A | 40 to	7.1411	3
B | 175 °C	1509.34	3
C	212.0	3
A* | to	1.6417	5
B* | °C	1426.61	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	156.55	5

		Ref.
dt/dP °C/mm		
25°C	2.728	5
BP	0.0475	5
t_e	0.0352	5
30 mm	0.6811	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.11	5
30 mm	78.94	5
BP	67.19	5
t_e	65.42	5
t_e (d, e)	65.28	5
$\Delta Hv/T_e$	20.13	5
d | 50 to	86.23	5
e | 165 °C	0.1338	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0054	5
30 mm	1.0000	5
BP	0.9410	5
t_e	0.9294	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.		

		Ref.
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	22.50	5
30	21.45	5
40	20.43	5
Parachor [P] 20°C		
30		
40		
Sugd.	354.8	5
Exp. L.1.%/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 I. FLUOROALKANES

No. 9

NAME	1-Fluorononane	STRUCTURAL FORMULA
		$CH_3(CH_2)_8F$

Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{19}F$	Molecular Weight 146.242

		Ref.
F.P. °C	-40.	3
F.P. 100%		
B.P. °C		
760 mm	165.0	3
100	101.9	5
30	73.6	5
10	51.9	5
1	15.9	5
Pressure		
mm 25°C	1.92	5
t_e	1170.35	5
Density		
g/ml 20°C	0.8159	3
d_4^t 25	0.8113	3
30		
a	0.8343	5
b	-0.0_3919	5
Ref. Index		
n_D 20°C	1.4022	3
25	1.4002	3
30		
"C"	0.6571	4
MR (Obs.)	43.6632	4
MR (Calc.)	43.612	5
(nD-d/2)	0.9942	4
Dielectric		
A | 60 to	7.1977	3
B | 200 °C	1608.48	3
C	207.6	3
A* | 65 to	1.72610	5
B* | 190 °C	1523.63	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	181.92	5

		Ref.
dt/dP		
°C/mm		
25°C	7.623	5
BP	0.0493	5
t_e	0.0350	5
30 mm	0.7115	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.17	5
30 mm	76.51	5
BP	64.89	5
t_e	62.87	5
t_e (d, e)	62.75	5
$\Delta Hv/T_e$	20.20	5
d | to	85.85	5
e | °C	0.1270	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0058	5
30 mm	1.0000	5
BP	0.9385	5
t_e	0.9244	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.		

		Ref.
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	23.30	5
γ 30	22.26	5
40	21.26	5
Parachor [P]		
20°C		
30		
40		
Sugd.	393.8	5
Exp. L. 1. %/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 10

NAME	1-Fluorodecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_9F$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{10}H_{21}F$	160.268

		Ref.
F.P. °C	-35.	3
F.P. 100%		
B.P. °C		
760 mm	186.2	3
100	120.9	5
30	91.5	5
10	69.0	5
1	31.4	5
Pressure mm 25°C	0.63	5
t_e	1225.13	5
Density g/ml 20°C	0.8194	3
d_4^{t} 25	0.8150	3
30		
a	0.8370	5
b	-0.0_3880	5
Ref. Index n_D 20°C	1.4085	3
25	1.4066	3
30		
"C"	0.6639	4
MR (Obs.)	48.3041	4
MR (Calc.)	48.230	5
(nD-d/2)	0.9988	4
Dielectric		
A | 80 to	7.2542	3
B | 230 °C	1704.75	3
C	203.6	3
A* | 85 to	1.80849	5
B* | 210 °C	1618.06	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	205.6	5

		Ref.
dt/dP		
°C/mm		
25°C	21.25	5
BP	0.0509	5
t_e	0.0348	5
30 mm	0.7394	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.17	5
30 mm	74.30	5
BP	62.81	5
t_e	60.60	5
t_e (d, e)	60.46	5
$\Delta Hv/T_e$	20.29	5
d | 85 to	85.40	5
e | 210 °C	0.1213	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0046	5
30 mm	1.0000	5
BP	0.9356	5
t_e	0.9198	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.		

		Ref.
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	23.97	5
γ 30	22.96	5
40	21.98	5
Parachor [P]		
20°C		
30		
40		
Sugd.	432.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 11

NAME	1-Fluoroundecane		STRUCTURAL FORMULA
			$CH_3(CH_2)_{10}F$
Mole % Pur.	Ref. 3	Molecular Formula $C_{11}H_{23}F$	Molecular Weight 174.294

		Ref.
F.P. °C	-16.	3
F.P. 100%		
B.P. °C		
760 mm	206.	3
100	139.	5
30	108.	5
10	85.	5
1	46.	5
Pressure		
mm 25°C	0.21	5
t_e	1275.68	5
Density		
g/ml 20°C	0.8224	3
d_4^t 25	0.8181	3
30		
a	0.8396	5
b	-0.0_3860	
Ref. Index		
n_D 20°C	1.4138	3
25	1.4119	3
30		
"C"	0.6696	4
MR (Obs.)	52.9369	4
MR (Calc.)	52.848	5
(nD-d/2)	1.0026	4
Dielectric		
A 100 to	7.308	3
B 250 °C	1797.8	3
C	200.	3
A* to	1.887	5
B* °C	1709.6	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	227.82	5

		Ref.
dt/dP		
°C/mm		
25°C	58.83	5
BP	0.0524	5
t_e	0.0347	5
30 mm	0.7655	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.09	5
30 mm	72.23	5
BP	60.98	5
t_e	58.51	5
t_e (d, e)	58.47	5
$\Delta Hv/T_e$	20.36	5
d 100 to	84.70	5
e 240 °C	0.1152	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0026	5
30 mm	1.0000	5
BP	0.9347	5
t_e	0.9152	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.		

			Ref.
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		24.56	5
γ 30		23.55	5
40		22.57	5
Parachor [P]			
20°C			
30			
40			
Sugd.		471.8	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			

+ grams/100 grams solvent

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 188.320

		Ref.
F.P. °C	-13.	3
F.P. 100%		
B.P. °C		
760 mm	225.	3
100	156.	5
30	125.	5
10	101.	5
1	60.	5
Pressure		
mm 25°C	0.07	5
t_e	1324.09	5
Density		
g/ml 20°C	0.8249	3
d_4^{25}	0.8208	3
30		
a	0.8413	5
b	-0.0_3820	5
Ref. Index		
n_D 20°C	1.4184	3
25	1.4165	3
30		
"C"	0.6746	4
MR (Obs.)	57.5797	4
MR (Calc.)	57.466	5
(nD-d/2)	1.0059	4
Dielectric		
A | 115 to	7.357	3
B | 260 °C	1885.6	3
C	196.	3
A* | to	1.959	5
B* | °C	1796.4	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	249.23	5

		Ref.
dt/dP °C/mm		
25°C	168.4	5
BP	0.0538	5
t_e	0.0345	5
30 mm	0.7895	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.35	5
30 mm	70.49	5
BP	59.52	5
t_e	56.69	5
t_e (d, e)	56.87	5
$\Delta Hv/T_e$	20.44	5
d | 120 to	84.13	5
e | 260 °C	0.1094	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9995	5
30 mm	1.0000	5
BP	0.9361	5
t_e	0.9110	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.		

			Ref.
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		25.06	5
γ 30		24.08	5
40		23.13	5
Parachor [P]			
20°C			
30			
40			
Sugd.		510.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 13

NAME	1-Fluorotridecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{12}F$

Mole % Pur.	Ref. 3	Molecular Formula $C_{13}H_{27}F$	Molecular Weight 202.346

		Ref.
F.P. °C	+3.	3
F.P. 100%		
B.P. °C		
760 mm	242.	3
100	171.	5
30	139.	5
10	114.	5
1	73.	5
Pressure		
mm 25°C	0.02	5
t_e	1366.68	5
Density		
g/ml 20°C	0.8271	3
d_4^t 25	0.8230	3
30		
a	0.8435	5
b	-0.0_3820	5
Ref. Index		
n_D 20°C	1.4224	3
25	1.4205	3
30		
"C"	0.6788	4
MR (Obs.)	62.2203	4
MR (Calc.)	62.084	5
(nD-d/2)	1.0088	4
Dielectric		
A 125 to	7.406	3
B 285 °C	1969.1	3
C	193.	3
A* to	2.030	5
B* °C	1878.8	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	268.11	5

		Ref.
dt/dP		
°C/mm		
25°C	443.6	5
BP	0.0549	5
t_e	0.0343	5
30 mm	0.8109	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.97	5
30 mm	68.59	5
BP	57.65	5
t_e	54.86	5
t_e (d, e)	54.87	5
$\Delta Hv/T_e$	20.51	5
d 130 to	83.39	5
e 275 °C	0.1064	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C	405.47	5
P_c mm	13968.92	5
PV/RT		
25°C	0.9962	5
30 mm	1.0000	5
BP	0.9312	5
t_e	0.9075	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.		

			Ref.
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		25.51	5
γ 30		24.51	5
40		23.54	5
Parachor [P]			
20°C			
30			
40			
Sugd.		549.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 14

NAME	1-Fluorotetradecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{13}F$

Mole % Pur.	Ref. 3	Molecular Formula $C_{14}H_{29}F$	Molecular Weight 216.372

		Ref.
F.P. °C	4.	3
F.P. 100%		
B.P. °C		
760 mm	258.	3
100	185.9	5
30	152.99	5
10	127.62	5
1	84.98	5
Pressure mm 25°C	0.01	5
t_e	1407.10	5
Density g/ml 20°C	0.8290	3
d_4^t 25	0.8250	3
30		
a	0.8450	5
b	-0.03800	5
Ref. Index n_D 20°C	1.4259	3
25	1.4240	3
30		
"C"	0.6826	4
MR (Obs.)	66.8618	4
MR (Calc.)	66.702	5
(nD-d/2)	1.0114	4
Dielectric		
A | 150 to	7.449	3
B | 320 °C	2048.3	3
C		
A* | 150 to	2.09396	5
B* | 300 °C	1957.14	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	286.27	5

		Ref.
dt/dP		
°C/mm		
25°C	1172.	5
BP	0.0561	5
t_e	0.0342	5
30 mm	0.8314	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.71	5
30 mm	66.84	5
BP	56.32	5
t_e	53.17	5
t_e (d, e)	53.49	5
$\Delta Hv/T_e$	20.56	5
d | 150 to	82.17	5
e | 290 °C	0.1002	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	0.9344	5
t_e	0.9040	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.		

		Ref.
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	25.90	5
γ 30	24.91	5
40	23.96	5
Parachor [P]		
20°C		
30		
40		
Sugd.	588.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

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.
F.P. °C	17.	3
F.P. 100%		
B.P. °C		
760 mm	274.	3
100	199.92	5
30	166.26	5
10	140.28	5
1	96.57	5
Pressure		
mm 25°C	0.02	5
t_e	1445.10	5
Density		
g/ml 20°C	0.8306	3
d_4^{t} 25	0.8267	3
30		
a	0.8462	5
b	-0.0_3780	5
Ref. Index		
n_D 20°C	1.4290	3
25	1.4271	3
30		
"C"	0.6859	4
MR (Obs.)	71.5107	4
MR (Calc.)	71.320	5
(nD-d/2)	1.0137	4
Dielectric		
A | 155 to	7.488	3
B | 320 °C	2123.4	
C	187.	3
A* | 160 to	2.15324	5
B* | 315 °C	2031.74	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	303.61	5

		Ref.
dt/dP		
°C/mm		
25°C	3100.	5
BP	0.0572	5
t_e	0.0341	5
30 mm	0.8508	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.56	5
30 mm	65.23	5
BP	54.26	5
t_e	51.59	5
t_e (d, e)	51.24	5
$\Delta Hv/T_e$	20.61	5
d | 160 to	82.15	5
e | 315 °C	0.1018	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	0.9211	5
t_e	0.9006	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.		

		Ref.
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	26.24	5
30	25.27	5
40	24.32	5
Parachor [P]		
20°C		
30		
40		
Sugd.	627.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 16

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.
F.P. °C	18.	3
F.P. 100%		
B.P. °C 760 mm	289.	3
100	213.61	5
30	179.20	5
10	152.63	5
1	107.86	5
Pressure mm 25°C t_e	1481.96	5
Density g/ml 20°C	0.8321	3
d_4^t 25	0.8282	3
30		
a	0.8477	5
b	-0.0_3780	5
Ref. Index n_D 20°C	1.4317	3
25	1.4298	3
30		
"C"	0.6888	4
MR (Obs.)	76.1431	4
MR (Calc.)	75.938	5
(nD-d/2)	1.0156	4
Dielectric		
A | 170 to	7.520	3
B | 335 °C	2194.8	3
C	184.	3
A* | 175 to	2.20457	5
B* | 330 °C	2102.84	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	320.65	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0583	5
t_e	0.0340	5
30 mm	0.8701	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.51	5
30 mm	63.71	5
BP	53.07	5
t_e	50.08	5
t_e (d, e)	50.00	5
$\Delta Hv/T_e$	20.61	5
d | 170 to	81.08	5
e | 330 °C	0.0969	5
d' | to		
e' | °C		
d_c g/ml		
v_c^c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C		
30 mm	1.0000	5
BP	0.9234	5
t_e	0.8970	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.		

			Ref.
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	26.55	5
γ	30	25.57	5
	40	24.62	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	666.8	5
Exp. L.1.%/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 I. FLUOROALKANES

No. 17

NAME	1-Fluoroheptadecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{16}F$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{17}H_{35}F$	258.450

		Ref.
F.P. °C	29.	3
F.P. 100%		
B.P. °C 760 mm	303.	3
100	226.22	5
30	191.19	5
10	164.10	5
1	118.43	5
Pressure mm 25°C t_e	1515.75	5
Density g/ml 20°C	0.8334[b]	3
d_4^{t} 25	0.8295[b]	3
30		
a	0.8490	5
b	-0.0_3780	5
Ref. Index n_D 20°C	1.4341[b]	3
25	1.4322[b]	3
30		
"C"	0.6913	4
MR (Obs.)	80.7764	4
MR (Calc.)	80.556	5
(nD-d/2)	1.0174	4
Dielectric		
A | 185 to	7.556	3
B | 350 °C	2262.5	3
C	181.	3
A* | 185 to	2.25899	5
B* | 350 °C	2170.33	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	336.10	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0592	5
t_e		0.0339	5
30 mm		0.8863	5
ΔHm cal/g			
ΔHv cal/g 25°C		82.50	5
30 mm		62.32	5
BP		51.62	5
t_e		48.73	5
t_e (d, e)		48.45	5
$\Delta Hv/T_e$		20.67	5
d | 185 to		80.63	5
e | 350 °C		0.0958	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		0.9181	5
t_e		0.8942	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.			

			Ref.
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		26.83	5
γ 30		25.84	5
40		24.88	5
Parachor [P] 20°C			
30			
40			
Sugd.		705.8	5
Exp. L. 1. %/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

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No. 18

NAME	1-Fluorooctadecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{17}F$

Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{37}F$	Molecular Weight 272.476

		Ref.
F.P. °C	29.	3
F.P. 100%		
B.P. °C 760 mm	316.	3
100	237.65	5
30	201.99	5
10	174.39	5
1	127.80	5
Pressure mm 25°C t_e	1545.77	5
Density g/ml 20°C	0.8345	3
d_4^t 25	0.8307	3
30		
a	0.8497	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4363[b]	3
25	1.4344[b]	3
30		
"C"	0.6937	4
MR (Obs.)	85.4232	4
MR (Calc.)	85.174	5
(nD-d/2)	1.0190	4
Dielectric		
A | 195 to	7.586	3
B | 360 °C	2327.4	3
C	179.	3
A* | 195 to	2.30719	5
B* | 355 °C	2235.05	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	350.33	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0601	5
t_e	0.0338	5
30 mm	0.9028	5
ΔHm cal/g		
ΔHv cal/g 25°C	81.98	5
30 mm	60.76	5
BP	49.94	5
t_e	47.29	5
t_e (d, e)	46.68	5
$\Delta Hv/T_e$	20.67	5
d | to	79.94	5
e | °C	0.0949	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	0.9100	5
t_e	0.8911	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.		

		Ref.
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	27.07	5
γ 30	26.10	5
40	25.15	5
Parachor [P] 20°C		
30		
40		
Sugd.	744.8	5
Exp. L.1.%/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

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TABLE I. FLUOROALKANES

No. 19

NAME	1-Fluorononadecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{18}F$

Mole % Pur.	Ref. 3	Molecular Formula $C_{19}H_{39}F$	Molecular Weight 286.502

		Ref.
F.P. °C	39.	3
F.P. 100%		
B.P. °C		
760 mm	329.	3
100	249.82	5
30	213.53	5
10	185.42	5
1	137.94	5
Pressure mm 25°C		
t_e	1578.00	5
Density g/ml 20°C	0.8356[b]	3
d_4^t 25	0.8318[b]	3
30		
a	0.8508	5
b	-0.0_3760	5
Ref. Index		
n_D 20°C	1.4383[b]	3
25	1.4364[b]	3
30		
"C"	0.6957	4
MR (Obs.)	90.0599	4
MR (Calc.)	89.792	5
(nD-d/2)	1.0205	4
Dielectric		
A | 210 to	7.612	3
B | 375 °C	2389.7	3
C	176.	3
A* | 210 to	2.35002	5
B* | 370 °C	2297.40	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	365.40	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0610	5
t_e	0.0338	5
30 mm	0.9192	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.17	5
30 mm	59.55	5
BP	49.24	5
t_e	46.08	5
t_e (d, e)	45.99	5
$\Delta Hv/T_e$	20.68	5
d | 210 to	78.63	5
e | 370 °C	0.0893	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	0.9175	5
t_e	0.8882	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.		

			Ref.
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		27.31	5
γ 30		26.33	5
40		25.38	5
Parachor [P]			
20°C			
30			
40			
Sugd.		783.8	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			

[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

No. 20

NAME	1-Fluoroeicosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{19}F$

Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{41}F$	Molecular Weight 300.528

		Ref.
F.P. °C	38.	3
F.P. 100%		
B.P. °C		
760 mm	341.	3
100	260.72	5
30	223.82	5
10	195.21	5
1	146.86	5
Pressure mm 25°C t_e	1607.15	5
Density g/ml 20°C	0.8365[b]	3
d_4^{t} 25	0.8328[b]	3
30		
a	0.8513	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4401[b]	3
25	1.4382[b]	3
30		
"C"	0.6977	4
MR (Obs.)	94.7041	4
MR (Calc.)	94.410	5
(nD-d/2)	1.0218	4
Dielectric		
A | 220 to	7.636	3
B | 390 °C	2450.1	3
C	174.	3
A* | 220 to	2.3899	5
B* | 390 °C	2357.51	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	379.08	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0619	5
t_e	0.0337	5
30 mm	0.9351	5
ΔHm cal/g		
ΔHv cal/g		
25°C	81.71	5
30 mm	58.19	5
BP	48.17	5
t_e	44.84	5
t_e (d, e)	44.92	5
$\Delta Hv/T_e$	20.66	5
d | 220 to	77.33	5
e | 385 °C	0.0855	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	0.9190	5
t_e	0.8857	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.		

		Ref.
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	27.51	5
γ 30	26.55	5
40	25.61	5
Parachor [P]		
20°C		
30		
40		
Sugd.	822.8	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		

[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

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TABLE I. FLUOROALKANES

No. 21

NAME	2-Fluoropropane	STRUCTURAL FORMULA
		CH_3CHFCH_3

Mole % Pur.	Ref. 3	Molecular Formula C_3H_7F	Molecular Weight 62.086

		Ref.
F.P. °C	-133.4	3
F.P. 100%		
B.P. °C		
760 mm	-9.4	3
100	-50.7	5
30	-68.9	5
10	-82.7	5
1	-105.5	5
Pressure mm 25°C	2546.7	5
t_e	703.6	5
Density g/ml 20°C	0.7238[a]	3
d_4^t 25	0.7158[a]	3
30		
a	0.7588	5
b	-0.00135	5
Ref. Index n_D 20°C	1.3020[a]	3
25	1.2992[a]	3
30		
"C"	0.5643	4
MR (Obs.)	16.138	4
MR (Calc.) (nD-d/2)	15.904	5
Dielectric		
A -69 to	6.94163	5
B 19 °C	940.5	5
C	241.	5
A* -69 to	1.25964	5
B* 9 °C	876.8	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	-11.29	5

		Ref.
dt/dP °C/mm		
25°C	0.0128	5
BP	0.0326	5
t_e	0.0346	5
30 mm	0.4559	5
ΔHm cal/g		
ΔHv cal/g		
25°C	79.55	5
30 mm	97.61	5
BP	86.31	5
t_e	86.68	5
t_e (d, e)	86.67	5
$\Delta Hv/T_e$	20.55	5
d -69 to	84.52	5
e 9 °C	0.1900	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9254	5
30 mm	1.0000	5
BP	0.9638	5
t_e	0.9658	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.		

			Ref.
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		11.52	5
γ 30		10.36	5
40		9.23	5
Parachor [P] 20°C			
30			
40			
Sugd.		159.8	5
Exp. L.1.%/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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 22

NAME	2-Fluorobutane	STRUCTURAL FORMULA
		$CH_3CHFCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9F	Molecular Weight 76.112

		Ref.
F.P. °C	-121.4	3
F.P. 100%		
B.P. °C		
760 mm	25.1	3
100	-20.1	5
30	-40.1	5
10	-55.4	5
1	-80.7	5
Pressure		
mm 25°C	757.2	5
t_e	798.6	5
Density		
g/ml 20°C	0.7621	3
d_4^{t} 25	0.7560	3
30		
a	0.7871	5
b	-0.00112	5
Ref. Index		
n_D 20°C	1.3326	3
25	1.3300	3
30		
"C"	0.5876	4
MR (Obs.)	20.521	4
MR (Calc.) (nD-d/2)	20.522	5
Dielectric		
A | -40 to	7.05343	5
B | 56 °C	1081.1	5
C	234.	5
A* | -40 to	1.41842	5
B* | 46 °C	1012.5	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	26.44	5

		Ref.
dt/dP °C/mm		
25°C	0.0356	5
BP	0.0355	5
t_e	0.0341	5
30 mm	0.5033	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.28	5
30 mm	93.88	5
BP	82.27	5
t_e	82.03	5
t_e (d, e)	82.03	5
$\Delta Hv/T_e$	20.84	5
d | -40 to	86.73	5
e | 46 °C	0.1780	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9594	5
30 mm	1.0000	5
BP	0.9593	5
t_e	0.9581	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.		

			Ref.
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		15.48	5
γ 30		14.41	5
40		13.36	5
Parachor [P]			
20°C			
30			
40			
Sugd.		198.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 23

NAME	2-Fluoro-2-methylpropane	STRUCTURAL FORMULA
		$CH_3CF(CH_3)CH_3$

Mole % Pur.	Ref.	Molecular Formula C_4H_9F	Molecular Weight 76.112
	3		

		Ref.
F.P. °C	-77.	3
F.P. 100%		
B.P. °C		
760 mm	12.1	3
100	-31.6	5
30	-50.9	5
10	-65.6	5
1	-90.0	5
Pressure		
mm 25°C	1214.9	5
t_e	762.8	5
Density		
g/ml 20°C	0.7421[a]	3
d_4^t 25	0.7352[a]	3
30		
a	0.7710	5
b	-0.00122	5
Ref. Index		
n_D 20°C	1.3201[a]	3
25	1.3174[a]	3
30		
"C"	0.5818	4
MR (Obs.)	20.352	4
MR (Calc.) (nD-d/2)	20.522	5
Dielectric		
A -51 to	7.00248	5
B 42 °C	1022.6	5
C	236.	5
A* -51 to	1.38356	5
B* 32 °C	956.2	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	12.20	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0238	5
BP	0.0344	5
t_e	0.0343	5
30 mm	0.4849	5
ΔHm cal/g		
ΔHv cal/g		
25°C	75.49	5
30 mm	88.62	5
BP	77.74	5
t_e	77.73	5
t_e (d, e)	77.72	5
$\Delta Hv/T_e$	20.73	5
d -51 to	79.83	5
e 32 °C	0.1726	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9477	5
30 mm	1.0000	5
BP	0.9609	5
t_e	0.9608	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.		

		Ref.
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	13.78	5
γ 30	12.65	5
40	11.53	5
Parachor [P]		
20°C		
30		
40		
Sugd.	198.8	5
Exp. L.1.%/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 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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 24

NAME	2-Fluoro-2-methylbutane	STRUCTURAL FORMULA
		$CH_3CF(CH_3)CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}F$	Molecular Weight 90.138

		Ref.
F.P. °C	-121.	3
F.P. 100%		
B.P. °C 760 mm	44.8	3
100	-2.6	5
30	-23.7	5
10	-39.8	5
1	-66.6	5
Pressure mm 25°C	356.9	5
t_e	852.5	5
Density g/ml 20°C	0.7780	3
d_4^t 25	0.7730	3
30		
a	0.7982	5
b	-0.0_3937	5
Ref. Index n_D 20°C	1.3502	3
25	1.3476	3
30		
"C"	0.6044	4
MR (Obs.)	24.943	4
MR (Calc.) (nD-d/2)	25.140	5
Dielectric		
A -24 to	7.11734	5
B 78 °C	1166.3	5
C	231.	5
A* -24 to	1.53378	5
B* 68 °C	1094.7	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	48.08	5

		Ref.
dt/dP °C/mm		
25°C	0.0681	5
BP	0.0371	5
t_e	0.0339	5
30 mm	0.5307	5
ΔHm cal/g		
ΔHv cal/g		
25°C	78.35	5
30 mm	86.13	5
BP	75.20	5
t_e	74.68	5
t_e (d, e)	74.68	5
$\Delta Hv/T_e$	20.96	5
d -24 to	82.35	5
e 68 °C	0.1595	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9741	5
30 mm	1.0000	5
BP	0.9569	5
t_e	0.9538	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.		

		Ref.
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	17.61	5
γ 30	16.66	5
40	15.71	5
Parachor [P] 20°C		
30		
40		
Sugd.	237.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 25

NAME	3-Fluorohexane	STRUCTURAL FORMULA
		$CH_3CHF(CH_2)_3CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}F$	Molecular Weight 104.164

		Ref.
F.P. °C	-104.	3
F.P. 100%		
B.P. °C 760 mm	82.9	3
100	31.2	5
30	8.1	5
10	-9.7	5
1	-39.2	5
Pressure mm 25°C	73.94	5
t_e	955.2	5
Density g/ml 20°C	0.7949	3
d_4^t 25	0.7900	3
30		
a	0.8145	5
b	-0.0_3962	5
Ref. Index n_D 20°C	1.3714	3
25	1.3689	3
30		
"C"	0.6255	4
MR (Obs.)	29.740	4
MR (Calc.) (nD-d/2)	29.758	5
Dielectric		
A | 8 to	7.21512	5
B | 120 °C	1325.9	5
C	223.	5
A* | 8 to	1.65805	5
B* | 110 °C	1249.4	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	90.07	5

		Ref.
dt/dP °C/mm		
25°C	0.2725	5
BP	0.0403	5
t_e	0.0336	5
30 mm	0.5830	5
ΔHm cal/g		
ΔHv cal/g		
25°C	83.59	5
30 mm	86.25	5
BP	74.70	5
t_e	73.63	5
t_e (d, e)	73.60	5
$\Delta Hv/T_e$	21.11	5
d | 8 to	87.49	5
e | 110 °C	0.1543	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9936	5
30 mm	1.0000	5
BP	0.9516	5
t_e	0.9452	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.		

			Ref.
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		19.88	5
γ 30		18.89	5
40		17.93	5
Parachor [P] 20°C			
30			
40			
Sugd.		276.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

NAME	1-Fluoroheneicosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{19}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{21}H_{43}F$	Molecular Weight 314.554

		Ref.
F.P. °C	47.	3
F.P. 100%		
B.P. °C 760 mm	353.	3
100	271.	5
30	233.	5
10	204.	5
1	155.	5
Pressure mm 25°C t_e	1634.5	5
Density g/ml 20°C	0.8373[a]	3
d_4^{t} 25	0.8336[a]	3
30		
a	0.8521	5
b	-0.03740	5
Ref. Index n_D 20°C	1.4417[a]	3
25	1.4398[a]	3
30		
"C"	0.6994	4
MR (Obs.)	99.342	4
MR (Calc.) (nD-d/2)	99.028	5
Dielectric		
A 233 to	7.64224	5
B 422 °C	2499.8	5
C	172.	5
A* 233 to	2.41202	5
B* 412 °C	2407.2	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	392.42	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0630	5
t_e	0.0339	5
30 mm	0.9521	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	56.74	5
BP	46.63	5
t_e	43.49	5
t_e (d, e)	43.29	5
$\Delta Hv/T_e$	20.55	5
d 233 to	76.50	5
e 412 °C	0.0846	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	0.9120	5
t_e	0.8826	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.		

			Ref.
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		27.69	5
γ 30		26.73	5
40		25.79	5
Parachor [P] 20°C			
30			
40			
Sugd.		861.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 27

NAME	1-Fluorodocosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{20}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{45}F$	Molecular Weight 328.580

		Ref.
F.P. °C	46.	3
F.P. 100%		
B.P. °C 760 mm	364.	3
100	281.	5
30	243.	5
10	213.	5
1	163.	5
Pressure mm 25°C t_e	1660.1	5
Density g/ml 20°C	0.8381[a]	3
d_4^t 25	0.8344[a]	3
30		
a	0.8529	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4432[a]	3
25	1.4413[a]	3
30		
"C"	0.7010	4
MR (Obs.)	103.978	4
MR (Calc.) (nD-d/2)	103.646	5
Dielectric		
A | 243 to	7.65388	5
B | 435 °C	2548.8	5
C	170.	5
A* | 243 to	2.43894	5
B* | 425 °C	2456.3	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	404.87	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0639	5
t_e	0.0339	5
30 mm	0.9671	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	55.43	5
BP	45.45	5
t_e	42.27	5
t_e (d, e)	42.09	5
ΔHv/T_e	20.48	5
d | 243 to	75.40	5
e | 425 °C	0.0823	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	0.9103	5
t_e	0.8800	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.		

		Ref.
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	27.87	5
γ 30	26.90	5
40	25.95	5
Parachor [P] 20°C		
30		
40		
Sugd.	900.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

NAME	1-Fluorotricosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{21}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{23}H_{47}F$	Molecular Weight 342.606

		Ref.
F.P. °C	54.	3
F.P. 100%		
B.P. °C 760 mm	375.	3
100	291.	5
30	252.	5
10	222.	5
1	171.	5
Pressure mm 25°C t_e	1685.6	5
Density g/ml 20°C	0.8388[a]	3
d_4^t 25	0.8352[a]	3
30		
a	0.8532	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4446[a]	3
25	1.4427[a]	3
30		
"C"	0.7025	4
MR (Obs.)	108.623	4
MR (Calc.) (nD-d/2)	108.264	5
Dielectric		
A | 252 to	7.66520	5
B | 447 °C	2597.9	5
C	168.	5
A* | 252 to	2.46489	5
B* | 437 °C	2505.5	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	417.32	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0649	5
t_e	0.0340	5
30 mm	0.9821	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	54.23	5
BP	44.37	5
t_e	41.16	5
t_e (d, e)	40.98	5
$\Delta Hv/T_e$	20.42	5
d | 252 to	74.39	5
e | 437 °C	0.0801	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	0.9086	5
t_e	0.8774	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.		

		Ref.
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	28.03	5
γ 30	27.08	5
40	26.15	5
Parachor [P] 20°C		
30		
40		
Sugd.	939.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 29

NAME	1-Fluorotetracosane				STRUCTURAL FORMULA
					$CH_2F(CH_2)_{22}CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{49}F$	Molecular Weight 356.632		

		Ref.			Ref.			Ref.
F.P. °C	53.	3	dt/dP °C/mm 25°C			f | | to		
F.P. 100%			BP	0.0657	5	g | | °K		
B.P. °C			t_e	0.0340	5	h		
760 mm	385.	3	30 mm	0.9957	5	f' | | to		
100	299.	5	ΔHm cal/g			g' | | °K		
30	260.	5	ΔHv cal/g 25°C			h'		
10	230.	5	30 mm	53.04	5	m | | to		
1	178.	5	BP	43.29	5	n | | °K		
Pressure mm 25°C			t_e	40.04	5	o		
t_e	1708.8	5	t_e (d, e)	39.88	5	m' | | to		
Density g/ml 20°C	0.8395[a]	3	ΔHv/T_e	20.35	5	n' | | °K		
d_4^t 25	0.8358[a]	3	d | 260 to	73.36	5	o'		
30			e | 449 °C	0.0781	5	Surface tension		
a	0.8543	5	d' | to			dynes/cm. 20°C	28.18	5
b	-0.0_3740	5	e' | °C			γ 30	27.20	5
Ref. Index			d_c g/ml			40	26.25	5
n_D 20°C	1.4459[a]	3	v_c ml/g			Parachor [P]		
25	1.4440[a]	3	t_c °C			20°C		
30			P_c mm			30		
"C"	0.7038	4	PV/RT 25°C			40		
MR (Obs.)	113.262	4	30 mm	1.0000	5	Sugd.	978.8	5
MR (Calc.) (nD-d/2)	112.882	5	BP	0.9072	5	Exp. L.1.%/wt. u.		
Dielectric			t_e	0.8751	5	Dispersion		
A | 260 to	7.67356	5	t_c			Flash Point °C		
B | 459 °C	2640.8	5	ΔHc kcal/m			Fire Point		
C	166.	5	ΔHf			M. Spec.		
A* | 260 to	2.48749	5	ΔFf			Ultra V.		
B* | 449 °C	2548.6	5	Viscosity centistokes			X-Ray Dif.		
K			η °C			Infrared		
c						Solubility in [+]		
t_k | to			B^v | to		Acetone		
t_x | °C			A^v | °C		Carbon tet.		
A' | to			(B^v) | to		Benzene		
B' | °C			(A^v) | °C		Ether		
C'			c_p liq. °K			n-Heptane		
A'* to			c_p vap. °K			Ethanol		
B'* °C			c_v vap.			Water		
Ac | to						Water in		
Bc | t_c °C								
Cc								
Cryos. A° consts. 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 30

NAME	1-Fluoropentacosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{23}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{25}H_{51}F$	Molecular Weight 370.658

		Ref.
F.P. °C	60.	3
F.P. 100%		
B.P. °C		
760 mm	395.	3
100	308.	5
30	269.	5
10	238.	5
1	185.	5
Pressure mm 25°C		
t_e	1731.9	5
Density		
g/ml 20°C	0.8401[a]	3
d_4^t 25	0.8365[a]	3
30		
a	0.8545	5
b	-0.0_3720	5
Ref. Index		
n_D 20°C	1.4470[a]	3
25	1.4452[a]	3
30		
"C"	0.7049	4
MR (Obs.)	117.884	4
MR (Calc.) (nD-d/2)	117.500	5
Dielectric		
A | 269 to	7.68172	5
B | 470 °C	2683.7	5
C	164.	5
A* | 269 to	2.50932	5
B* | 460 °C	2591.7	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	440.	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0665	5
t_e	0.0341	5
30 mm	1.0092	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	51.94	5
BP	42.30	5
t_e	39.04	5
t_e (d, e)	38.87	5
$\Delta Hv/T_e$	20.29	5
d | 269 to	72.39	5
e | 460 °C	0.0762	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	0.9057	5
t_e	0.8729	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.		

			Ref.
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		28.32	5
γ 30		27.36	5
40		26.43	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1017.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 31

NAME	1-Fluorohexacosane	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{26}H_{53}F$ — Molecular Weight 384.684	$CH_2F(CH_2)_{24}CH_3$

		Ref.
F.P. °C	59.	3
F.P. 100%		
B.P. °C 760 mm	404.	3
100	316.	5
30	276.	5
10	245.	5
1	192.	5
Pressure mm 25°C t_e	1752.2	5
Density g/ml 20°C	0.8406[a]	3
d_4^t 25 30	0.8370[a]	3
a	0.8550	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4481[a]	3
25	1.4463[a]	3
30		
"C"	0.7061	4
MR (Obs.)	122.533	4
MR (Calc.) (nD-d/2)	122.118	5
Dielectric		
A | 276 to	7.68712	5
B | 480 °C	2720.4	5
C	162.	5
A* | 276 to	2.52858	5
B* | 470 °C	2628.8	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	450.21	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0673	5
t_e	0.0341	5
30 mm	1.0212	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	50.84	5
BP	41.30	5
t_e	38.02	5
t_e (d, e)	37.86	5
ΔHv/T_e	20.22	5
d | 276 to	71.40	5
e | 470 °C	0.0745	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	0.9043	5
t_e	0.8706	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.		

			Ref.
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		28.44	5
σ 30		27.48	5
40		26.54	5
Parachor [P] 20°C			
30			
40			
Sugd.		1056.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 32

NAME	1-Fluoroheptacosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{25}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{27}H_{55}F$	Molecular Weight 398.710

		Ref.
F.P. °C	65.	3
F.P. 100%		
B.P. °C 760 mm	413.	3
100	324.	5
30	284.	5
10	252.	5
1	198.	5
Pressure mm 25°C t_e	1772.5	5
Density g/ml 20°C	0.8411[a]	3
d_4^t 25	0.8376[a]	3
30		
a	0.8551	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4491[a]	3
25	1.4473[a]	3
30		
"C"	0.7072	4
MR (Obs.)	127.171	4
MR (Calc.) (nD-d/2)	126.736	5
Dielectric		
A | 284 to	7.70111	5
B | 490 °C	2766.9	5
C	161.	5
A* | 284 to	2.55544	5
B* | 480 °C	2675.4	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	460.41	5

			Ref.
dt/dP °C/mm 25°C BP		0.0680	5
t_e		0.0342	5
30 mm		1.0340	5
ΔHm cal/g			
ΔHv cal/g 25°C 30 mm		49.77	5
BP		40.39	5
t_e		37.10	5
t_e (d, e)		36.95	5
$\Delta Hv/T_e$		20.17	5
d | 284 to		70.32	5
e | 480 °C		0.0725	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		0.9028	5
t_e		0.8685	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.			

			Ref.
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		28.56	5
γ 30		27.62	5
40		26.70	5
Parachor [P] 20°C			
30			
40			
Sugd.		1095.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 33

NAME	1-Fluorooctacosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{26}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{57}F$	Molecular Weight 412.736

		Ref.
F.P. °C	64.	3
F.P. 100%		
B.P. °C 760 mm	422.	3
100	332.	5
30	291.	5
10	259.	5
1	205.	5
Pressure mm 25°C t_e	1793.2	5
Density g/ml 20°C	0.8416[a]	3
d_4^t 25	0.8381[a]	3
30		
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 | 501 °C	2803.5	5
C	159.	5
A* | 291 to	2.57288	5
B* | 491 °C	2712.4	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	470.65	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0688	5
t_e	0.0342	5
30 mm	1.0460	5
ΔHm cal/g		
ΔHv 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
$\Delta Hv/T_e$	20.10	5
d | 291 to	69.46	5
e | 491 °C	0.0709	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	0.9016	5
t_e	0.8665	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.		

		Ref.
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	28.67	5
γ 30	27.73	5
40	26.81	5
Parachor [P] 20°C		
30		
40		
Sugd.	1134.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 34

NAME	1-Fluorononacosane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{27}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{29}H_{59}F$	Molecular Weight 426.762

		Ref.
F.P. °C	70.	3
F.P. 100%		
B.P. °C 760 mm	430.	3
100	339.	5
30	298.	5
10	265.	5
1	211.	5
Pressure mm 25°C t_e	1811.1	5
Density g/ml 20°C	0.8420[a]	3
d_4^t 25	0.8385[a]	3
30		
a	0.8560	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4510[a]	3
25	1.4491[a]	3
30		
"C"	0.7093	4
MR (Obs.)	136.470	4
MR (Calc.) (nD-d/2)	135.972	5
Dielectric		
A | 298 to	7.70869	5
B | 510 °C	2834.0	5
C	157.	5
A* | 298 to	2.58802	5
B* | 500 °C	2743.3	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	479.74	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0695	5
t_e	0.0343	5
30 mm	1.0565	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	47.86	5
BP	38.67	5
t_e	35.34	5
t_e (d, e)	35.21	5
$\Delta Hv/T_e$	20.03	5
d | 298 to	68.57	5
e | 500 °C	0.0695	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	0.9004	5
t_e	0.8646	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.		

			Ref.
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		28.77	5
γ 30		27.82	5
40		26.90	5
Parachor [P] 20°C			
30			
40			
Sugd.		1173.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 35

NAME	1-Fluorotriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{28}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{61}F$	Molecular Weight 440.788

		Ref.
F.P. °C	69.	3
F.P. 100%		
B.P. °C 760 mm	438.	3
100	347.	5
30	304.	5
10	272.	5
1	216.	5
Pressure mm 25°C t_e	1829.1	5
Density g/ml 20°C	0.8425[a]	3
d_4^t 25	0.8389[a]	3
30		
a	0.8569	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4518[a]	3
25	1.4499[a]	3
30		
"C"	0.7100	4
MR (Obs.)	141.088	4
MR (Calc.) (nD-d/2)	140.590	5
Dielectric		
A | 304 to	7.71961	5
B | 519 °C	2874.2	5
C	156.	5
A* | 304 to	2.61068	5
B* | 509 °C	2783.7	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	488.83	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0701	5
t_e	0.0343	5
30 mm	1.0677	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	46.93	5
BP	37.85	5
t_e	34.49	5
t_e (d, e)	34.40	5
ΔHv/T_e	19.95	5
d | 304 to	67.61	5
e | 509 °C	0.0679	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	0.8992	5
t_e	0.8628	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.		

			Ref.
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		28.87	5
γ 30		27.90	5
40		26.95	5
Parachor [P] 20°C			
30			
40			
Sugd.		1212.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 36

NAME	1-Fluorohentriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{29}CH_3$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{31}H_{63}F$	454.814

		Ref.
F.P. °C	74.	3
F.P. 100%		
B.P. °C 760 mm	446.	3
100	354.	5
30	311.	5
10	278.	5
1	222.	5
Pressure mm 25°C t_e	1846.9	5
Density g/ml 20°C	0.8428[a]	3
d_4^t 25	0.8393[a]	3
30		
a	0.8568	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4526[a]	3
25	1.4507[a]	3
30		
"C"	0.7109	4
MR (Obs.)	145.748	4
MR (Calc.) (nD-d/2)	145.208	5
Dielectric		
A | 311 to	7.72195	5
B | 528 °C	2904.7	5
C	154.	5
A* | 311 to	2.62485	5
B* | 518 °C	2814.7	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	497.93	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0708	5
t_e		0.0344	5
30 mm		1.0782	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		46.09	5
BP		37.10	5
t_e		33.73	5
t_e (d, e)		33.64	5
$\Delta Hv/T_e$		19.90	5
d | 311 to		66.82	5
e | 518 °C		0.0667	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		0.8980	5
t_e		0.8609	5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes			
η °C			
B^v | to			
A^v | °C			
(B^v) |			
(A^v) |			
c_p liq. °			
c_p vap. °K			
c_v vap.			

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm. 20°C		28.95	5
γ 30		28.00	5
40		27.08	5
Parachor [P] 20°C			
30			
40			
Sugd.		1251.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 37

NAME	1-Fluorodotriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{30}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{65}F$	Molecular Weight 468.840

		Ref.
F.P. °C	73.	3
F.P. 100%		
B.P. °C 760 mm	454.	3
100	361.	5
30	318.	5
10	284.	5
1	228.	5
Pressure mm 25°C t_e	1864.7	5
Density g/ml 20°C	0.8432[a]	3
d_4^t 25 30	0.8397[a]	3
a	0.8572	5
b	-0.03700	5
Ref. Index n_D 20°C	1.4533[a]	3
25	1.4514[a]	3
30		
"C"	0.7116	4
MR (Obs.)	150.373	4
MR (Calc.) (nD-d/2)	149.826	5
Dielectric		
A | 318 to	7.73253	5
B | 537 °C	2945.0	5
C	153.	5
A* | 318 to	2.64644	5
B* | 527 °C	2855.2	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	507.03	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0715	5
t_e	0.0345	5
30 mm	1.0895	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	45.26	5
BP	36.38	5
t_e	33.00	5
t_e (d, e)	32.92	5
ΔHv/T_e	19.83	5
d | 318 to	65.97	5
e | 527 °C	0.0652	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	0.8968	5
t_e	0.8590	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.		

		Ref.
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	29.04	5
γ 30	28.09	5
40	27.16	5
Parachor [P] 20°C		
30		
40		
Sugd.	1290.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 38

NAME	1-Fluorotritriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{31}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{33}H_{67}F$	Molecular Weight 482.866

		Ref.
F.P. °C	77.	3
F.P. 100%		
B.P. °C		
760 mm	461.	3
100	367.	5
30	324.	5
10	290.	5
1	233.	5
Pressure mm 25°C		
t_e	1879.6	5
Density g/ml 20°C	0.8435[a]	3
d_4^t 25	0.8401[a]	3
30		
a	0.8571	5
b	-0.0_3680	5
Ref. Index		
n_D 20°C	1.4540[a]	3
25	1.4521[a]	3
30		
"C"	0.7124	4
MR (Obs.)	155.023	4
MR (Calc.) (nD-d/2)	154.444	5
Dielectric		
A | 324 to	7.73238	5
B | 545 °C	2969.2	5
C	151.	5
A* | 324 to	2.65807	5
B* | 535 °C	2880.2	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	514.98	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0721	5
t_e	0.0345	5
30 mm	1.0985	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	44.45	5
BP	35.65	5
t_e	32.28	5
t_e (d, e)	32.20	5
$\Delta Hv/T_e$	19.78	5
d | 324 to	65.19	5
e | 535 °C	0.0641	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	0.8956	5
t_e	0.8572	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension dynes/cm. 20°C	29.12	5
γ 30	28.19	5
40	27.29	5
Parachor [P] 20°C		
30		
40		
Sugd.	1329.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 39

NAME	1-Fluorotetratriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{32}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{69}F$	Molecular Weight 496.892

		Ref.
F.P. °C	76.	3
F.P. 100%		
B.P. °C 760 mm	468.	3
100	373.	5
30	330.	5
10	296.	5
1	238.	5
Pressure mm 25°C t_e	1895.3	5
Density g/ml 20°C	0.8439[a]	3
d_4^t 25	0.8404[a]	3
30		
a	0.8579	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4547[a]	3
25	1.4528[a]	3
30		
"C"	0.7131	4
MR (Obs.)	159.663	4
MR (Calc.) (nD-d/2)	159.062	5
Dielectric		
A | 330 to	7.74039	5
B | 553 °C	3003.2	5
C	150.	5
A* | 330 to	2.67656	5
B* | 543 °C	2914.5	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	522.96	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0727	5
t_e	0.0346	5
30 mm	1.1083	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	43.66	5
BP	34.96	5
t_e	31.55	5
t_e (d, e)	31.51	5
$\Delta Hv/T_e$	19.70	5
d | 330 to	64.35	5
e | 543 °C	0.0628	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	0.8946	5
t_e	0.8557	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.		

		Ref.
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	29.21	5
γ 30	28.25	5
40	27.32	5
Parachor [P] 20°C		
30		
40		
Sugd.	1368.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 40

NAME	1-Fluoropentatriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{35}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{35}H_{71}F$	Molecular Weight 510.918

		Ref.
F.P. °C	81.	3
F.P. 100%		
B.P. °C 760 mm	475.	3
100	379.	5
30	335.	5
10	301.	5
1	243.	5
Pressure mm 25°C t_e	1910.9	5
Density g/ml 20°C	0.8442[a]	3
d_4^t 25	0.8407[a]	3
30		
a	0.8582	5
b	-0.03700	5
Ref. Index n_D 20°C	1.4553[a]	3
25	1.4534[a]	3
30		
"C"	0.7137	4
MR (Obs.)	164.298	4
MR (Calc.) (nD-d/2)	163.680	5
Dielectric		
A | 335 to	7.74827	5
B | 561 °C	3037.3	5
C	149.	5
A* | 335 to	2.69461	5
B* | 551 °C	2948.7	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	530.94	5

			Ref.
dt/dP °C/mm			
25°C			
BP		0.0733	5
t_e		0.0346	5
30 mm		1.1180	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		42.91	5
BP		34.32	5
t_e		30.90	5
t_e (d, e)		30.87	5
$\Delta Hv/T_e$		19.63	5
d | 335 to	e | 551 °C	63.53	5
		0.0615	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		0.8937	5
t_e		0.8542	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.			

		Ref.
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	29.28	5
γ 30	28.32	5
40	27.38	5
Parachor [P] 20°C		
30		
40		
Sugd.	1407.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 41

NAME	1-Fluorohexatriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{34}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{73}F$	Molecular Weight 524.944

		Ref.
F.P. °C	80.	3
F.P. 100%		
B.P. °C		
760 mm	482.	3
100	386.	5
30	341.	5
10	307.	5
1	248.	5
Pressure mm 25°C		
t_e	1925.7	5
Density g/ml 20°C	0.8445[a]	3
d_4^{t} 25	0.8410[a]	3
30		
a	0.8585	5
b	-0.03700	5
Ref. Index n_D 20°C	1.4559[a]	3
25	1.4540[a]	3
30		
"C"	0.7144	4
MR (Obs.)	168.941	4
MR (Calc.) (nD-d/2)	168.298	5
Dielectric		
A 341 to	7.75201	5
B 569 °C	3066.4	5
C	148.	5
A* 341 to	2.70899	5
B* 559 °C	2978.6	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	538.90	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0738	5
t_e	0.0347	5
30 mm	1.1274	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	42.21	5
BP	33.69	5
t_e	30.26	5
t_e (d, e)	30.25	5
ΔHv/T_e	19.56	5
d 341 to	62.86	5
e 559 °C	0.0605	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	0.8925	5
t_e	0.8523	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.		

		Ref.
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	29.35	5
30	28.39	5
40	27.45	5
Parachor [P] 20°C		
30		
40		
Sugd.	1446.8	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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

NAME	1-Fluoroheptatriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{35}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{75}F$	Molecular Weight 538.970

		Ref.
F.P. °C	84.	3
F.P. 100%		
B.P. °C 760 mm	489.	3
100	392.	5
30	347.	5
10	312.	5
1	253.	5
Pressure mm 25°C t_e	1941.1	5
Density g/ml 20°C	0.8447[a]	3
d_4^{t} 25	0.8413[a]	3
30		
a	0.8583	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4564[a]	3
25	1.4545[a]	3
30		
"C"	0.7149	4
MR (Obs.)	173.578	4
MR (Calc.) (nD-d/2)	172.916	5
Dielectric		
A 347 to	7.75569	5
B 577 °C	3095.5	5
C	146.	5
A* 347 to	2.72250	5
B* 567 °C	3008.1	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	546.88	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0744	5
t_e		0.0347	5
30 mm		1.1368	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		41.56	5
BP		33.12	5
t_e		29.69	5
t_e (d, e)		29.68	5
$\Delta Hv/T_e$		19.51	5
d 347 to		62.18	5
e 567 °C		0.0594	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		0.8915	5
t_e		0.8508	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.			

			Ref.
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		29.40	5
γ 30		28.47	5
40		27.55	5
Parachor [P] 20°C			
30			
40			
Sugd.		1485.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 43

NAME	1-Fluorooctatriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{36}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{77}F$	Molecular Weight 552.996

		Ref.
F.P. °C	82.	3
F.P. 100%		
B.P. °C 760 mm	495.	3
100	397.	5
30	352.	5
10	317.	5
1	257.	5
Pressure mm 25°C. t_e	1954.0	5
Density g/ml 20°C	0.8450[a]	3
d_4^t 25	0.8415[a]	3
30		
a	0.8590	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4569[a]	3
25	1.4550[a]	3
30		
"C"	0.7154	4
MR (Obs.)	178.200	4
MR (Calc.) (nD-d/2)	177.534	5
Dielectric		
A | 352 to	7.76105	5
B | 584 °C	3123.4	5
C	145.	5
A* | 352 to	2.73786	5
B* | 574 °C	3036.4	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	553.71	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0749	5
t_e		0.0347	5
30 mm		1.1450	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		40.86	5
BP		32.51	5
t_e		29.04	5
t_e (d, e)		29.07	5
$\Delta Hv/T_e$		19.42	5
d | 352 to		61.44	5
e | 574 °C		0.0584	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		0.8905	5
t_e		0.8493	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.			

		Ref.
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	29.47	5
γ 30	28.51	5
40	27.57	5
Parachor [P] 20°C		
30		
40		
Sugd.	1524.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 44

NAME	1-Fluorononatriacontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{37}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{39}H_{79}F$	Molecular Weight 567.022

		Ref.
F.P. °C	86.	3
F.P. 100%		
B.P. °C 760 mm	502.	3
100	403.	5
30	358.	5
10	322.	5
1	262.	5
Pressure mm 25°C t_e	1969.4	5
Density g/ml 20°C	0.8452[a]	3
d_4^t 25	0.8418[a]	3
30		
a	0.8588	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4574[a]	3
25	1.4555[a]	3
30		
"C"	0.7160	4
MR (Obs.)	182.849	4
MR (Calc.) (nD-d/2)	182.152	5
Dielectric		
A 358 to	7.76853	5
B 592 °C	3157.5	5
C	144.	5
A* 358 to	2.75446	5
B* 582 °C	3070.8	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	561.70	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0755	5
t_e	0.0348	5
30 mm	1.1548	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.25	5
BP	31.99	5
t_e	28.54	5
t_e (d, e)	28.57	5
$\Delta Hv/T_e$	19.38	5
d 358 to	60.77	5
e 582 °C	0.0573	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	0.8896	5
t_e	0.8478	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f to		
g °		
h		
f' to		
g' °		
h'		
m to		
n °K		
o		
m' to		
n' °K		
o'		
Surface tension dynes/cm. 20°C	29.52	5
γ 30	28.58	5
40	27.67	5
Parachor [P] 20°C		
30		
40		
Sugd.	1563.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 45

NAME	1-Fluorotetracontane	STRUCTURAL FORMULA
		$CH_2F(CH_2)_{38}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{81}F$	Molecular Weight 581.048

		Ref.
F.P. °C	85.	3
F.P. 100%		
B.P. °C 760 mm	508.	3
100	409.	5
30	363.	5
10	327.	5
1	267.	5
Pressure mm 25°C t_e	1984.3	5
Density g/ml 20°C	0.8455[a]	3
d_4^t 25	0.8420[a]	3
30		
a	0.8595	5
b	-0.03700	5
Ref. Index n_D 20°C	1.4579[a]	3
25	1.4560[a]	3
30		
"C"	0.7165	4
MR (Obs.)	187.482	4
MR (Calc.) (nD-d/2)	186.770	5
Dielectric		
A | 363 to	7.77763	5
B | 599 °C	3190.3	5
C	144.	5
A* | 363 to	2.77125	5
B* | 589 °C	3103.1	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	568.61	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0760	5
t_e	0.0348	5
30 mm	1.1634	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.61	5
BP	31.46	5
t_e	27.97	5
t_e (d, e)	28.06	5
ΔHv/T_e	19.31	5
d | 363 to	59.98	5
e | 589 °C	0.0561	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	0.8894	5
t_e	0.8473	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.		

		Ref.
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	29.59	5
σ 30	28.62	5
40	27.68	5
Parachor [P] 20°C		
30		
40		
Sugd.	1602.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 46

NAME	Difluoromethane					STRUCTURAL FORMULA		
						CH_2F_2		
Mole % Pur.	Ref. 3	Molecular Formula CH_2F_2		Molecular Weight 52.026				
		Ref.			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	30 mm	0.3897	5	g' | _ _ °K		
30	-102.5	5	ΔHm cal/g			h'		
10	-114.3	5				m | | to		
1	-133.8	5	ΔHv cal/g			n | _ _ °K		
Pressure			25°C	69.41	5	o		
mm 25°C	10215.1	5	30 mm	95.10	5	m' | | to		
t_e	587.2	5	BP	85.48	5	n' | _ _ °K		
Density			t_e	86.51	5	o'		
g/ml 20°C	0.909[a]	3	t_e (d, e)	86.49	5	Surface tension		
d_4^t 25	0.896[a]	3	ΔHv/T_e	20.82	5	dynes/cm. 20°C	5.46	5
30			d | -103 to	75.73	5	γ 30	4.67	5
a	0.9760	5	e | -37 °C	0.1890	5	40	3.92	5
b	-0.00188	5	d' | to			Parachor [P]		
Ref. Index			e' | °C			20°C		
n_D 20°C	1.19[a]	3	d_c g/ml			30		
25	1.19[a]	3	v_c ml/g			40		
30			t_c °C			Sugd.	90.4	5
"C"	0.2879	4	P_c mm			Exp. L. 1. %/wt.		
MR (Obs.)	6.972	4	PV/RT			u.		
MR (Calc.) (nD-d/2)	6.826	5	25°C	0.8681	5	Dispersion		
Dielectric			30 mm	1.0000	5	Flash Point °C		
A | -103 to	6.9180	3	BP	0.9709	5	Fire Point		
B | -27 °C	797.0	3	t_e	0.9760	5	M Spec.		
C	249.0	3	t_c			Ultra V.		
A* | -103 to	1.2184	5	ΔHc kcal/m			X-Ray Dif.		
B* | -37 °C	740.0	5	ΔHf			Infrared		
K			ΔFf			Solubility in [+]		
c			Viscosity centistokes			Acetone		
t_k | to			η °C			Carbon tet.		
t_x | °C						Benzene		
A' | to						Ether		
B' | °C			B^v | to			n-Heptane		
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_v vap.					
Cryos. A° consts. B°								
t_e °C	-56.92	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 47

NAME	1,1-Difluoroethane	STRUCTURAL FORMULA
		CHF_2CH_3

Mole % Pur.	Ref.	Molecular Formula $C_2H_4F_2$	Molecular Weight 66.052
	3		

		Ref.
F. P. °C	-117.	3
F. P. 100%		
B. P. °C		
760 mm	-24.7	3
100	-63.1	5
30	-80.1	5
10	-93.1	5
1	-114.6	5
Pressure mm 25°C	4437.1	5
t_e	662.3	5
Density g/ml 20°C	0.95[a]	3
d_4^{t} 25	0.95[a]	3
30		
a	0.9562	5
b	$0.0_3$446	5
Ref. Index n_D 20°C	1.26[a]	3
25	1.26[a]	3
30		
"C"	0.3726	4
MR (Obs.)	11.388	4
MR (Calc.) (nD-d/2)	11.444	5
Dielectric		
A | -80 to	7.030	3
B | 2 °C	910.0	3
C	244.0	3
A* | -80 to	1.393	5
B* | -8 °C	848.4	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	-27.79	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0078	5
BP	0.0302	5
t_e	0.0337	5
30 mm	0.4272	5
ΔHm cal/g		
ΔHv cal/g		
25°C	69.05	5
30 mm	87.45	5
BP	78.03	5
t_e	78.52	5
t_e (d, e)	78.55	
ΔHv/T_e	21.14	5
d | -80 to	73.83	5
e | -8 °C	0.1700	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9083	5
30 mm	1.0000	5
BP	0.9679	5
t_e	0.9702	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.		

			Ref.
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		11.25	5
σ 30		11.02	5
40		10.70	5
Parachor [P]			
20°C			
30			
40			
Sugd.		129.4	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 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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 48

NAME	1, 1-Difluoropropane	STRUCTURAL FORMULA
		$CHF_2CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6F_2$	Molecular Weight 80.078

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	7.5	3
100	-35.0	5
30	-54.1	5
10	-68.6	5
1	-92.7	5
Pressure mm 25°C	1410.2	5
t_e	752.0	5
Density g/ml 20°C	0.94[a]	3
d_4^{t} 25	0.94[a]	3
30		
a	0.9416	5
b	0.0_3193	5
Ref. Index n_D 20°C	1.30[a]	3
25	1.30[a]	3
30		
"C"	0.4318	4
MR (Obs.)	15.930	4
MR (Calc.) (nD-d/2)	16.062	5
Dielectric		
A -54 to	7.039	3
B 38 °C	1023.	3
C	238.	3
A* -54 to	1.444	5
B* 28 °C	956.	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	7.75	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0208	5
BP	0.0338	5
t_e	0.0341	5
30 mm	0.4787	5
ΔHm cal/g		
ΔHv cal/g		
25°C	70.47	5
30 mm	82.92	5
BP	74.44	5
t_e	73.21	5
t_e (d, e)	74.40	5
$\Delta Hv/T_e$	20.87	5
d -54 to	75.47	5
e 28 °C	0.1377	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9445	5
30 mm	1.0000	5
BP	0.9823	5
t_e	0.9623	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.		

		Ref.
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	14.92	5
γ 30	14.78	5
40	14.57	5
Parachor [P]		
20°C		
30		
40		
Sugd.	168.4	5
Exp. L. 1. %/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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE I. FLUOROALKANES

No. 49

NAME	1, 1-Difluorobutane	STRUCTURAL FORMULA
		$CHF_2(CH_2)_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_8F_2$	Molecular Weight 94.104

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	41.	3
100	-6.	5
30	-27.	5
10	-43.	5
1	-70.	5
Pressure		
mm 25°C	416.4	5
t_e	841.9	5
Density		
g/ml 20°C	0.92	3
d_4^t 25	0.92	3
30		
a	0.9203	5
b	0.0_475	5
Ref. Index		
n_D 20°C	1.32	3
25	1.32	3
30		
"C"	0.4692	4
MR (Obs.)	20.291	4
MR (Calc.) (nD-d/2)	20.680	5
Dielectric		
A | -27 to	7.057	3
B | 74 °C	1136.	3
C	231.	3
A* | -27 to	1.497	5
B* | 64 °C	1065.	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	43.95	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0602	5
BP	0.0372	5
t_e	0.0343	5
30 mm	0.5282	5
ΔHm cal/g		
ΔHv cal/g		
25°C	72.60	5
30 mm	80.46	5
BP	70.27	5
t_e	69.80	5
t_e (d, e)	69.83	5
$\Delta Hv/T_e$	20.71	5
d | -27 to	76.38	5
e | 64 °C	0.1490	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9713	5
30 mm	1.0000	5
BP	0.9577	5
t_e	0.9543	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.		

		Ref.
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	16.77	5
σ 30	16.71	5
40	16.61	5
Parachor [P]		
20°C		
30		
40		
Sugd.	207.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 50

NAME	1, 1-Difluoropentane	STRUCTURAL FORMULA
		$CHF_2(CH_2)_3CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}F_2$	Molecular Weight 108.130

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	69.	3
100	18.	5
30	-5.	5
10	-22.	5
1	-51.	5
Pressure		
mm 25°C	138.3	5
t_e	917.4	5
Density		
g/ml 20°C	0.90	3
d_4^t 25	0.90	3
30		
a	0.9000	5
b	0.0_432	5
Ref. Index		
n_D 20°C	1.34	3
25	1.34	3
30		
"C"	0.5080	4
MR (Obs.)	25.184	4
MR (Calc.)	25.298	5
(nD-d/2)		
Dielectric		
A | -5 to	7.101	3
B | 105 °C	1245.	3
C	226.	3
A* | -5 to	1.573	5
B* | 95 °C	1170.	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	74.84	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1589	5
BP	0.0399	5
t_e	0.0344	5
30 mm	0.5698	5
ΔHm cal/g		
ΔHv cal/g		
25°C	73.32	5
30 mm	77.50	5
BP	67.25	5
t_e	66.44	5
t_e (d, e)	66.44	5
$\Delta Hv/T_e$	20.64	5
d | -5 to	76.86	5
e | 95 °C	0.1393	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9872	5
30 mm	1.0000	5
BP	0.9532	5
t_e	0.9476	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.		

		Ref.
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	17.64	5
γ 30	17.61	5
40	17.56	5
Parachor [P]		
20°C		
30		
40		
Sugd.	246.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 51

NAME	1, 1-Difluorohexane	STRUCTURAL FORMULA
		$CHF_2(CH_2)_4CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{12}F_2$	Molecular Weight 122.156

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	95.	3
100	41.	5
30	17.	5
10	-1.	5
1	-32.	5
Pressure		
mm 25°C	45.92	5
t_e	987.3	5
Density		
g/ml 20°C	0.90	3
d_4^t 25	0.90	3
30		
a	0.9000	5
b	0.0_413	5
Ref. Index		
n_D 20°C	1.36	3
25	1.36	3
30		
"C"	0.5364	4
MR (Obs.)	29.955	4
MR (Calc.)	29.916	5
(nD-d/2)		
Dielectric		
A | 17 to	7.162	3
B | 134 °C	1353.	3
C	221.	3
A* | 17 to	1.664	5
B* | 124 °C	1275.	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	103.65	5

		Ref.
dt/dP		
°C/mm		
25°C	0.4230	5
BP	0.0422	5
t_e	0.0343	5
30 mm	0.6061	5
ΔHm cal/g		
ΔHv cal/g		
25°C	74.22	5
30 mm	75.31	5
BP	65.05	5
t_e	63.90	5
t_e (d, e)	63.92	5
ΔHv/T_e	20.72	5
d | 17 to	77.54	5
e | 124 °C	0.1315	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9973	5
30 mm	1.0000	5
BP	0.9504	5
t_e	0.9417	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.		

		Ref.
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	19.53	5
γ 30	19.51	5
40	19.49	5
Parachor [P]		
20°C		
30		
40		
Sugd.	285.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 52

NAME	1,1-Difluoroheptane		STRUCTURAL FORMULA
			$CHF_2(CH_2)_5CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{14}F_2$	Molecular Weight 136.182

		Ref.
F.P. °C	-82.	3
F.P. 100%		
B.P. °C		
760 mm	119.7	3
100	63.1	5
30	37.7	5
10	18.3	5
1	-14.2	5
Pressure mm 25°C	14.94	5
t_e	1052.5	5
Density g/ml 20°C	0.8959	3
d_4^t 25	0.8910	3
30		
a	0.9155	5
b	-0.0_3975	5
Ref. Index		
n_D 20°C	1.3710	3
25	1.3690	3
30		
"C"	0.5544	4
MR (Obs.)	34.465	4
MR (Calc.) (nD-d/2)	34.534	5
Dielectric		
A | 38 to	7.224	3
B |161 °C	1458.	3
C	216.	3
A* | 38 to	1.753	5
B* |151 °C	1378.	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	131.00	5

		Ref.
dt/dP °C/mm		
25°C	1.158	5
BP	0.0442	5
t_e	0.0341	5
30 mm	0.6391	5
ΔHm cal/g		
ΔHv cal/g		
25°C	75.21	5
30 mm	73.53	5
BP	63.09	5
t_e	61.72	5
t_e (d, e)	61.66	5
$\Delta Hv/T_e$	20.80	5
d | 38 to	78.33	5
e | 151 °C	0.1273	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0032	5
30 mm	1.0000	5
BP	0.9458	5
t_e	0.9360	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.		

			Ref.
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		20.74	5
γ 30		19.84	5
40		18.96	5
Parachor [P]			
20°C			
30			
40			
Sugd.		324.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE I. FLUOROALKANES

No. 53

NAME	1, 1-Difluorooctane	STRUCTURAL FORMULA
		$CHF_2(CH_2)_6CH_3$

Mole % Pur. | Ref. 3 | Molecular Formula $C_8H_{16}F_2$ | Molecular Weight 150.208

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	142.	3
100	83.	5
30	56.	5
10	36.	5
1	2.	5
Pressure mm 25°C	5.09	5
t_e	1111.1	5
Density g/ml 20°C	0.89	3
d_4^t 25	0.89	3
30		
a	0.8900	5
b	0.052	5
Ref. Index n_D 20°C	1.38	3
25	1.38	3
30		
"C"	0.5709	4
MR (Obs.)	39.094	4
MR (Calc.) (nD-d/2)	39.152	5
Dielectric		
A | 56 to	7.285	3
B | 186 °C	1559.	3
C	212.	3
A* | 56 to	1.840	5
B* | 176 °C	1476.	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	155.75	5

		Ref.
dt/dP °C/mm		
25°C	3.073	5
BP	0.0459	5
t_e	0.0339	5
30 mm	0.6691	5
ΔHm cal/g		
ΔHv cal/g		
25°C	75.60	5
30 mm	71.58	5
BP	61.22	5
t_e	59.69	5
t_e (d, e)	59.56	5
$\Delta Hv/T_e$	20.90	5
d | 56 to	78.40	5
e | 176 °C	0.1210	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0060	5
30 mm	1.0000	5
BP	0.9422	5
t_e	0.9311	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.		

			Ref.
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		21.49	5
σ 30		21.49	5
40		21.48	5
Parachor [P]			
20°C			
30			
40			
Sugd.		363.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 54

NAME	1, 1-Difluorononane	STRUCTURAL FORMULA
		$CHF_2(CH_2)_7CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{18}F_2$	Molecular Weight 164.234

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	163.	3
100	102.	5
30	74.	5
10	53.	5
1	18.	5
Pressure		
mm 25°C	1.72	5
t_e	1165.9	5
Density		
g/ml 20°C	0.89	3
d_4^t 25	0.89	3
30		
a	0.8900	5
b	0.0_51	5
Ref. Index		
n_D 20°C	1.39	3
25	1.39	3
30		
"C"	0.5851	4
MR (Obs.)	43.743	4
MR (Calc.) (nD-d/2)	43.770	5
Dielectric		
A | 74 to	7.347	3
B | 209 °C	1657.	3
C	208.	3
A* | 74 to	1.926	5
B* | 199 °C	1572.	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	179.12	5

		Ref.
dt/dP		
°C/mm		
25°C	8.275	5
BP	0.0475	5
t_e	0.0337	5
30 mm	0.6962	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.09	5
30 mm	69.92	5
BP	59.66	5
t_e	57.90	5
t_e (d, e)	57.79	5
$\Delta Hv/T_e$	21.03	5
d | 74 to	78.51	5
e | 199 °C	0.1157	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0066	5
30 mm	1.0000	5
BP	0.9402	5
t_e	0.9265	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.		

			Ref.
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	22.61	5
γ	30	22.61	5
	40	22.61	5
Parachor [P]			
	20°C		
	30		
	40		
	Sugd.	402.4	5
Exp. L. 1. %/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

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TABLE I. FLUOROALKANES

No. 55

NAME	1, 1-Difluorodecane	STRUCTURAL FORMULA
		$CHF_2(CH_2)_8CH_3$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{10}H_{20}F_2$	178.260

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C 760 mm	183.	3
100	120.	5
30	91.	5
10	69.	5
1	32.	5
Pressure mm 25°C	0.57	5
t_e	1217.7	5
Density g/ml 20°C	0.89	3
d_4^{t} 25	0.89	3
30		
a	0.8900	5
b		
Ref. Index n_D 20°C	1.39	3
25	1.39	3
30		
"C"	0.5851	4
MR (Obs.)	47.479	4
MR (Calc.) (nD-d/2)	48.388	5
Dielectric		
A | 91 to	7.405	3
B | 231 °C	1751.	3
C	204.	3
A* | 91 to	2.007	5
B* | 221 °C	1665.	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	201.37	5

		Ref.
dt/dP		
°C/mm		
25°C	22.67	5
BP	0.0489	5
t_e	0.0335	5
30 mm	0.7214	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.62	5
30 mm	68.44	5
BP	58.24	5
t_e	56.29	5
t_e (d, e)	56.19	5
ΔHv/T_e	21.15	5
d | 91 to	78.61	5
e | 221 °C	0.1113	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0057	5
30 mm	1.0000	5
BP	0.9382	5
t_e	0.9223	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.		

		Ref.
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	23.59	5
σ 30	23.59	5
40	23.58	5
Parachor [P] 20°C		
30		
40		
Sugd.	441.4	5
Exp. L. 1. %/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

No. 56

NAME	2, 2-Difluoropropane	STRUCTURAL FORMULA
		$CH_3CF_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6F_2$	Molecular Weight 80.078

		Ref.
F.P. °C	-104.8	3
F.P. 100%		
B.P. °C		
760 mm	-0.4	3
100	-42.9	5
30	-61.8	5
10	-76.2	5
1	-100.1	5
Pressure mm 25°C	1887.1	5
t_e	729.3	5
Density g/ml 20°C	0.9205[a]	3
d_4^t 25	0.9130[a]	3
30		
a	0.9530	5
b	-0.00125	5
Ref. Index n_D 20°C	1.2904[a]	3
25	1.2880[a]	3
30		
"C"	0.4275	4
MR (Obs.)	15.787	4
MR (Calc.) (nD-d/2)	16.062	5
Dielectric		
A | -62 to	7.09487	5
B | 29 °C	1035.0	5
C	246.	5
A* | -62 to	1.49970	5
B* | 19 °C	965.2	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	-1.44	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0163	5
BP	0.0333	5
t_e	0.0344	5
30 mm	0.4747	5
ΔHm cal/g		
ΔHv cal/g		
25°C	66.46	5
30 mm	77.84	5
BP	70.01	5
t_e	70.16	5
t_e (d, e)	70.15	5
$\Delta Hv/T_e$	20.68	5
d | -62 to	69.96	5
e | 19 °C	0.1276	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9373	5
30 mm	1.0000	5
BP	0.9637	5
t_e	0.9647	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.		

			Ref.
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		13.59	5
γ 30		12.57	5
40		11.53	5
Parachor [P]			
20°C			
30			
40			
Sugd.		168.4	5
Exp. L.1.%/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 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

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TABLE I. FLUOROALKANES

No. 57

NAME	2, 2-Difluorobutane	STRUCTURAL FORMULA
		$CH_3CF_2CH_2CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_4H_8F_2$ — Molecular Weight 94.104

		Ref.
F. P. °C	-117.5	3
F. P. 100%		
B. P. °C 760 mm	30.9	3
100	-14.9	5
30	-35.3	5
10	-50.8	5
1	-76.6	5
Pressure mm 25°C	609.5	5
t_e	814.6	5
Density g/ml 20°C	0.9016	3
d_4^{t} 25 30	0.8956	3
a	0.9261	5
b	-0.00109	5
Ref. Index n_D 20°C	1.3138	3
25	1.3111	3
30		
"C"	0.4699	4
MR (Obs.)	20.339	4
MR (Calc.) (nD-d/2)	20.680	5
Dielectric		
A / B / C — -35 to 63 °C	7.07337 / 1106.4 / 233.	5 / 5 / 5
A* / B* / K — -35 to 53 °C	1.52354 / 1036.8	5 / 5
c		
t_k / t_x — to °C		
A' / B' / C' — to °C		
A'* / B'* — to °C		
Ac / Bc / Cc — t_c °C		
Cryos. A° consts. B°		
t_e °C	32.81	5

		Ref.
dt/dP °C/mm		
25°C	0.0429	5
BP	0.0360	5
t_e	0.0340	5
30 mm	0.5114	5
ΔHm cal/g		
ΔHv cal/g		
25°C	69.03	5
30 mm	77.85	5
BP	68.17	5
t_e	67.89	5
t_e (d, e)	67.89	5
ΔHv/T_e	20.88	5
d / e — -35 to 53 °C	72.69 / 0.1463	5 / 5
d' / e' — to °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9643	5
30 mm	1.0000	5
BP	0.9588	5
t_e	0.9570	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B_v / A_v — to °C		
(B_v') / (A_v') — to °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
f / g / h — to °K			
f' / g' / h' — to °K			
m / n / o — to °K			
m' / n' / o' — to °K			
Surface tension dynes/cm. 20°C		15.41	5
σ 30		14.52	5
40		13.63	5
Parachor [P] 20°C			
30			
40			
Sugd.		207.4	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

No. 58

NAME	2, 2-Difluoropentane	STRUCTURAL FORMULA $CH_3CF_2(CH_2)_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}F_2$	Molecular Weight 108.130

		Ref.
F.P. °C	-98.1	3
F.P. 100%		
B.P. °C		
760 mm	59.7	3
100	10.6	5
30	-11.3	5
10	-28.1	5
1	-56.0	5
Pressure		
mm 25°C	196.5	5
t_e	893.0	5
Density		
g/ml 20°C	0.8932	3
d_4^t 25	0.8877	3
30		
a	0.9152	5
b	-0.00106	5
Ref. Index		
n_D 20°C	1.3351	3
25	1.3331	3
30		
"C"	0.5049	4
MR (Obs.)	25.044	4
MR (Calc.) (nD-d/2)	25.298	5
Dielectric		
A -11 to	7.16426	5
B 94 °C	1232.4	5
C	228.	5
A* -11 to	1.64406	5
B* 84 °C	1158.4	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	64.48	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1148	5
BP	0.0384	5
t_e	0.0338	5
30 mm	0.5516	5
ΔHm cal/g		
ΔHv cal/g		
25°C	71.10	5
30 mm	76.13	5
BP	66.33	5
t_e	65.68	5
t_e (d, e)	65.68	5
$\Delta Hv/T_e$	21.04	5
d -11 to	74.57	5
e 84 °C	0.1379	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9830	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9506	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.		

			Ref.
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	17.09	5
γ	30	16.22	5
	40	15.36	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	246.4	5
Exp. L. 1. %/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

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TABLE I. FLUOROALKANES

No. 59

NAME	3,3-Difluoropentane	STRUCTURAL FORMULA
		$CH_3CH_2CF_2CH_2CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}F_2$ — Molecular Weight 108.130

		Ref.
F.P. °C	-94.0	3
F.P. 100%		
B.P. °C 760 mm	60.3	3
100	11.2	5
30	-10.8	5
10	-27.6	5
1	-55.6	5
Pressure mm 25°C	191.7	5
t_e	894.5	5
Density g/ml 20°C	0.9023	3
d_4^{t} 25 30	0.8968	3
a	0.9243	5
b	-0.00106	5
Ref. Index n_D 20°C	1.3380	3
25	1.3360	3
30		
"C"	0.5039	4
MR (Obs.)	24.986	4
MR (Calc.) (nD-d/2)	25.298	5
Dielectric		
A -11 to	7.16765	5
B 95 °C	1235.9	5
C	228.	5
A* -11 to	1.64700	5
B* 85 °C	1161.9	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	65.14	5

		Ref.
dt/dP °C/mm		
25°C	0.1173	5
BP	0.0384	5
t_e	0.0338	5
30 mm	0.5525	5
ΔHm cal/g		
ΔHv cal/g		
25°C	71.33	5
30 mm	76.29	5
BP	66.48	5
t_e	65.82	5
t_e (d, e)	65.81	5
$\Delta Hv/T_e$	21.04	5
d -11 to	74.80	5
e 85 °C	0.1380	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9833	5
30 mm	1.0000	5
BP	0.9548	5
t_e	0.9503	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.		

		Ref.
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	17.80	5
σ 30	16.91	5
40	16.02	5
Parachor [P] 20°C		
30		
40		
Sugd.	246.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 60

NAME	1, 1, 1-Trifluorobutane	STRUCTURAL FORMULA
		$CF_3(CH_2)_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_7F_3$	Molecular Weight 112.096

		Ref.
F.P. °C	-114.8	3
F.P. 100%		
B.P. °C		
760 mm	16.7	3
100	-27.5	5
30	-47.1	5
10	-62.1	5
1	-86.8	5
Pressure		
mm 25°C	1030.1	5
t_e	775.7	5
Density		
g/ml 20°C	1.0144[a]	3
d_4^t 25	1.0077[a]	3
30		
a	1.0426	5
b	-0.00114	5
Ref. Index		
n_D 20°C	1.2921[a]	3
25	1.2901[a]	3
30		
"C"	0.3901	4
MR (Obs.)	20.162	4
MR (Calc.)	20.672	5
(nD-d/2)		
Dielectric		
A | -47 to	7.03302	5
B | 47 °C	1049.3	5
C	236.	5
A* | -47 to	1.57486	5
B* | 37 °C	981.5	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	17.24	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0274	5
BP	0.0348	5
t_e	0.0342	5
30 mm	0.4921	5
ΔHm cal/g		
ΔHv cal/g		
25°C	52.89	5
30 mm	61.33	5
BP	53.87	5
t_e	53.81	5
t_e (d, e)	53.81	5
$\Delta Hv/T_e$	20.77	5
d | -47 to	55.82	5
e | 37 °C	0.1167	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9524	5
30 mm	1.0000	5
BP	0.9607	5
t_e	0.9601	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.		

		Ref.
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	14.28	5
γ 30	13.41	5
40	12.52	5
Parachor [P]		
20°C		
30		
40		
Sugd.	216.0	5
Exp. L.1.%/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 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_3Cl
Mole % Pur.	Ref. 3	Molecular Formula CH_3Cl — Molecular Weight 50.491

		Ref.
F. P. °C	-97.73	3
F. P. 100%		
B. P. °C 760 mm	-24.22	3
100	-62.91	5
30	-80.03	5
10	-93.05	5
1	-114.58	5
Pressure mm 25°C	4311.4	5
t_e	663.4	5
Density g/ml 20°C	0.9159[a]	3
d_4^{t} 25	0.9065[a]	3
30		
a	0.9582	5
b	-0.00155	5
Ref. Index n_D 20°C	1.3389[a]	3
25	1.3362[a]	3
30		
"C"	0.4977	4
MR (Obs.)	11.521	4
MR (Calc.) (nD-d/2)	11.685	5
Dielectric		
A | -80 to	6.99445	3
B | 3 °C	902.451	3
C	243.60	3
A* | -80 to	1.24136	5
B* | -7 °C	841.02	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	-27.33	5

		Ref.
dt/dP °C/mm		
25°C	0.0081	5
BP	0.0305	5
t_e	0.0339	5
30 mm	0.4292	5
ΔHm cal/g		
ΔHv cal/g		
25°C	90.23	5
30 mm	113.99	5
BP	101.53	5
t_e	102.25	5
t_e (d, e)	102.23	5
$\Delta Hv/T_e$	21.00	5
d | -80 to	96.13	5
e | -7 °C	0.2232	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT 25°C	0.9083	5
30 mm	1.0000	5
BP	0.9667	5
t_e	0.9699	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.		

			Ref.
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		15.31	5
σ 30		13.85	5
40		12.41	5
Parachor [P] 20°C			
30			
40			
Sugd.		110.4	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 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

No. 2

NAME	Chloroethane	STRUCTURAL FORMULA
		$CH_3(CH_2)Cl$

Mole % Pur.	Ref. 3	Molecular Formula C_2H_5Cl	Molecular Weight 64.517

		Ref.
F.P. °C	-136.4	3
F.P. 100%		
B.P. °C		
760 mm	+12.27	3
100	-32.03	5
30	-51.59	5
10	-66.43	5
1	-90.93	5
Pressure mm 25°C	1198.8	5
t_e	762.8	5
Density g/ml 20°C	0.8978[a]	3
d_4^t 25	0.8909[a]	3
30		
a	0.9265	5
b	-0.00125	4
Ref. Index n_D 20°C	1.3676[a]	3
25	1.3654[a]	3
30		
"C"	0.5484	4
MR (Obs.)	16.160	4
MR (Calc.) (nD-d/2)	16.303	5
Dielectric		
A | -52 to	6.94914	3
B | 42 °C	1012.771	3
C	236.67	3
A* | -52 to	1.25816	5
B* | 32 °C	946.10	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	12.37	5

		Ref.
dt/dP °C/mm		
25°C	0.0245	5
BP	0.0350	5
t_e	0.0349	5
30 mm	0.4896	5
ΔHm cal/g		
ΔHv cal/g		
25°C	87.91	5
30 mm	102.92	5
BP	90.39	5
t_e	90.37	5
t_e (d, e)	90.37	5
$\Delta Hv/T_e$	20.42	5
d | -52 to	92.80	5
e | 32 °C	0.1962	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9473	5
30 mm	1.0000	5
BP	0.9603	5
t_e	0.9602	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		18.37	5
γ 30		17.15	5
40		15.93	5
Parachor [P]			
20°C			
30			
40			
Sugd.		149.5	
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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 3

NAME	1-Chloropropane	STRUCTURAL FORMULA
		$CH_3(CH_2)_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_7Cl	Molecular Weight 78.543

		Ref.
F.P. °C	-122.8	3
F.P. 100%		
B.P. °C		
760 mm	46.60	3
100	-2.84	5
30	-24.64	5
10	-41.18	5
1	-68.45	5
Pressure mm 25°C	345.1	5
t_e	855.8	5
Density g/ml 20°C	0.8909	3
d_4^{t} 25	0.8850	3
30		
a	0.9147	5
b	-0.00113	5
Ref. Index n_D 20°C	1.3879	3
25	1.3858	3
30		
"C"	0.5815	4
MR (Obs.)	20.799	4
MR (Calc.) (nD-d/2)	20.921	5
Dielectric		
A | -25 to	6.93111	3
B | 80 °C	1121.123	3
C	230.20	3
A* | -25 to	1.28887	5
B* | 70 °C	1049.75	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	50.17	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0731	5
BP	0.0391	5
t_e	0.0356	5
30 mm	0.5456	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.66	5
30 mm	95.44	5
BP	82.91	5
t_e	82.30	5
t_e (d, e)	82.28	5
$\Delta Hv/T_e$	19.99	5
d | -25 to	91.11	5
e | 70 °C	0.1759	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9737	5
30 mm	1.0000	5
BP	0.9548	5
t_e	0.9514	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.		

		Ref.
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	20.74	5
γ 30	19.61	5
40	18.49	5
Parachor [P] 20°C		
30		
40		
Sugd.	188.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 4

NAME	1-Chlorobutane		STRUCTURAL FORMULA
			$CH_3(CH_2)_3Cl$
Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Cl	Molecular Weight 92.569

		Ref.
F.P. °C	-123.1	3
F.P. 100%		
B.P. °C 760 mm	78.44	3
100	24.47	5
30	0.67	5
10	-17.39	5
1	-47.18	5
Pressure mm 25°C	102.4	5
t_e	941.3	5
Density g/ml 20°C	0.8862	3
d_4^{t} 25 30	0.8809	3
a	0.9074	5
b	-0.00104	5
Ref. Index n_D 20°C	1.4021	3
25	1.4001	3
30		
"C"	0.6048	4
MR (Obs.)	25.440	4
MR (Calc.) (nD-d/2)	25.539	5
Dielectric		
A / B / C — 1 to 116 °C	6.93790 / 1227.433 / 224.10	3
A* / B* / K / c / t_k / t_x — 1 to 106 °C	1.33677 / 1152.09	5
A' / B' / C' — to °C		
A'* / B'* — to °C		
Ac / Bc / Cc — t_c °C		
Cryos. A° consts. B°		
t_e °C	85.53	5

		Ref.
dt/dP °C/mm		
25°C	0.2143	5
BP	0.0426	5
t_e	0.0360	5
30 mm	0.5959	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.03	5
30 mm	90.03	5
BP	77.50	5
t_e	76.41	5
t_e (d, e)	76.36	5
$\Delta Hv/T_e$	19.72	5
d / e — 1 to 106 °C	90.13 / 0.1610	5
d' / e' — to °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9903	5
30 mm	1.0000	5
BP	0.9497	5
t_e	0.9433	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v / A^v — to °C		
(B^v) / (A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f / g / h — to °			
f' / g' / h' — to °			
m / n / o — to °K			
m' / n' / o' — to °K			
Surface tension dynes/cm. 20°C		22.42	5
γ 30		21.34	5
40		20.29	5
Parachor [P] 20°C			
30			
40			
Sugd.		227.4	5
Exp. L.1.%/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. 5

NAME	1-Chloropentane	STRUCTURAL FORMULA
		$CH_3(CH_2)_4Cl$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_5H_{11}Cl$	106.595

		Ref.
F.P. °C	-99.0	3
F.P. 100%		
B.P. °C 760 mm	107.76	3
100	49.89	5
30	24.33	5
10	4.91	5
1	-27.16	5
Pressure mm 25°C	31.07	5
t_e	1019.5	5
Density g/ml 20°C	0.8818	3
d_4^{t} 25	0.8769	3
30		
a	0.9014	5
b	-0.0_3972	5
Ref. Index n_D 20°C	1.4120	3
25	1.4100	3
30		
"C"	0.6219	4
MR (Obs.)	30.079	4
MR (Calc.) (nD-d/2)	30.157	5
Dielectric		
A | 24to	6.96617	3
B | 148°C	1332.890	3
C	218.50	3
A* | 24to	1.40099	5
B* | 138°C	1254.08	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	118.28	5

		Ref.
dt/dP °C/mm		
25°C	0.6219	5
BP	0.0456	5
t_e	0.0362	5
30 mm	0.6404	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.75	5
30 mm	85.85	5
BP	73.40	5
t_e	71.92	5
t_e (d, e)	71.83	5
$\Delta Hv/T_e$	19.58	5
d | 24 to	89.48	5
e | 138 °C	0.1493	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9998	5
30 mm	1.0000	5
BP	0.9454	5
t_e	0.9361	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. •		
c_p vap. °K		
c_v vap.		

			Ref.
f |	to		
g |	•		
h |			
f' |	to		
g' |	•		
h' |			
m |	to		
n |	°K		
o |			
m' |	to		
n' |	°K		
o' |			
Surface tension dynes/cm.	20°C	23.57	5
γ	30	22.53	5
	40	21.52	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	266.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 6

NAME	1-Chlorohexane	STRUCTURAL FORMULA
		$CH_3(CH_2)_5Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}Cl$	Molecular Weight 120.621

		Ref.
F.P. °C	-94.0	3
F.P. 100%		
B.P. °C		
760 mm	134.50	3
100	73.35	5
30	46.26	5
10	25.65	5
1	-8.44	5
Pressure		
mm 25°C	9.63	5
t_e	1090.0	5
Density		
g/ml 20°C	0.8785	3
d_4^t 25	0.8739	3
30		
a	0.8969	5
b	-0.03917	5
Ref. Index		
n_D 20°C	1.4196	3
25	1.4177	3
30		
"C"	0.6351	4
MR (Obs.)	34.717	4
MR (Calc.) (nD-d/2)	34.775	5
Dielectric		
A | 46 to	7.0115	3
B | 178 °C	1437.05	3
C	213.4	3
A* | 46 to	1.4791	5
B* | 168 °C	1355.37	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	148.21	5

		Ref.
dt/dP		
°C/mm		
25°C	1.784	5
BP	0.0481	5
t_e	0.0363	5
30 mm	0.6792	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.63	5
30 mm	82.47	5
BP	70.12	5
t_e	68.33	5
t_e (d, e)	68.20..	5
$\Delta Hv/T_e$	19.56	5
d | 46 to	88.95	5
e | 168 °C	0.1400	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0043	5
30 mm	1.0000	5
BP	0.9414	5
t_e	0.9298	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. •		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | •			
h			
f' | to			
g' | •			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		24.47	5
30		23.46	5
40		22.47	5
Parachor [P]			
20°C			
30			
40			
Sugd.		305.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 7

NAME	1-Chloroheptane	STRUCTURAL FORMULA
		$CH_3(CH_2)_6Cl$
Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{15}Cl$ — Molecular Weight 134.647

		Ref.
F.P. °C	-69.5	3
F.P. 100%		
B.P. °C 760 mm	159.1	3
100	95.1	5
30	66.7	5
10	45.0	5
1	9.1	5
Pressure mm 25°C	3.03	5
t_e	1154.1	5
Density g/ml 20°C	0.8758	3
d_4^t 25	0.8715	3
30		
a	0.8930	5
b	-0.03859	5
Ref. Index n_D 20°C	1.4256	3
25	1.4237	3
30		
"C"	0.6457	4
MR (Obs.)	39.360	4
MR (Calc.) (nD-d/2)	39.393	5
Dielectric		
A | 67 to	7.0650	3
B | 206 °C	1539.35	3
C	208.8	3
A* | 67 to	1.5628	5
B* | 196 °C	1455.27	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	175.77	5

		Ref.
dt/dP °C/mm		
25°C	5.095	5
BP	0.0502	5
t_e	0.0362	5
30 mm	0.7137	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.54	5
30 mm	79.59	5
BP	67.37	5
t_e	65.33	5
t_e (d, e)	65.16	5
$\Delta Hv/T_e$	19.59	5
d | 67 to	88.41	5
e | 196 °C	0.1322	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0056	5
30 mm	1.0000	5
BP	0.9379	5
t_e	0.9240	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.		

		Ref.
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	25.18	5
σ 30	24.20	5
40	23.25	5
Parachor [P] 20°C		
30		
40		
Sugd.	344.4	5
Exp. L.1.%/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 8

NAME	1-Chlorooctane	STRUCTURAL FORMULA
		$CH_3(CH_2)_7Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{17}Cl$	Molecular Weight 148.673

		Ref.
F.P. °C	-57.8	3
F.P. 100%		
B.P. °C		
760 mm	182.0	3
100	115.6	5
30	85.9	5
10	63.3	5
1	25.7	5
Pressure mm 25°C	0.95	5
t_e	1213.5	5
Density g/ml 20°C	0.8737	3
d_4^{t} 25	0.8695	3
30		
a	0.8905	5
b	-0.0_3840	5
Ref. Index n_D 20°C	1.4305	3
25	1.4286	3
30		
"C"	0.6542	4
MR (Obs.)	44.003	4
MR (Calc.) (nD-d/2)	44.011	5
Dielectric		
A | 86 to	7.1231	3
B | 231 °C	1639.20	3
C	204.2	3
A* | 86 to	1.6485	5
B* | 221 °C	1553.06	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	201.44	5

		Ref.
dt/dP °C/mm		
25°C	14.68	5
BP	0.0520	5
t_e	0.0360	5
30 mm	0.7444	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.60	5
30 mm	77.15	5
BP	65.06	5
t_e	62.81	5
t_e (d, e)	62.62	5
$\Delta Hv/T_e$	19.68	5
d | 86 to	87.97	5
e | 221 °C	0.1259	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0045	5
30 mm	1.0000	5
BP	0.9349	5
t_e	0.9190	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq.		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h |			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension dynes/cm. 20°C		25.77	5
30		24.79	5
40		23.84	5
Parachor [P] 20°C			
30			
40			
Sugd.		383.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 9

NAME	1-Chlorononane	STRUCTURAL FORMULA
		$CH_3(CH_2)_8Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{19}Cl$	Molecular Weight 162.699

		Ref.
F. P. °C	-39.4	3
F. P. 100%		
B. P. °C		
760 mm	203.4	3
100	134.7	5
30	104.0	5
10	80.5	5
1	41.4	5
Pressure		
mm 25°C	0.30	5
t_e	1268.5	5
Density		
g/ml 20°C	0.8720	3
d_4^t 25	0.8679	3
30		
a	0.8884	5
b	-0.03820	5
Ref. Index		
n_D 20°C	1.4345	3
25	1.4327	3
30		
"C"	0.6612	4
MR (Obs.)	48.638	4
MR (Calc.) (nD-d/2)	48.629	5
Dielectric		
A | 104 to	7.1802	3
B | 255 °C	1736.11	3
C	200.4	3
A* | 104 to	1.7313	5
B* | 245 °C	1648.19	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	225.44	5

		Ref.
dt/dP		
°C/mm		
25°C	42.29	5
BP	0.0537	5
t_e	0.0358	5
30 mm	0.7727	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.60	5
30 mm	74.93	5
BP	63.00	5
t_e	60.57	5
t_e (d, e)	60.36	5
$\Delta Hv/T_e$	19.76	5
d | 104 to	87.42	5
e | 245 °C	0.1200	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0020	5
30 mm	1.0000	5
BP	0.9323	5
t_e	0.9144	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.		

		Ref.
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	26.27	5
σ 30	25.29	5
40	24.35	5
Parachor [P]		
20°C		
30		
40		
Sugd.	422.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 10

NAME	1-Chlorodecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_9Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{21}Cl$	Molecular Weight 176.725

		Ref.
F.P. °C	-31.3	3
F.P. 100%		
B.P. °C		
760 mm	223.4	3
100	152.8	3
30	121.1	3
10	96.8	3
1	56.2	3
Pressure		
mm 25°C	0.10	5
t_e	1319.0	5
Density		
g/ml 20°C	0.8705	3
d_4^t 25	0.8666	3
30		
a	0.8861	5
b	-0.0_3780	5
Ref. Index		
n_D 20°C	1.4379	3
25	1.4360	3
30		
"C"	0.6673	4
MR (Obs.)	53.283	4
MR (Calc.) (nD-d/2)	53.247	5
Dielectric		
A | 121 to	7.2372	3
B | 278°C	1829.68	3
C	196.6	3
A* | 121 to	1.8130	5
B* | 268°C	1740.46	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	247.82	5

		Ref.
dt/dP		
°C/mm		
25°C	121.9	5
BP	0.0551	5
t_e	0.0355	5
30 mm	0.7983	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.67	5
30 mm	72.94	5
BP	61.13	5
t_e	58.56	5
t_e (d, e)	58.32	5
$\Delta Hv/T_e$	19.86	5
d | 121 to	86.90	5
e | 268 °C	0.1153	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9989	5
30 mm	1 0000	5
BP	0.9294	5
t_e	0.9100	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		26.68	5
γ 30		25.74	5
40		24.82	5
Parachor [P]			
20°C			
30			
40			
Sugd.		461.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE II. CHLOROALKANES

No. 11

NAME	1-Chloroundecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{10}Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{11}H_{23}Cl$	Molecular Weight 190.751

		Ref.
F.P. °C	-16.9	3
F.P. 100%		
B.P. °C		
760 mm	242.2	3
100	169.8	5
30	137.1	5
10	112.1	5
1	70.3	5
Pressure		
mm 25°C	0.03	5
t_e	1366.0	5
Density		
g/ml 20°C	0.8693	3
d_4^{t} 25	0.8654	3
30		
a	0.8849	5
b	-0.0_3780	5
Ref. Index		
n_D 20°C	1.4408	3
25	1.4389	3
30		
"C"	0.6724	4
MR (Obs.)	57.922	4
MR (Calc.) (nD-d/2)	57.865	5
Dielectric		
A | 137 to	7.2917	3
B | 299 °C	1919.62	3
C	193.0	3
A* | 137 to	1.8908	5
B* | 289 °C	1829.36	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	268.86	5

		Ref.
dt/dP		
°C/mm		
25°C	351.1	5
BP	0.0564	5
t_e	0.0353	5
30 mm	0.8219	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.74	5
30 mm	71.10	5
BP	59.42	5
t_e	56.71	5
t_e (d, e)	56.46	5
$\Delta Hv/T_e$	19.96	5
d | 137 to	86.34	5
e | 289 °C	0.1111	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9954	5
30 mm	1.0000	5
BP	0.9268	5
t_e	0.9058	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.		

		Ref.
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	27.04	5
30	26.09	5
40	25.15	5
Parachor [P]		
20°C		
30		
40		
Sugd.	500.4	5
Exp. 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

No. 12

NAME	1-Chlorododecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{11}Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{12}H_{25}Cl$	Molecular Weight 204.777

		Ref.
F.P. °C	-9.3	3
F.P. 100%		
B.P. °C		
760 mm	259.9	3
100	185.7	5
30	152.1	5
10	126.4	5
1	83.3	5
Pressure		
mm 25°C	0.01	5
t_e	1410.0	5
Density		
g/ml 20°C	0.8682	3
d^t_4 25	0.8644	3
30		
a	0.8834	5
b	-0.03760	5
Ref. Index		
n_D 20°C	1.4433	3
25	1.4414	3
30		
"C"	0.6768	4
MR (Obs.)	62.567	4
MR (Calc.) (nD-d/2)	62.483	5
Dielectric		
A | 152 to	7.3394	3
B | 319 °C	2005.72	3
C	190.0	3
A* | 152 to	1.9602	5
B* | 309 °C	1914.40	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	288.67	5

		Ref.
dt/dP		
°C/mm		
25°C	977.1	5
BP	0.0577	5
t_e	0.0352	5
30 mm	0.8449	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.48	5
30 mm	69.23	5
BP	57.68	5
t_e	54.91	5
t_e (d, e)	54.59	5
$\Delta Hv/T_e$	20.02	5
d | 152 to	85.54	5
e | 309 °C	0.1072	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9918	5
30 mm	1.0000	5
BP	0.9234	5
t_e	0.9020	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		27.35	5
γ 30		26.41	5
40		25.49	5
Parachor [P]			
20°C			
30			
40			
Sugd.		539.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

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.
F.P. °C	+0.7	3
F.P. 100%		
B.P. °C 760 mm	277.	3
100	201.	5
30	167.	5
10	141.	5
1	96.	5
Pressure mm 25°C t_e	1452.2	5
Density g/ml 20°C	0.8673	3
d_4^t 25	0.8636	3
30		
a	0.8821	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4454	3
25	1.4436	3
30		
"C"	0.6805	4
MR (Obs.)	67.197	4
MR (Calc.) (nD-d/2)	67.101	5
Dielectric		
A | 167 to	7.391	3
B | 338 °C	2087.9	3
C	186.	3
A* | 167 to	2.033	5
B* | 328 °C	1996.2	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	307.71	5

		Ref.
dt/dP °C/mm		
25°C	2957.	5
BP	0.0587	5
t_e	0.0349	5
30 mm	0.8642	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.06	5
30 mm	67.86	5
BP	56.34	5
t_e	53.49	5
t_e (d, e)	53.12	5
ΔHv/T_e	20.15	5
d | 167 to	85.37	5
e | 328 °C	0.1048	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9871	5
30 mm	1.0000	5
BP	0.9208	5
t_e	0.8986	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.		

			Ref.
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		27.63	5
σ 30		26.70	5
40		25.79	5
Parachor [P] 20°C			
30			
40			
Sugd.		578.4	5
Exp. L.1.%/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.; Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 14

NAME	1-Chlorotetradecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{13}Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{14}H_{29}Cl$	Molecular Weight 232.829

		Ref.
F.P. °C	4.9	3
F.P. 100%		
B.P. °C		
760 mm	292.	3
100	215.	5
30	180.	5
10	153.	5
1	107.	5
Pressure mm 25°C		
t_e	1488.1	5
Density g/ml 20°C	0.8665	3
d^t_4 25	0.8628	3
30		
a	0.8813	5
b	-0.0_3740	5
Ref. Index		
n_D 20°C	1.4473	3
25	1.4455	3
30		
"C"	0.6839	4
MR (Obs.)	71.835	4
MR (Calc.) (nD-d/2)	71.719	5
Dielectric		
A | 180 to	7.434	3
B | 354 °C	2166.1	3
C	184.	3
A* | 180 to	2.096	5
B* | 344 °C	2073.7	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	324.31	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0597	5
t_e	0.0348	5
30 mm	0.8837	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	65.98	5
BP	54.48	5
t_e	51.78	5
t_e (d, e)	51.18	5
$\Delta Hv/T_e$	20.18	5
d | 180 to	84.36	5
e | 344 °C	0.1023	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	0.9145	5
t_e	0.8952	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h |			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		27.87	5
γ 30		26.93	5
40		26.02	5
Parachor [P]			
20°C			
30			
40			
Sugd.		617.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

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.
F.P. °C	14.7	3
F.P. 100%		
B.P. °C 760 mm	308.	3
100	229.	5
30	194.	5
10	166.	5
1	120.	5
Pressure mm 25°C t_e	1526.8	5
Density g/ml 20°C	0.8658	3
d_4^{t} 25 30	0.8621	3
a	0.8806	5
b	-0.03740	5
Ref. Index n_D 20°C	1.4490	3
25	1.4472	3
30		
"C"	0.6869	4
MR (Obs.)	76.475	4
MR (Calc.) (nD-d/2)	76.337	5
Dielectric		
A | 194 to	7.474	3
B | 372 °C	2240.5	3
C	180.	3
A* | 194 to	2.155	5
B* | 362 °C	2148.2	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	342.23	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0607	5
t_e	0.0346	5
30 mm	0.9019	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	64.80	5
BP	53.38	5
t_e	50.51	5
t_e (d, e)	49.96	5
$\Delta Hv/T_e$	20.26	5
d | 194 to	84.13	5
e | 362 °C	0.0098	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	0.9135	5
t_e	0.8917	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.		

		Ref.
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	28.09	5
γ 30	27.14	5
40	26.22	5
Parachor [P] 20°C		
30		
40		
Sugd.	656.4	5
Exp. L.1.%/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 16

NAME	1-Chlorohexadecane		STRUCTURAL FORMULA
			$CH_3(CH_2)_{15}Cl$
Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{33}Cl$	Molecular Weight 260.881

		Ref.
F.P. °C	17.9	3
F.P. 100%		
B.P. °C 760 mm	322.	3
100	242.	5
30	205.	5
10	177.	5
1	130.	5
Pressure mm 25°C t_e	1560.2	5
Density g/ml 20°C	0.8652	3
d_4^t 25	0.8615	3
30		
a	0.8800	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4505	3
25	1.4487	3
30		
"C"	0.6895	4
MR (Obs.)	81.110	4
MR (Calc.) (nD-d/2)	80.955	5
Dielectric		
A | 205 to	7.506	3
B | 388 °C	2311.4	3
C	178.	3
A* | 205 to	2.206	5
B* | 378 °C	2218.6	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	357.94	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0617	5
t_e	0.0346	5
30 mm	0.9206	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	63.14	5
BP	51.88	5
t_e	48.99	5
t_e (d, e)	48.40	5
$\Delta Hv/T_e$	20.25	5
d | 205 to	82.98	5
e | 378 °C	0.0966	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	0.9106	5
t_e	0.8886	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm.	20°C	28.29	5
γ	30	27.33	5
	40	26.40	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	695.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 17

NAME	1-Chloroheptadecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{16}Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{17}H_{35}Cl$	Molecular Weight 274.907

		Ref.
F.P. °C	26.2	3
F.P. 100%		
B.P. °C 760 mm	335.	3
100	254.	3
30	217.	3
10	189.	3
1	140.	5
Pressure mm 25°C t_e	1592.5	5
Density g/ml 20°C	0.8646[b]	3
d_4^t 25	0.8610[b]	3
30		
a	0.8790	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4519[b]	3
25	1.4500[b]	3
30		
"C"	0.6920	4
MR (Obs.)	85.760	4
MR (Calc.) (nD-d/2)	85.573	5
Dielectric		
A | 217 to	7.543	3
B | 403 °C	2378.8	3
C	175.	3
A* | 217 to	2.260	5
B* | 393 °C	2286.1	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	372.99	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0625	5
t_e	0.0344	5
30 mm	0.9359	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	61.87	5
BP	51.19	5
t_e	47.76	5
t_e (d, e)	47.74	5
$\Delta Hv/T_e$	20.32	5
d | 217 to	81.56	5
e | 393 °C	0.0907	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	0.9187	5
t_e	0.8858	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.		

		Ref.
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	28.46	5
γ 30	27.52	5
40	26.61	5
Parachor [P] 20°C		
30		
40		
Sugd.	734.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 18

NAME	1-Chlorooctadecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{17}Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{37}Cl$	Molecular Weight 288.933

		Ref.
F.P. °C	28.6	3
F.P. 100%		
B.P. °C 760 mm	348.	3
100	265.	3
30	228.	3
10	199.	3
1	150.	5
Pressure mm 25°C t_e	1622.0	5
Density g/ml 20°C	0.8641[b]	3
d_4^t 25	0.8605[b]	3
30		
a	0.8785	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4531[b]	3
25	1.4513[b]	3
30		
"C"	0.6941	4
MR (Obs.)	90.395	4
MR (Calc.) (nD-d/2)	90.191	5
Dielectric		
A | 228 to	7.573	3
B | 417 °C	2443.5	3
C	173.	3
A* | 228 to	2.308	5
B* | 407 °C	2350.7	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	387.06	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0634	5
t_e	0.0344	5
30 mm	0.9519	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	60.43	5
BP	49.46	5
t_e	46.44	5
t_e (d, e)	45.90	5
$\Delta Hv/T_e$	20.32	5
d | 228 to	81.21	5
e | 407 °C	0.0912	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	0.9075	5
t_e	0.8830	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	28.62	5
30	27.68	5
40	26.76	5
Parachor [P] 20°C		
30		
40		
Sugd.	773.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 19

NAME	1-Chlorononadecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{18}Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{19}H_{39}Cl$	Molecular Weight 302.959

		Ref.
F.P. °C	35.7	3
F.P. 100%		
B.P. °C 760 mm	361.	3
100	277.	3
30	239.	3
10	210.	3
1	160.	5
Pressure mm 25°C t_e	1653.0	5
Density g/ml 20°C	0.8636[b]	3
d_4^t 25	0.8601[b]	3
30		
a	0.8776	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4542[b]	3
25	1.4524[b]	3
30		
"C"	0.6961	4
MR (Obs.)	95.037	4
MR (Calc.) (nD-d/2)	94.809	5
Dielectric		
A | 239 to	7.600	3
B | 432 °C	2505.7	3
C	170.	3
A* | 239 to	2.351	5
B* | 422 °C	2413.2	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	401.85	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0643	5
t_e		0.0343	5
30 mm		0.9676	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		59.30	5
BP		48.60	5
t_e		45.34	5
t_e (d, e)		45.01	5
ΔHv/T_e		20.35	5
d | 239 to		80.33	5
e | 422 °C		0.0879	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		0.9097	5
t_e		0.8802	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.			

		Ref.
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	28.76	5
γ 30	27.84	5
40	26.94	5
Parachor [P] 20°C		
30		
40		
Sugd.	812.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 20

NAME	1-Chloroeicosane		STRUCTURAL FORMULA
			$CH_3(CH_2)_{19}Cl$
Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{41}Cl$	Molecular Weight 316.985

		Ref.
F.P. °C	37.6	3
F.P. 100%		
B.P. °C 760 mm	373.	3
100	288.	3
30	249.	3
10	219.	3
1	169.	5
Pressure mm 25°C t_e	1681.4	5
Density g/ml 20°C	0.8632[b]	3
d_4^t 25	0.8597[b]	3
30		
a	0.8772	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4552[b]	3
25	1.4534[b]	3
30		
"C"	0.6979	4
MR (Obs.)	99.672	4
MR (Calc.) (nD-d/2)	99.427	5
Dielectric		
A | 249 to	7.624	3
B | 445 °C	2566.1	3
C	168.	3
A* | 249 to	2.390	5
B* | 435 °C	2473.5	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	415.43	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0652	5
t_e	0.0343	5
30 mm	0.9832	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	58.03	5
BP	47.51	5
t_e	44.17	5
t_e (d, e)	43.90	5
$\Delta Hv/T_e$	20.33	5
d | 249 to	79.26	5
e | 435 °C	0.0851	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	0.9090	5
t_e	0.8777	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm.	20°C	28.90	5
γ	30	27.97	5
	40	27.07	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	851.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 21

NAME	1-Chloroheneicosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{19}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{21}H_{43}Cl$	Molecular Weight 331.011

		Ref.
F.P. °C	44.	3
F.P. 100%		
B.P. °C 760 mm	384.	3
100	288.	5
30	246.	5
10	213.	5
1	159.	5
Pressure mm 25°C t_e	1706.8	5
Density g/ml 20°C	0.8628[a]	3
d_4^t 25	0.8593[a]	3
30		
a	0.8768	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4561[a]	3
25	1.4543[a]	3
30		
"C"	0.6995	4
MR (Obs.)	104.308	4
MR (Calc.) (nD-d/2)	104.045	5
Dielectric		
A | 246 to	7.05589	5
B | 465 °C	2296.3	5
C	166.	5
A* | 246 to	1.83439	5
B* | 455 °C	2201.0	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	434.54	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0753	5
t_e	0.0400	5
30 mm	1.0681	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	50.40	5
BP	40.44	5
t_e	37.20	5
t_e (d, e)	36.81	5
$\Delta Hv/T_e$	17.40	5
d | 246 to	68.07	5
e | 455 °C	0.0719	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	0.9027	5
t_e	0.8668	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.		

		Ref.
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	29.01	5
30	28.08	5
40	27.18	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		

[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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 22

NAME	1-Chlorodocosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{20}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{45}Cl$	Molecular Weight 345.037

		Ref.
F.P. °C	45.	3
F.P. 100%		
B.P. °C 760 mm	395.	3
100	298.	5
30	254.	5
10	221.	5
1	167.	5
Pressure mm 25°C t_e	1732.2	5
Density g/ml 20°C	0.8624[a]	3
d_4^t 25	0.8590[a]	3
30		
a	0.8760	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4570[a]	3
25	1.4551[a]	3
30		
"C"	0.7011	4
MR (Obs.)	108.964	4
MR (Calc.) (nD-d/2)	108.663	5
Dielectric		
A 254 to	7.05866	5
B 477 °C	2335.4	5
C	164.	5
A* 254 to	1.85145	5
B* 467 °C	2240.1	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	447.35	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0765	5
t_e		0.0401	5
30 mm		1.0852	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		49.22	5
BP		39.40	5
t_e		36.14	5
t_e (d, e)		35.75	5
$\Delta Hv/T_e$		17.31	5
d 254 to		66.98	5
e 467 °C		0.0698	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		0.9010	5
t_e		0.8641	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.			

		Ref.
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	29.12	5
γ 30	28.21	5
40	27.33	5
Parachor [P] 20°C		
30		
40		
Sugd.	929.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 23

NAME	1-Chlorotricosane		STRUCTURAL FORMULA
			$CH_3(CH_2)_{21}CH_2Cl$
Mole % Pur.	Ref. 3	Molecular Formula $C_{23}H_{47}Cl$	Molecular Weight 359.063

		Ref.
F.P. °C	51.	3
F.P. 100%		
B.P. °C 760 mm	405.	3
100	306.	5
30	262.	5
10	229.	5
1	174.	5
Pressure mm 25°C t_e	1754.7	5
Density g/ml 20°C	0.8621[a]	3
d_4^t 25	0.8586[a]	3
30		
a	0.8761	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4578[a]	3
25	1.4559[a]	3
30		
"C"	0.7025	4
MR (Obs.)	113.604	4
MR (Calc.) (nD-d/2)	113.281	5
Dielectric		
A 262 to	7.05971	5
B 489 °C	2369.4	5
C	162.	5
A* 262 to	1.86691	5
B* 479 °C	2274.3	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	459.00	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0775	5
t_e	0.0403	5
30 mm	1.1006	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	48.06	5
BP	38.37	5
t_e	35.08	5
t_e (d, e)	34.70	5
$\Delta Hv/T_e$	17.20	5
d 262 to	65.90	5
e 479 °C	0.0680	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	0.8993	5
t_e	0.8614	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.		

			Ref.
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		29.23	5
γ 30		28.29	5
40		27.37	5
Parachor [P] 20°C			
30			
40			
Sugd.		968.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 24

NAME	1-Chlorotetracosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{22}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{49}Cl$	Molecular Weight 373.089

		Ref.
F. P. °C	52.	3
F. P. 100%		
B. P. °C 760 mm	415.	3
100	315.	5
30	270.	5
10	237.	5
1	180.	5
Pressure mm 25°C t_e	1777.7	5
Density g/ml 20°C	0.8618[a]	3
d_4^{t} 25	0.8584[a]	3
30		
a	0.8754	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4585[a]	3
25	1.4566[a]	3
30		
"C"	0.7038	4
MR (Obs.)	118.238	4
MR (Calc.) (nD-d/2)	117.899	5
Dielectric		
A 270 to	7.06072	5
B 501 °C	2403.5	5
C	160.	5
A* 270 to	1.88129	5
B* 491 °C	2308.3	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	470.68	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0786	5
t_e	0.0404	5
30 mm	1.1160	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	46.99	5
BP	37.43	5
t_e	34.13	5
t_e (d, e)	33.74	5
$\Delta Hv/T_e$	17.12	5
d 270 to	64.88	5
e 491 °C	0.0661	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	0.8978	5
t_e	0.8590	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.		

			Ref.
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	29.32	5
γ	30	28.41	5
	40	27.51	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	1007.4	5
Exp. L. 1. %/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE II. CHLOROALKANES

No. 25

NAME	1-Chloropentacosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{23}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{25}H_{51}Cl$	Molecular Weight 387.115

		Ref.
F.P. °C	57.	3
F.P. 100%		
B.P. °C 760 mm	425.	3
100	324.	5
30	278.	5
10	244.	5
1	187.	5
Pressure mm 25°C t_e	1800.6	5
Density g/ml 20°C	0.8615[a]	3
d_4^t 25 30	0.8581[a]	3
a	0.8751	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4592[a]	3
25	1.4573[a]	3
30		
"C"	0.7050	4
MR (Obs.)	122.888	4
MR (Calc.) (nD-d/2)	122.517	5
Dielectric		
A 278 to	7.06172	5
B 512 °C	2437.5	5
C	158.	5
A* 278 to	1.89512	5
B* 502 °C	2342.4	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	482.38	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0797	5
t_e	0.0406	5
30 mm	1.1314	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	46.00	5
BP	36.55	5
t_e	33.23	5
t_e (d, e)	32.85	5
$\Delta Hv/T_e$	17.03	5
d 278 to	63.95	5
e 502 °C	0.0645	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	0.8963	5
t_e	0.8566	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.		

			Ref.
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		29.41	5
γ 30		28.49	5
40		27.59	5
Parachor [P] 20°C			
30			
40			
Sugd.		1046.4	5
Exp. L.1.%/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

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No. 26

NAME	1-Chlorohexacosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{24}CH_2Cl$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{26}H_{53}Cl$	401.141

		Ref.
F.P. °C	58.	3
F.P. 100%		
B.P. °C		
760 mm	434.	3
100	331.	5
30	286.	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
30		
a	0.8753	5
b	-0.0_3700	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.) (nD-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_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	492.89	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0806	5
t_e	0.0407	5
30 mm	1.1460	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	44.97	5
BP	35.67	5
t_e	32.34	5
t_e (d, e)	31.98	5
$\Delta Hv/T_e$	16.93	5
d 286 to	62.86	5
e 513 °C	0.0626	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	0.8949	5
t_e	0.8543	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.		

			Ref.
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		29.50	5
γ 30		28.55	5
40		27.63	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1085.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 27

NAME	1-Chloroheptacosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{25}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{27}H_{55}Cl$	Molecular Weight 415.167

		Ref.
F.P. °C	62.	3
F.P. 100%		
B.P. °C		
760 mm	443.	3
100	339.	5
30	293.	5
10	258.	5
1	199.	5
Pressure mm 25°C		
t_e	1841.4	5
Density g/ml 20°C	0.8610[a]	3
d_4^{t} 25	0.8576[a]	3
30		
a	0.8746	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4604[a]	3
25	1.4585[a]	3
30		
"C"	0.7072	4
MR (Obs.)	132.166	4
MR (Calc.) (nD-d/2)	131.753	5
Dielectric		
A | 293 to	7.06782	5
B | 533 °C	2503.8	5
C	155.	5
A* | 293 to	1.92587	5
B* | 523 °C	2408.7	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	503.44	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0816	5
t_e	0.0408	5
30 mm	1.1597	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	44.05	5
BP	34.87	5
t_e	31.54	5
t_e (d, e)	31.18	5
$\Delta Hv/T_e$	16.86	5
d | 293 to	61.96	5
e | 523 °C	0.0611	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	0.8936	5
t_e	0.8523	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.		

		Ref.
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	29.57	5
σ 30	28.64	5
40	27.74	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1124.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 28

NAME	1-Chlorooctacosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{26}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{57}Cl$	Molecular Weight 429.193

		Ref.
F.P. °C	63.	3
F.P. 100%		
B.P. °C		
760 mm	452.	3
100	347.	5
30	300.	5
10	264.	5
1	205.	5
Pressure mm 25°C		
t_e	1861.3	5
Density g/ml 20°C	0.8608[a]	3
d_4^{t} 25	0.8574[a]	3
30		
a	0.8744	5
b	-0.0_3680	5
Ref. Index		
n_D 20°C	1.4609[a]	3
25	1.4591[a]	3
30		
"C"	0.7081	4
MR (Obs.)	136.791	4
MR (Calc.) (nD-d/2)	136.371	5
Dielectric		
A | 300 to	7.06715	5
B | 544 °C	2532.7	5
C	153.	5
A* | 300 to	1.93737	5
B* | 534 °C	2438.0	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	513.98	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0826	5
t_e	0.0410	5
30 mm	1.1733	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	43.20	5
BP	34.11	5
t_e	30.75	5
t_e (d, e)	30.40	5
$\Delta Hv/T_e$	16.77	5
d | 300 to	61.16	5
e | 534 °C	0.0598	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	0.8921	5
t_e	0.8499	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.		

		Ref.
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	29.64	5
γ 30	28.72	5
40	27.81	5
Parachor [P] 20°C		
30		
40		
Sugd.	1163.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE II. CHLOROALKANES

No. 29

NAME	1-Chlorononacosane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{27}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{29}H_{59}Cl$	Molecular Weight 443.219

		Ref.
F.P. °C	67.	3
F.P. 100%		
B.P. °C 760 mm	460.	3
100	354.	5
30	306.	5
10	270.	5
1	211.	5
Pressure mm 25°C t_e	1879.2	5
Density g/ml 20°C	0.8606[a]	3
d_4^{t} 25 30	0.8572[a]	3
a	0.8742	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4614[a]	3
25	1.4596[a]	3
30		
"C"	0.7090	4
MR (Obs.)	141.426	4
MR (Calc.) (nD-d/2)	140.989	5
Dielectric		
A | 306 to	7.07213	5
B | 553 °C	2565.1	5
C	152.	5
A* | 306 to	1.95381	5
B* | 543 °C	2470.2	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	523.35	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0834	5
t_e	0.0411	5
30 mm	1.1862	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	42.30	5
BP	33.35	5
t_e	30.00	5
t_e (d, e)	29.66	5
$\Delta Hv/T_e$	16.69	5
d | 306 to	60.17	5
e | 543 °C	0.0583	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	0.8909	5
t_e	0.8480	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.		

		Ref.
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	29.71	5
σ 30	28.78	5
40	27.88	5
Parachor [P] 20°C		
30		
40		
Sugd.	1202.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 30

NAME	1-Chlorotriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{28}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{61}Cl$	Molecular Weight 457.245

		Ref.
F.P. °C	67.	3
F.P. 100%		
B.P. °C		
760 mm	468.	3
100	361.	5
30	313.	5
10	277.	5
1	216.	5
Pressure mm 25°C		
t_e	1896.9	5
Density g/ml 20°C	0.8604[a]	3
d_4^t 25	0.8570[a]	3
30		
a	0.8740	5
b	-0.0_3680	5
Ref. Index		
n_D 20°C	1.4619[a]	3
25	1.4600[a]	3
30		
"C"	0.7098	4
MR (Obs.)	146.072	4
MR (Calc.) (nD-d/2)	145.607	5
Dielectric		
A | 313 to	7.06993	5
B | 563 °C	2588.9	5
C	150.	5
A* | 313 to	1.96318	5
B* | 553 °C	2494.4	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	532.74	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0843	5
t_e	0.0412	5
30 mm	1.1981	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	41.50	5
BP	32.64	5
t_e	29.27	5
t_e (d, e)	28.94	5
$\Delta Hv/T_e$	16.61	5
d | 313 to	59.38	5
e | 553 °C	0.0571	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	0.8897	5
t_e	0.8460	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.		

		Ref.
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	29.78	5
γ 30	28.84	5
40	27.94	5
Parachor [P] 20°C		
30		
40		
Sugd.	1241.4	5
Exp. L. 1. %/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. 31

NAME	1-Chlorohentriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{29}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{31}H_{63}Cl$	Molecular Weight 471.271

		Ref.
F.P. °C	71.	3
F.P. 100%		
B.P. °C 760 mm	476.	3
100	368.	5
30	319.	5
10	282.	5
1	222.	5
Pressure mm 25°C t_e	1914.6	5
Density g/ml 20°C	0.8602[a]	3
d_4^t 25	0.8568[a]	3
30		
a	0.8738	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4624[a]	3
25	1.4605[a]	3
30		
"C"	0.7107	4
MR (Obs.)	150.728	4
MR (Calc.) (nD-d/2)	150.225	5
Dielectric		
A | 319 to	7.07478	5
B | 572 °C	2621.2	5
C	149.	5
A* | 319 to	1.97876	5
B* | 562 °C	2526.8	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	542.12	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0852	5
t_e	0.0413	5
30 mm	1.2110	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.71	5
BP	31.97	5
t_e	28.60	5
t_e (d, e)	28.28	5
$\Delta Hv/T_e$	16.53	5
d | 319 to	58.52	5
e | 562 °C	0.0558	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	0.8885	5
t_e	0.8441	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.		

		Ref.
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	29.83	5
γ 30	28.90	5
40	27.99	5
Parachor [P] 20°C		
30		
40		
Sugd.	1280.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 32

NAME	1-Chlorodotriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{30}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{65}Cl$	Molecular Weight 485.297

		Ref.
F.P. °C	71.	3
F.P. 100%		
B.P. °C		
760 mm	484.	3
100	374.	5
30	326.	5
10	289.	5
1	227.	5
Pressure mm 25°C		
t_e	1932.1	5
Density g/ml 20°C	0.8600[a]	3
d_4^{t} 25	0.8566[a]	3
30		
a	0.8736	5
b	-0.03680	5
Ref. Index		
n_D 20°C	1.4628[a]	3
25	1.4609[a]	3
30		
"C"	0.7115	4
MR (Obs.)	155.365	4
MR (Calc.) (nD-d/2)	154.843	5
Dielectric		
A | 326 to	7.07261	5
B | 582 °C	2645.0	5
C	147.	5
A* | 326 to	1.98744	5
B* | 572 °C	2551.0	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	551.53	5

			Ref.
dt/dP °C/mm			
25°C			
BP		0.0860	5
t_e		0.0415	5
30 mm		1.2230	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		40.00	5
BP		31.34	5
t_e		27.94	5
t_e (d, e)		27.64	5
ΔHv/T_e		16.44	5
d | 326 to		57.84	5
e | 572 °C		0.0548	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		0.8873	5
t_e		0.8421	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.			

			Ref.
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		29.89	5
γ 30		28.95	5
40		28.04	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1319.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 33

NAME	1-Chlorotritriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{31}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{33}H_{67}Cl$	Molecular Weight 499.323

		Ref.
F.P. °C	75.	3
F.P. 100%		
B.P. °C 760 mm	491.	3
100	380.	5
30	331.	5
10	294.	5
1	232.	5
Pressure mm 25°C t_e	1947.8	5
Density g/ml 20°C	0.8599[a]	3
d_4^t 25	0.8565[a]	3
30		
a	0.8735	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4632[a]	3
25	1.4613[a]	3
30		
"C"	0.7121	4
MR (Obs.)	159.993	4
MR (Calc.) (nD-d/2)	159.461	5
Dielectric		
A | 331 to	7.07589	5
B | 590 °C	2672.3	5
C	146.	5
A* | 331 to	2.00097	5
B* | 580 °C	2578.2	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	559.76	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0868	5
t_e	0.0416	5
30 mm	1.2341	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.25	5
BP	30.70	5
t_e	27.31	5
t_e (d, e)	27.03	5
$\Delta Hv/T_e$	16.37	5
d | 331 to	56.98	5
e | 580 °C	0.0535	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	0.8863	5
t_e	0.8405	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.		

		Ref.
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	29.95	5
γ 30	29.01	5
40	28.10	5
Parachor [P] 20°C		
30		
40		
Sugd.	1358.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 34

NAME	1-Chlorotetratriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{32}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{69}Cl$	Molecular Weight 513.349

		Ref.
F.P. °C	75.	3
F.P. 100%		
B.P. °C		
760 mm	498.	3
100	387.	5
30	337.	5
10	299.	5
1	236.	5
Pressure mm 25°C t_e	1962.4	5
Density g/ml 20°C	0.8597[a]	3
d_4^{t} 25 / 30	0.8563[a]	3
a	0.8733	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4636[a]	3
25	1.4617[a]	3
30		
"C"	0.7129	4
MR (Obs.)	164.648	4
MR (Calc.) (nD-d/2)	164.079	5
Dielectric		
A 337 to	7.07230	5
B 598 °C	2690.9	5
C	144.	5
A* 337 to	2.00826	5
B* 588 °C	2597.6	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	567.98	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0875	5
t_e	0.0417	5
30 mm	1.2443	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.57	5
BP	30.09	5
t_e	26.69	5
t_e (d, e)	26.41	5
$\Delta Hv/T_e$	16.29	5
d 337 to	56.31	5
e 588 °C	0.0526	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	0.8850	5
t_e	0.8386	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.		

		Ref.
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	29.99	5
γ 30	29.06	5
40	28.14	5
Parachor [P] 20°C		
30		
40		
Sugd.	1397.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 35

NAME	1-Chloropentatriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{33}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{35}H_{71}Cl$	Molecular Weight 527.375

		Ref.
F.P. °C	78.	3
F.P. 100%		
B.P. °C 760 mm	505.	3
100	393.	5
30	343.	5
10	304.	5
1	241.	5
Pressure mm 25°C t_e	1977.9	5
Density g/ml 20°C	0.8595[a]	3
d_4^{t} 25 30	0.8562[a]	3
a	0.8727	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4639[a]	3
25	1.4621[a]	3
30		
"C"	0.7135	4
MR (Obs.)	169.280	4
MR (Calc.) (nD-d/2)	168.697	5
Dielectric		
A | 343 to	7.07553	5
B | 606 °C	2718.2	5
C	143.	5
A* | 343 to	2.02114	5
B* | 596 °C	2624.8	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	576.22	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0883	5
t_e	0.0418	5
30 mm	1.2555	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	37.90	5
BP	29.54	5
t_e	26.15	5
t_e (d, e)	25.87	5
$\Delta Hv/T_e$	16.24	5
d | 343 to	55.53	5
e | 596 °C	0.0515	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	0.8841	5
t_e	0.8370	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.		

			Ref.
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		30.03	5
γ 30		29.12	5
40		28.23	5
Parachor [P] 20°C			
30			
40			
Sugd.		1436.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 36

NAME	1-Chlorohexatriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{34}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{73}Cl$	Molecular Weight 541.401

		Ref.
F.P. °C	78.	3
F.P. 100%		
B.P. °C 760 mm	512.	3
100	399.	5
30	348.	5
10	310.	5
1	246.	5
Pressure mm 25°C t_e	1992.7	5
Density g/ml 20°C	0.8594[a]	3
d_4^{t} 25 30	0.8561[a]	3
a	0.8726	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4643[a]	3
25	1.4624[a]	3
30		
"C"	0.7141	4
MR (Obs.)	173.931	4
MR (Calc.) (nD-d/2)	173.315	5
Dielectric		
A | 348 to	7.07871	5
B | 614 °C	2745.4	5
C	142.	5
A* | 348 to	2.03419	5
B* | 604 °C	2652.4	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	584.44	5

			Ref.
dt/dP °C/mm 25°C BP		0.0890	5
t_e		0.0419	5
30 mm		1.2666	5
ΔHm cal/g			
ΔHv cal/g 25°C 30 mm		37.26	5
BP		28.99	5
t_e		25.60	5
t_e (d, e)		25.34	5
$\Delta Hv/T_e$		16.16	5
d | 348 to		54.82	5
e | 604 °C		0.0505	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		0.8829	5
t_e		0.8351	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.			

			Ref.
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		30.08	5
γ 30		29.17	5
40		28.28	5
Parachor [P] 20°C			
30			
40			
Sugd.		1475.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 37

NAME	1-Chloroheptatriacontane		STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{75}Cl$	Molecular Weight 555.427

$CH_3(CH_2)_{35}CH_2Cl$

		Ref.			Ref.			Ref.
F.P. °C	81.	3	dt/dP °C/mm 25°C			f | | to		
F.P. 100%			BP	0.0898	5	g | | °K		
B.P. °C			t_e	0.0420	5	h		
760 mm	519.	3	30 mm	1.2768	5	f' | | to		
100	405.	5	ΔHm cal/g			g' | | °K		
30	354.	5	ΔHv cal/g 25°C			h'		
10	315.	5	30 mm	36.68	5	m | | to		
1	251.	5	BP	28.47	5	n | | °K		
Pressure mm 25°C			t_e	25.03	5	o		
t_e	2007.9	5	t_e (d, e)	24.80	5	m' | | to		
Density g/ml 20°C	0.8593[a]	3	ΔHv/T_e	16.06	5	n' | | °K		
d_4^t 25	0.8559[a]	3	d | 354 to	54.28	5	o'		
30			e | 613 °C	0.0497	5	Surface tension dynes/cm. 20°C	30.13	5
a	0.8729	5	d' | to			σ 30	29.19	5
b	-0.03680	5	e' | °C			40	28.27	5
Ref. Index n_D 20°C	1.4646[a]	3	d_c g/ml			Parachor [P] 20°C		
25	1.4627[a]	3	v_c ml/g			30		
30			t_c °C			40		
"C"	0.7147	4	P_c mm			Sugd.	1514.4	5
MR (Obs.)	178.557	4	PV/RT 25°C			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	177.933	5	30 mm	1.0000	5	Dispersion		
Dielectric			BP	0.8819	5	Flash Point °C		
A | 354 to	7.07519	5	t_e	0.8335	5	Fire Point		
B | 623 °C	2764.1	5	t_c			M. Spec.		
C	140.	5	ΔHc kcal/m			Ultra V.		
A* | 354 to	2.04023	5	ΔHf			X-Ray Dif.		
B* | 613 °C	2671.5	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			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_p liq. °K					
Cryos. A°			c_p vap. °K					
consts. B°			c_v vap.					
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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 38

NAME	1-Chlorooctatriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{36}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{77}Cl$	Molecular Weight 569.453

		Ref.
F.P. °C	81.	3
F.P. 100%		
B.P. °C 760 mm	525.	3
100	410.	5
30	359.	5
10	319.	5
1	255.	5
Pressure mm 25°C t_e	2020.6	5
Density g/ml 20°C	0.8591[a]	3
d_4^{t} 25	0.8558[a]	3
30		
a	0.8723	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4649[a]	3
25	1.4630[a]	3
30		
"C"	0.7153	4
MR (Obs.)	183.211	4
MR (Calc.) (nD-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		
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	599.76	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0904	5
t_e	0.0421	5
30 mm	1.2863	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	36.06	5
BP	27.95	5
t_e	24.54	5
t_e (d, e)	24.31	5
$\Delta Hv/T_e$	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.		

			Ref.
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		30.16	5
γ 30		29.25	5
40		28.35	5
Parachor [P] 20°C			
30			
40			
Sugd.		1553.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 39

NAME	1-Chlorononatriacontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{37}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{39}H_{79}Cl$	Molecular Weight 583.479

		Ref.
F.P. °C	84.	3
F.P. 100%		
B.P. °C 760 mm	531.	3
100	415.	5
30	363.	5
10	324.	5
1	259.	5
Pressure mm 25°C t_e	2034.0	5
Density g/ml 20°C	0.8590[a]	3
d_4^{t} 25 30	0.8557[a]	3
a	0.8722	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4652[a]	3
25	1.4633[a]	3
30		
"C"	0.7158	4
MR (Obs.)	187.849	4
MR (Calc.) (nD-d/2)	187.169	5
Dielectric		
A / B / C 363 to 637 °C	7.07864 / 2808.4 / 138.	5 / 5 / 5
A* / B* / K 363 to 627 °C	2.06196 / 2716.1	5 / 5
c t_k to t_x °C		
A' / B' to °C		
C'		
A'* / B'* to °C		
Ac / Bc / Cc to t_c °C		
Cryos. A° consts. B°		
t_e °C	606.86	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0911	5
t_e	0.0422	5
30 mm	1.2957	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	35.47	5
BP	27.46	5
t_e	24.05	5
t_e (d, e)	23.83	5
ΔHv/T_e	15.94	5
d / e 363 to 627 °C	52.84 / 0.0478	5 / 5
d' / e' to °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	0.8802	5
t_e	0.8307	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v / A^v to °C		
(B^v) / (A^v) to °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
f / g / h to °K			
f' / g' / h' to °K			
m / n / o to °K			
m' / n' / o' to °K			
Surface tension dynes/cm. 20°C		30.21	5
σ 30		29.29	5
40		28.39	5
Parachor [P] 20°C			
30			
40			
Sugd.		1592.4	5
Exp. L.1.%/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 40

NAME	1-Chlorotetracontane	STRUCTURAL FORMULA
		$CH_3(CH_2)_{38}CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{81}Cl$	Molecular Weight 597.505

		Ref.
F.P. °C	84.	3
F.P. 100%		
B.P. °C 760 mm	537.	3
100	420.	5
30	368.	5
10	329.	5
1	263.	5
Pressure mm 25°C t_e	2046.6	5
Density g/ml 20°C	0.8589[a]	3
d_4^{t} 25 30	0.8556[a]	3
a	0.8721	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4655[a]	3
25	1.4636[a]	3
30		
"C"	0.7163	4
MR (Obs.)	192.494	4
MR (Calc.) (nD-d/2)	191.787	5
Dielectric		
A | 368 to	7.08033	5
B | 644 °C	2830.5	5
C	137.	5
A* | 368 to	2.07269	5
B* | 634 °C	2738.5	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	613.93	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0917	5
t_e	0.0423	5
30 mm	1.3051	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	34.91	5
BP	26.98	5
t_e	23.56	5
t_e (d, e)	23.37	5
$\Delta Hv/T_e$	15.87	5
d | 368 to	52.20	5
e | 634 °C	0.0470	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	0.8792	5
t_e	0.8292	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.		

		Ref.
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	30.24	5
γ 30	29.33	5
40	28.43	5
Parachor [P] 20°C		
30		
40		
Sugd.	1631.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 41

NAME	2-Chloropropane		STRUCTURAL FORMULA
			$CH_3CHCl\,CH_3$
Mole % Pur.	Ref. 3	Molecular Formula C_3H_7Cl	Molecular Weight 78.543

		Ref.
F.P. °C	-117.18	3
F.P. 100%		
B.P. °C		
760 mm	35.74	3
100	-12.19	5
30	-33.31	5
10	-49.32	5
1	-75.72	5
Pressure		
mm 25°C	515.3	5
t_e	826.4	5
Density		
g/ml 20°C	0.8617	3
d_4^t 25	0.8563	3
30		
a	0.8837	5
b	-0.00101	5
Ref. Index		
n_D 20°C	1.3777	3
25	1.3749	3
30		
"C"	0.5863	4
MR (Obs.)	20.999	4
MR (Calc.) (nD-d/2)	20.921	5
Dielectric		
A | -33 to	6.91997	5
B | 68 °C	1081.4	5
C	232.	5
A* | -33 to	1.28917	5
B* | 58 °C	1011.7	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	38.17	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0515	5
BP	0.0379	5
t_e	0.0355	5
30 mm	0.5285	5
ΔHm cal/g		
ΔHv cal/g		
25°C	81.73	5
30 mm	91.79	5
BP	79.90	5
t_e	79.49	5
t_e (d, e)	79.48	5
ΔHv/T_e	20.05	5
d | -33 to	86.05	5
e | 58 °C	0.1722	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9664	5
30 mm	1.0000	5
BP	0.9564	5
t_e	0.9541	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.		

			Ref.
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	18.09	5
γ	30	17.13	5
	40	16.17	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	188.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 42

NAME	2-Chlorobutane	STRUCTURAL FORMULA
		$CH_3CHClCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Cl	Molecular Weight 92.569

		Ref.
F.P. °C	-131.3	3
F.P. 100%		
B.P. °C		
760 mm	68.25	3
100	15.83	5
30	-7.29	5
10	-24.85	5
1	-53.81	5
Pressure mm 25°C	151.6	5
t_e	914.0	5
Density g/ml 20°C	0.8732	3
d_4^t 25	0.8677	3
30		
a	0.8952	5
b	-0.00107	5
Ref. Index n_D 20°C	1.3971	3
25	1.3942	3
30		
"C"	0.6066	4
MR (Obs.)	25.535	4
MR (Calc.) (nD-d/2)	25.539	5
Dielectric		
A | -7 to	6.94468	5
B | 104 °C	1195.8	5
C	226.	5
A* | -7 to	1.35292	5
B* | 94 °C	1121.7	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	74.17	5

		Ref.
dt/dP °C/mm		
25°C	0.1510	5
BP	0.0414	5
t_e	0.0358	5
30 mm	0.5791	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.14	5
30 mm	87.33	5
BP	75.38	5
t_e	74.47	5
t_e (d, e)	74.44	5
$\Delta Hv/T_e$	19.85	5
d | -7 to	86.17	5
e | 94 °C	0.1582	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9858	5
30 mm	1.0000	5
BP	0.9513	5
t_e	0.9459	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		21.11	5
γ 30		20.04	5
40		18.98	5
Parachor [P]			
20°C			
30			
40			
Sugd.		227.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 43

NAME	2-Chloro-2-methylpropane	STRUCTURAL FORMULA
		$CH_3CCl(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Cl	Molecular Weight 92.569

		Ref.
F.P. °C	-25.4	3
F.P. 100%		
B.P. °C		
760 mm	50.7	3
100	1.3	5
30	-20.1	5
10	-36.1	5
1	-62.2	5
Pressure mm 25°C	294.8	5
t_e	863.8	5
Density g/ml 20°C	0.8420	3
d_4^{t} 25	0.8361	3
30		
a	0.8658	5
b	-0.00113	5
Ref. Index n_D 20°C	1.3857	3
25	1.3828	3
30		
"C"	0.6120	4
MR (Obs.)	25.806	4
MR (Calc.) (nD-d/2)	25.539	5
Dielectric		
A | -20 to	6.62586	5
B | 85 °C	972.6	5
C	209.	5
A* | -20 to	1.08083	5
B* | 75 °C	913.4	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	54.61	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0829	5
BP	0.0396	5
t_e	0.0359	5
30 mm	0.5311	5
ΔHm cal/g		
ΔHv cal/g		
25°C	75.99	5
30 mm	86.26	5
BP	70.79	5
t_e	70.04	5
t_e (d, e)	69.94	5
ΔHv/T_e	19.78	5
d | -20 to	81.87	5
e | 75 °C	0.2184	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9754	5
30 mm	1.0000	5
BP	0.9512	5
t_e	0.9472	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	18.20	5
σ 30	17.14	5
40	16.11	5
Parachor [P] 20°C		
30		
40		
Sugd.	227.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 44

NAME	2-Chloropentane	STRUCTURAL FORMULA
		$CH_3CHClCH_2CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Cl$	Molecular Weight 106.595

		Ref.
F.P. °C	-137.	3
F.P. 100%		
B.P. °C		
760 mm	96.86	3
100	40.49	5
30	15.59	5
10	-3.33	5
1	-34.57	5
Pressure mm 25°C	48.66	5
t_e	990.4	5
Density g/ml 20°C	0.8698	3
d_4^{t} 25	0.8646	3
30		
a	0.8906	5
b	-0.00103	5
Ref. Index n_D 20°C	1.4069	3
25	1.4046	3
30		
"C"	0.6231	4
MR (Obs.)	30.161	4
MR (Calc.) (nD-d/2)	30.157	5
Dielectric		
A | 16 to	6.96697	5
B | 136 °C	1298.8	5
C	221.	5
A* | 16 to	1.41061	5
B* | 126 °C	1221.1	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	106.07	5

		Ref.
dt/dP °C/mm		
25°C	0.4158	5
BP	0.0445	5
t_e	0.0361	5
30 mm	0.6239	5
ΔHm cal/g		
ΔHv cal/g		
25°C	81.62	5
30 mm	83.03	5
BP	71.21	5
t_e	69.93	5
t_e (d, e)	69.87	5
$\Delta Hv/T_e$	19.66	5
d | 16 to	85.29	5
e | 126 °C	0.1454	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9969	5
30 mm	1.0000	5
BP	0.9470	5
t_e	0.9387	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^V | to		
A^V | °C		
(B^V) |		
(A^V) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		22.31	5
γ 30		21.24	5
40		20.21	5
Parachor [P]			
20°C			
30			
40			
Sugd.		266.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 45

NAME	3-Chloropentane	STRUCTURAL FORMULA
		$CH_3CH_2CHClCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Cl$	Molecular Weight 106.595

		Ref.
F. P. °C	-105.	3
F. P. 100%		
B. P. °C 760 mm	97.79	3
100	41.32	5
30	16.38	5
10	-2.56	5
1	-33.81	5
Pressure mm 25°C	46.77	5
t_e	993.0	5
Density g/ml 20°C	0.8731	3
d_4^{t} 25	0.8681	3
30		
a	0.8931	5
b	-0.0_3989	5
Ref. Index n_D 20°C	1.4082	3
25	1.4059	3
30		
"C"	0.6227	4
MR (Obs.)	30.132	4
MR (Calc.) (nD-d/2)	30.157	5
Dielectric		
A | 16 to	6.95642	5
B | 137 °C	1295.2	5
C	220.	5
A* | 16 to	1.40005	5
B* | 127 °C	1217.8	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	107.11	5

		Ref.
dt/dP °C/mm		
25°C	0.4304	5
BP	0.0446	5
t_e	0.0361	5
30 mm	0.6245	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.08	5
30 mm	83.39	5
BP	71.39	5
t_e	70.09	5
t_e (d, e)	70.02	5
$\Delta Hv/T_e$	19.65	5
d | 16 to	85.81	5
e | 127 °C	0.1474	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9972	5
30 mm	1.0000	5
BP	0.9469	5
t_e	0.9385	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.		

		Ref.
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	22.65	5
σ 30	21.61	5
40	20.60	5
Parachor [P] 20°C		
30		
40		
Sugd.	266.4	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

NAME	2-Chloro-2-methylbutane	STRUCTURAL FORMULA
		$(CH_3)_2CClCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Cl$	Molecular Weight 106.595

		Ref.
F.P. °C	-73.5	3
F.P. 100%		
B.P. °C		
760 mm	85.6	3
100	30.8	5
30	6.6	5
10	-11.8	5
1	-42.2	5
Pressure mm 25°C	76.61	5
t_e	960.4	5
Density g/ml 20°C	0.8653	3
d_4^t 25	0.8601	3
30		
a	0.8861	5
b	-0.00102	5
Ref. Index n_D 20°C	1.4055	3
25	1.4023	3
30		
"C"	0.6244	4
MR (Obs.)	30.226	4
MR (Calc.) (nD-d/2)	30.157	5
Dielectric		
A | 7 to	6.95902	5
B | 123 °C	1258.5	5
C	223.	5
A* | 7 to	1.41251	5
B* | 113 °C	1182.2	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	93.49	5

		Ref.
dt/dP °C/mm		
25°C	0.2770	5
BP	0.0432	5
t_e	0.0360	5
30 mm	0.6063	5
ΔHm cal/g		
ΔHv cal/g		
25°C	77.51	5
30 mm	80.19	5
BP	68.93	5
t_e	67.85	5
t_e (d, e)	67.81	5
$\Delta Hv/T_e$	19.73	5
d | 7 to	81.13	5
e | 113 °C	0.1425	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9931	5
30 mm	1.0000	5
BP	0.9487	5
t_e	0.9415	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	21.83	5
γ 30	20.78	5
40	19.75	5
Parachor [P] 20°C		
30		
40		
Sugd.	266.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 47

NAME	2-Chloro-3-methylbutane	STRUCTURAL FORMULA
		$CH_2ClCH_2CH(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Cl$	Molecular Weight 106.595

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	92.8	3
100	37.0	5
30	12.4	5
10	-6.3	5
1	-37.2	5
Pressure mm 25°C	57.29	5
t_e	979.7	5
Density g/ml 20°C	0.862	3
d_4^{t} 25	0.857	3
30		
a	0.8820	5
b	-0.0_3986	5
Ref. Index n_D 20°C	1.402	3
25	1.400	3
30		
"C"	0.6216	4
MR (Obs.)	30.111	4
MR (Calc.) (nD-d/2)	30.157	5
Dielectric		
A | 12 to	6.95438	5
B | 132 °C	1278.3	5
C	221.	5
A* | 12 to	1.40222	5
B* | 122 °C	1201.4	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	101.53	5

		Ref.
dt/dP °C/mm		
25°C	0.3589	5
BP	0.0440	5
t_e	0.0361	5
30 mm	0.6168	5
ΔHm cal/g		
ΔHv cal/g		
25°C	80.22	5
30 mm	82.12	5
BP	70.38	5
t_e	69.17	5
t_e (d, e)	69.11	5
$\Delta Hv/T_e$	19.68	5
d | 12 to	83.93	5
e | 122 °C	0.1460	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9957	5
30 mm	1.0000	5
BP	0.9476	5
t_e	0.9398	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.		

		Ref.
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	21.51	5
δ 30	20.52	5
40	19.54	5
Parachor [P] 20°C		
30		
40		
Sugd.	266.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 48

NAME	1-Chloro-2, 2-dimethylpropane	STRUCTURAL FORMULA
		$CH_2ClC(CH_3)_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Cl$	Molecular Weight 106.595

		Ref.
F.P. °C	-20.	3
F.P. 100%		
B.P. °C		
760 mm	84.3	3
100	29.7	5
30	5.6	5
10	-12.8	5
1	-43.0	5
Pressure mm 25°C	80.66	5
t_e	957.0	5
Density g/ml 20°C	0.8660	3
d_4^t 25	0.8609	3
30		
a	0.8864	5
b	-0.00100	5
Ref. Index		
n_D 20°C	1.4044	3
25	1.4021	3
30		
"C"	0.6223	4
MR (Obs.)	30.129	4
MR (Calc.) (nD-d/2)	30.157	5
Dielectric		
A | 6 to	6.95488	5
B | 122 °C	1252.0	5
C	223.	5
A* | 6 to	1.40975	5
B* | 112 °C	1175.9	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	92.04	5

		Ref.
dt/dP °C/mm		
25°C	0.2645	5
BP	0.0431	5
t_e	0.0360	5
30 mm	0.6040	5
ΔHm cal/g		
ΔHv cal/g		
25°C	77.06	5
30 mm	79.90	5
BP	68.67	5
t_e	67.61	5
t_e (d, e)	67.56	5
$\Delta Hv/T_e$	19.73	
d | 6 to	80.69	5
e | 112 °C	0.1426	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9927	5
30 mm	1.0000	5
BP	0.9489	5
t_e	0.9419	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	21.90	5
γ 30	20.87	5
40	19.85	5
Parachor [P]		
20°C		
30		
40		
Sugd.	266.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE II. CHLOROALKANES

No. 49

NAME	2-Chloro-2, 3-dimethylbutane	STRUCTURAL FORMULA
		$(CH_3)_2CClCH(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}Cl$	Molecular Weight 120.621

		Ref.
F.P. °C	-10.4	3
F.P. 100%		
B.P. °C 760 mm	112.0	3
100	53.6	5
30	27.7	5
10	8.1	5
1	-24.3	5
Pressure mm 25°C	26.04	5
t_e	1030.7	5
Density g/ml 20°C	0.8780	3
d_4^{t} 25	0.8730	3
30		
a	0.8980	5
b	-0.0_3992	5
Ref. Index n_D 20°C	1.4191	3
25	1.4175	3
30		
"C"	0.6348	4
MR (Obs.)	34.701	4
MR (Calc.) (nD-d/2)	34.775	5
Dielectric		
A | 28 to	6.97297	5
B | 153 °C	1350.4	5
C	218.	5
A* | 28 to	1.45785	5
B* | 143 °C	1271.0	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	123.03	5

		Ref.
dt/dP		
°C/mm		
25°C	0.7291	5
BP	0.0461	5
t_e	0.0363	5
30 mm	0.6472	5
ΔHm cal/g		
ΔHv cal/g		
25°C	77.16	5
30 mm	76.79	5
BP	65.58	5
t_e	64.19	5
t_e (d, e)	64.12	5
$\Delta Hv/T_e$	19.54	5
d | 28 to	80.47	5
e | 143 °C	0.1329	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0007	5
30 mm	1.0000	5
BP	0.9447	5
t_e	0.9350	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		24.41	5
σ 30		23.30	5
40		22.23	5
Parachor [P]			
20°C			
30			
40			
Sugd.		305.4	5
Exp. L.1.%/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

No. 50

NAME	2-Chloro-3, 3-dimethylbutane	STRUCTURAL FORMULA
		$CH_3CHClC(CH_3)_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}Cl$	Molecular Weight 120.621

		Ref.
F.P. °C	-0.9	3
F.P. 100%		
B.P. °C 760 mm	111.	3
100	53.	5
30	27.	5
10	7.	5
1	-25.	5
Pressure mm 25°C	27.14	5
t_e	1028.1	5
Density g/ml 20°C	0.8767	3
d_4^t 25	0.8717	3
30		
a	0.8967	5
b	0.03992	5
Ref. Index n_D 20°C	1.4182	3
25	1.4162	3
30		
"C"	0.6344	4
MR (Obs.)	34.687	4
MR (Calc.)	34.775	5
(nD-d/2)		
Dielectric		
A | 27 to	6.97002	5
B |152 °C	1345.4	5
C	218.	5
A* | 27 to	1.45575	5
B* |142 °C	1266.1	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	121.91	5

		Ref.
dt/dP		
°C/mm		
25°C	0.7023	5
BP	0.0460	5
t_e	0.0363	5
30 mm	0.6455	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.86	5
30 mm	76.59	5
BP	65.41	5
t_e	64.03	5
t_e (d, e)	63.96	5
$\Delta Hv/T_e$	19.55	5
d | 27 to	80.17	5
e | 142 °C	0.1330	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0005	5
30 mm	1.0000	5
BP	0.9450	5
t_e	0.9354	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		24.26	5
γ 30		23.16	5
40		22.09	5
Parachor [P]			
20°C			
30			
40			
Sugd.		305.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 51

NAME	Dichloromethane	STRUCTURAL FORMULA
		CH_2Cl_2

Mole % Pur. | Ref. 3 | Molecular Formula CH_2Cl_2 | Molecular Weight 84.940

		Ref.
F.P. °C	-95.14	3
F.P. 100%		
B.P. °C 760 mm	39.75	3
100	-7.27	3
30	-28.19	3
10	-44.14	3
1	-70.59	5
Pressure mm 25°C	435.8	5
t_e	838.5	5
Density g/ml 20°C	1.3255	3
d_4^t 25	1.3163	3
30		
a	1.3626	5
b	-0.00177	5
Ref. Index n_D 20°C	1.4242	3
25	1.4216	3
30		
"C"	0.4253	4
MR (Obs.)	16.359	4
MR (Calc.) (nD-d/2)	16.552	5
Dielectric		
A | -28 to	7.0803	3
B | 73 °C	1138.91	3
C	231.45	3
A* | -28 to	1.4767	5
B* | 63 °C	1068.03	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	42.54	5

		Ref.
dt/dP °C/mm		
25°C	0.0576	5
BP	0.0369	5
t_e	0.0341	5
30 mm	0.5251	5
ΔHm cal/g		
ΔHv cal/g		
25°C	80.36	5
30 mm	89.10	5
BP	77.98	5
t_e	77.53	5
t_e (d, e)	77.52	5
$\Delta Hv/T_e$	20.86	5
d | -28 to	84.49	5
e | 63 °C	0.1637	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9705	5
30 mm	1.0000	5
BP	0.9574	5
t_e	0.9547	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.		

		Ref.
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	28.00	5
σ 30	26.41	5
40	24.85	5
Parachor [P] 20°C		
30		
40		
Sugd.	147.6	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 52

NAME	1, 1-Dichloroethane	STRUCTURAL FORMULA
		CH_3CHCl_2
Mole % Pur.	Ref. 3	Molecular Formula $C_2H_4Cl_2$ — Molecular Weight 98.966

		Ref.
F.P. °C	-96.98	3
F.P. 100%		
B.P. °C 760 mm	57.28	3
100	6.85	5
30	-15.45	5
10	-32.40	5
1	-60.42	5
Pressure mm 25°C	227.7	5
t_e	885.0	5
Density g/ml 20°C	1.1757	3
d_4^{t} 25	1.1679	3
30		
a	1.2070	5
b	-0.00152	5
Ref. Index n_D 20°C	1.4164	3
25	1.4140	3
30		
"C"	0.4712	4
MR (Obs.)	21.142	4
MR (Calc.) (nD-d/2)	21.170	5
Dielectric		
A | -15 to	6.9853	3
B | 92 °C	1171.42	3
C	228.12	3
A* | -15 to	1.4322	5
B* | 82 °C	1098.56	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	61.95	5

		Ref.
dt/dP °C/mm		
25°C	0.1043	5
BP	0.0397	5
t_e	0.0352	5
30 mm	0.5589	5
ΔHm cal/g		
ΔHv cal/g		
25°C	73.60	5
30 mm	79.51	5
BP	68.99	5
t_e	68.34	5
t_e (d, e)	68.31	5
$\Delta Hv/T_e$	20.18	5
d | -15 to	77.28	5
e | 82 °C	0.1447	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT 25°C	0.9805	5
30 mm	1.0000	5
BP	0.9535	5
t_e	0.9492	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.		

			Ref.
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	24.07	5
γ	30	22.77	5
	40	21.50	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	186.6	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 53

NAME	1, 1-Dichloropropane	STRUCTURAL FORMULA
		$CH_3CH_2CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Cl_2$	Molecular Weight 112.920

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	88.1	3
100	33.2	5
30	9.0	5
10	-9.5	5
1	-40.0	5
Pressure mm 25°C	68.30	5
t_e	967.4	5
Density g/ml 20°C	1.1321	3
d_4^{t} 25	1.1260	3
30		
a	1.1565	5
b	-0.00120	5
Ref. Index n_D 20°C	1.4289	3
25	1.4266	3
30		
"C"	0.5031	4
MR (Obs.)	25.709	4
MR (Calc.) (nD-d/2)	25.788	5
Dielectric		
A | 9 to	6.982	3
B | 126 °C	1273.	3
C	222.3	3
A* | 9 to	1.458	5
B* | 116 °C	1196.	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	96.24	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3055	5
BP	0.0432	5
t_e	0.0358	5
30 mm	0.6081	5
ΔHm cal/g		
ΔHv cal/g		
25°C	74.52	5
30 mm	76.75	5
BP	66.02	5
t_e	64.98	5
t_e (d, e)	64.92	5
ΔHv/T_e	19.86	5
d | 9 to	77.97	5
e | 116 °C	0.1355	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9942	5
30 mm	1.0000	5
BP	0.9486	5
t_e	0.9413	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.		

		Ref.
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	26.14	5
σ 30	25.01	5
40	23.91	5
Parachor [P]		
20°C		
30		
40		
Sugd.	225.6	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 54

NAME	1, 1-Dichlorobutane	STRUCTURAL FORMULA
		$CH_3(CH_2)_2CHCl_2$

Mole % Pur.	Ref.	Molecular Formula	$C_4H_8Cl_2$	Molecular Weight	127.018

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	113.8	3
100	55.9	5
30	30.2	5
10	10.6	5
1	-21.8	5
Pressure		
mm 25°C	22.83	5
t_e	1036.0	5
Density		
g/ml 20°C	1.086	3
d_4^t 25	1.083	3
30		
a	1.0980	5
b	-0.03593	5
Ref. Index		
n_D 20°C	1.4355	3
25	1.433	3
30		
"C"	0.5321	4
MR (Obs.)	30.550	4
MR (Calc.)	30.406	5
(nD-d/2)		
Dielectric		
A | 30 to	7.035	3
B | 155 °C	1376.	3
C	217.4	3
A* | 30 to	1.540	5
B* | 145 °C	1296.	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	124.92	5

		Ref.
dt/dP		
°C/mm		
25°C	0.8124	5
BP	0.0456	5
t_e	0.0357	5
30 mm	0.6449	5
ΔHm cal/g		
ΔHv cal/g		
25°C	75.09	5
30 mm	74.39	5
BP	63.73	5
t_e	62.35	5
t_e (d, e)	62.31	5
$\Delta Hv/T_e$	19.90	5
d | 30 to	78.24	5
e | 145 °C	0.1275	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0014	5
30 mm	1.0000	5
BP	0.9460	5
t_e	0.9354	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.		

			Ref.
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	26.18	5
γ	30	25.60	5
	40	25.02	5
Parachor [P]			
	20°C		
	30		
	40		
	Sugd.	264.6	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 55

NAME	1, 1-Dichloropentane	STRUCTURAL FORMULA
		$CH_3(CH_2)_3CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Cl_2$	Molecular Weight 141.044

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C 760 mm	139.8	3
100	78.7	5
30	51.5	5
10	30.8	5
1	-3.6	5
Pressure mm 25°C	7.10	5
t_e	1104.1	5
Density g/ml 20°C	1.053	3
d_4^{t} 25	1.048	3
30		
a	1.0730	5
b	-0.0_3997	5
Ref. Index n_D 20°C	1.434	3
25	1.432	3
30		
"C"	0.5470	4
MR (Obs.)	34.882	4
MR (Calc.) (nD-d/2)	35.024	5
Dielectric		
A | 52 to	7.077	3
B | 184 °C	1478.	3
C	212.4	3
A* | 52 to	1.608	5
B* | 174 °C	1396.	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	153.99	5

		Ref.
dt/dP °C/mm		
25°C	2.333	5
BP	0.0480	5
t_e	0.0357	5
30 mm	0.6823	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.01	5
30 mm	72.55	5
BP	61.78	5
t_e	60.13	5
t_e (d, e)	60.05	5
$\Delta Hv/T_e$	19.86	5
d | 52 to	78.84	5
e | 174 °C	0.1220	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0051	5
30 mm	1.0000	5
BP	0.9418	5
t_e	0.9291	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.		

		Ref.
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	26.39	5
σ 30	25.40	5
40	24.43	5
Parachor [P] 20°C		
30		
40		
Sugd.	303.6	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 56

NAME	1, 1-Dichlorohexane	STRUCTURAL FORMULA
		$CH_3(CH_2)_4CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{12}Cl_2$	Molecular Weight 155.070

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	164.	3
100	100.	5
30	72.	5
10	50.	5
1	14.	5
Pressure		
mm 25°C	2.24	5
t_e	1167.1	5
Density		
g/ml 20°C	1.029	3
d_4^t 25	1.024	3
30		
a	1.0490	5
b	-0.0_3999	5
Ref. Index		
n_D 20°C	1.437	3
25	1.435	3
30		
"C"	0.5634	4
MR (Obs.)	39.481	4
MR (Calc.) (nD-d/2)	39.642	5
Dielectric		
A | 72 to	7.123	3
B | 211 °C	1578.	3
C	208.	3
A* | 72 to	1.678	5
B* | 201 °C	1493.	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	181.06	5

		Ref.
dt/dP		
°C/mm		
25°C	6.667	5
BP	0.0501	5
t_e	0.0357	5
30 mm	0.7166	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.68	5
30 mm	70.79	5
BP	59.96	5
t_e	58.14	5
t_e (d, e)	57.96	5
$\Delta Hv/T_e$	19.85	5
d | 72 to	79.16	5
e | 201 °C	0.1171	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0057	5
30 mm	1.0000	5
BP	0.9372	5
t_e	0.9235	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.		

		Ref.
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	26.71	5
γ 30	25.69	5
40	24.69	5
Parachor [P]		
20°C		
30		
40		
Sugd.	342.6	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 57

NAME	1, 1-Dichloroheptane	STRUCTURAL FORMULA
		$CH_3(CH_2)_5CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{14}Cl_2$	Molecular Weight 169.096

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C 760 mm	187.	3
100	121.	5
30	91.	5
10	68.	5
1	31.	5
Pressure mm 25°C	0.67	5
t_e	1226.5	5
Density g/ml 20°C	1.009	3
d_4^t 25	1.005	3
30		
a	1.0250	5
b	-0.03800	5
Ref. Index n_D 20°C	1.440	3
25	1.438	3
30		
"C"	0.5783	4
MR (Obs.)	44.168	4
MR (Calc.) (nD-d/2)	44.260	5
Dielectric		
A | 91 to	7.181	3
B | 237 °C	1677.	3
C	203.	3
A* | 91 to	1.759	5
B* | 227 °C	1591.	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	206.79	5

		Ref.
dt/dP °C/mm		
25°C	20.11	5
BP	0.0518	5
t_e	0.0355	5
30 mm	0.7462	5
ΔHm cal/g		
ΔHv cal/g		
25°C	77.93	5
30 mm	69.60	5
BP	58.70	5
t_e	56.67	5
t_e (d, e)	56.46	5
$\Delta Hv/T_e$	19.97	5
d | 91 to	79.93	5
e | 227 °C	0.1135	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0042	5
30 mm	1.0000	5
BP	0.9343	5
t_e	0.9185	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.		

		Ref.
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	26.88	5
σ 30	26.04	5
40	25.22	5
Parachor [P] 20°C		
30		
40		
Sugd.	381.6	5
Exp. L. 1. %/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

No. 58

NAME	1,1-Dichlorooctane	STRUCTURAL FORMULA
		$CH_3(CH_2)_6CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{16}Cl_2$	Molecular Weight 183.122

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	208.	3
100	140.	5
30	109.	5
10	85.	5
1	46.	5
Pressure		
mm 25°C	0.21	5
t_e	1280.3	5
Density		
g/ml 20°C	0.994	3
d_4^t 25	0.990	3
30		
a	1.0100	5
b	-0.0_3800	5
Ref. Index		
n_D 20°C	1.443	3
25	1.441	3
30		
"C"	0.5908	4
MR (Obs.)	48.841	4
MR (Calc.) (nD-d/2)	48.878	5
Dielectric		
A | 109 to	7.237	3
B | 260 °C	1773.	3
C	199.	3
A* | 109 to	1.837	5
B* | 250 °C	1685.	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	230.33	5

		Ref.
dt/dP		
°C/mm		
25°C	58.58	5
BP	0.0534	5
t_e	0.0353	5
30 mm	0.7736	5
ΔHm cal/g		
ΔHv cal/g		
25°C	78.61	5
30 mm	68.20	5
BP	57.37	5
t_e	55.13	5
t_e (d, e)	54.93	5
$\Delta Hv/T_e$	20.05	5
d | 109 to	80.09	5
e | 250 °C	0.1092	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0015	5
30 mm	1.0000	5
BP	0.9321	5
t_e	0.9140	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.		

		Ref.
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	27.17	5
γ 30	26.30	5
40	25.46	5
Parachor [P]		
20°C		
30		
40		
Sugd.	420.6	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 59

NAME	1, 1-Dichlorononane	STRUCTURAL FORMULA
		$CH_3(CH_2)_7CHCl_2$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_9H_{18}Cl_2$	197.148

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	228.	3
100	157.	5
30	125.	5
10	101.	5
1	60.	5
Pressure		
mm 25°C	0.07	5
t_e	1330.6	5
Density		
g/ml 20°C	0.982	3
d_4^{t} 25	0.978	3
30		
a	0.9980	5
b	-0.03800	5
Ref. Index		
n_D 20°C	1.445	3
25	1.443	3
30		
"C"	0.6005	4
MR (Obs.)	53.433	4
MR (Calc.) (nD-d/2)	53.496	5
Dielectric		
A | 125 to	7.282	3
B | 283 °C	1866.	3
C	196.	3
A* | 125 to	1.903	5
B* | 273 °C	1776.	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	252.78	5

		Ref.
dt/dP		
°C/mm		
25°C	164.9	5
BP	0.0550	5
t_e	0.0352	5
30 mm	0.8017	5
ΔHm cal/g		
ΔHv cal/g		
25°C	78.71	5
30 mm	66.58	5
BP	55.82	5
t_e	53.48	5
t_e (d, e)	53.23	5
$\Delta Hv/T_e$	20.05	5
d | 125 to	79.73	5
e | 273 °C	0.1048	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9986	5
30 mm	1.0000	5
BP	0.9285	5
t_e	0.9093	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.		

		Ref.
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	27.47	5
σ 30	26.58	5
40	25.72	5
Parachor [P]		
20°C		
30		
40		
Sugd.	459.6	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 60

NAME	1, 1-Dichlorodecane	STRUCTURAL FORMULA
		$CH_3(CH_2)_8CHCl_2$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{10}H_{20}Cl_2$	211.174

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	247.	3
100	175.	5
30	142.	5
10	117.	5
1	75.	5
Pressure		
mm 25°C	0.02	5
t_e	1378.1	5
Density		
g/ml 20°C	0.972	3
d^t_4 25	0.968	3
30		
a	0.9880	5
b	-0.0_3800	5
Ref. Index		
n_D 20°C	1.447	3
25	1.445	3
30		
"C"	0.6093	4
MR (Obs.)	58.048	4
MR (Calc.)	58.114	5
(nD-d/2)		
Dielectric		
A | 142 to	7.334	3
B | 304 °C	1955.	3
C	192.	3
A* | 142 to	1.975	5
B* | 294 °C	1865.	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	274.06	5

		Ref.
dt/dP		
°C/mm		
25°C	495.2	5
BP	0.0563	5
t_e	0.0350	5
30 mm	0.8250	5
ΔHm cal/g		
ΔHv cal/g		
25°C	79.55	5
30 mm	65.44	5
BP	54.73	5
t_e	52.20	5
t_e (d, e)	51.97	5
$\Delta Hv/T_e$	20.15	5
d | 142 to	79.88	5
e | 294 °C	0.1018	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9948	5
30 mm	1.0000	5
BP	0.9266	5
t_e	0.9052	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.		

		Ref.
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	27.74	5
γ 30	26.84	5
40	25.96	5
Parachor [P]		
20°C		
30		
40		
Sugd.	498.6	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 61

NAME	1, 2-Dichloroethane	STRUCTURAL FORMULA
		CH_2ClCH_2Cl

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_4Cl_2$	Molecular Weight 98.966

		Ref.
F.P. °C	-35.66	3
F.P. 100%		
B.P. °C 760 mm	83.47	3
100	28.96	5
30	4.90	5
10	-13.37	5
1	-43.52	5
Pressure mm 25°C	83.35	5
t_e	954.9	5
Density g/ml 20°C	1.2531	3
d_4^t 25	1.2458	3
30		
a	1.2823	5
b	-0.00144	5
Ref. Index n_D 20°C	1.4448	3
25	1.4421	3
30		
"C"	0.4704	4
MR (Obs.)	21.012	4
MR (Calc.) (nD-d/2)	21.170	5
Dielectric		
A | 5 to	6.95222	5
B | 121 °C	1247.8	5
C	223.	5
A* | 5 to	1.37555	5
B* | 111 °C	1171.9	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	91.12	5

		Ref.
dt/dP °C/mm		
25°C	0.2568	5
BP	0.0430	5
t_e	0.0360	5
30 mm	0.6026	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.72	5
30 mm	85.86	5
BP	73.91	5
t_e	72.82	5
t_e (d, e)	72.75	5
$\Delta Hv/T_e$	19.78	5
d | 5 to	86.61	5
e | 111 °C	0.1521	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9924	5
30 mm	1.0000	5
BP	0.9491	5
t_e	0.9422	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.		

			Ref.
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		31.13	5
σ 30		29.68	5
40		28.27	5
Parachor [P] 20°C			
30			
40			
Sugd.		186.6	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 62

NAME	1, 2-Dichloropropane	STRUCTURAL FORMULA
		$CH_3CHClCH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Cl_2$	Molecular Weight 112.992

		Ref.
F.P. °C	-100.44	3
F.P. 100%		
B.P. °C		
760 mm	96.37	3
100	40.07	5
30	15.20	5
10	-3.69	5
1	-34.89	5
Pressure mm 25°C	49.63	5
t_e	989.3	5
Density g/ml 20°C	1.1560	3
d_4^t 25	1.1494	3
30		
a	1.1824	5
b	-0.00131	5
Ref. Index		
n_D 20°C	1.4394	3
25	1.4368	3
30		
"C"	0.5041	4
MR (Obs.)	25.730	4
MR (Calc.) (nD-d/2)	25.788	5
Dielectric		
A | 15 to	6.96546	5
B | 135 °C	1296.4	5
C	221.	5
A* | 15 to	1.43463	5
B* | 125 °C	1218.6	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	105.52	5

		Ref.
dt/dP °C/mm		
25°C	0.4085	5
BP	0.0444	5
t_e	0.0361	5
30 mm	0.6230	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.85	5
30 mm	78.23	5
BP	67.16	5
t_e	65.98	5
t_e (d, e)	65.91	5
$\Delta Hv/T_e$	19.69	5
d | 15 to	80.30	5
e | 125 °C	0.1364	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9968	5
30 mm	1.0000	5
BP	0.9472	5
t_e	0.9390	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.		

		Ref.
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	28.36	5
γ 30	27.07	5
40	25.81	5
Parachor [P]		
20°C		
30		
40		
Sugd.	225.6	5
Exp. L. 1. %/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. 63

NAME	1,3-Dichloropropane	STRUCTURAL FORMULA
		$CH_2ClCH_2CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Cl_2$	Molecular Weight 112.992

		Ref.
F.P. °C	-99.5	3
F.P. 100%		
B.P. °C		
760 mm	120.4	3
100	60.8	5
30	34.5	5
10	14.5	5
1	-18.6	5
Pressure		
mm 25°C	18.25	5
t_e	1052.8	5
Density		
g/ml 20°C	1.1878	3
d_4^{t} 25	1.1818	3
30		
a	1.2118	5
b	-0.00120	5
Ref. Index		
n_D 20°C	1.4487	3
25	1.4460	3
30		
"C"	0.5004	4
MR (Obs.)	25.500	4
MR (Calc.) (nD-d/2)	25.788	5
Dielectric		
A | 34 to	6.97186	5
B | 162 °C	1376.2	5
C	216.	5
A* | 34 to	1.42212	5
B* | 152 °C	1296.1	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	132.46	5

		Ref.
dt/dP		
°C/mm		
25°C	1.004	5
BP	0.0470	5
t_e	0.0364	5
30 mm	0.6599	5
ΔHm cal/g		
ΔHv cal/g		
25°C	85.49	5
30 mm	84.06	5
BP	71.71	5
t_e	70.11	5
t_e (d, e)	69.98	5
$\Delta Hv/T_e$	19.53	5
d | 34 to	89.00	5
e | 152 °C	0.1436	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0023	5
30 mm	1.0000	5
BP	0.9434	5
t_e	0.9329	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.		

		Ref.
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	31.62	5
σ 30	30.36	5
40	29.13	5
Parachor [P]		
20°C		
30		
40		
Sugd.	225.6	5
Exp. L.1.%/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

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No. 64

NAME	2, 2-Dichloropropane	STRUCTURAL FORMULA
		$CH_3CCl_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Cl_2$	Molecular Weight 112.992

		Ref.
F.P. °C	-33.8	3
F.P. 100%		
B.P. °C		
760 mm	69.3	3
100	16.7	5
30	-6.5	5
10	-24.1	5
1	-53.1	5
Pressure mm 25°C	145.5	5
t_e	917.0	5
Density g/ml 20°C	1.112	3
d_4^t 25	1.106	3
30		
a	1.1360	5
b	-0.00117	5
Ref. Index		
n_D 20°C	1.4148	3
25	1.4123	3
30		
"C"	0.4963	4
MR (Obs.)	25.435	4
MR (Calc.) (nD-d/2)	25.788	5
Dielectric		
A | -6 to	6.94820	5
B | 105 °C	1201.1	5
C	226.	5
A* | -6 to	1.44146	5
B* | 95 °C	1126.7	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	75.34	5

		Ref.
dt/dP °C/mm		
25°C	0.1565	5
BP	0.0415	5
t_e	0.0358	5
30 mm	0.5809	5
ΔHm cal/g		
ΔHv cal/g		
25°C	67.64	5
30 mm	71.76	5
BP	61.98	5
t_e	61.23	5
t_e (d, e)	61.20	5
$\Delta Hv/T_e$	19.85	5
d | -6 to	70.93	5
e | 95 °C	0.1291	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9864	5
30 mm	1.0000	5
BP	0.9514	5
t_e	0.9458	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.		

		Ref.
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	24.24	5
γ 30	23.17	5
40	22.12	5
Parachor [P] 20°C		
30		
40		
Sugd.	225.6	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 65

NAME	1,4-Dichlorobutane	STRUCTURAL FORMULA
		$CH_2ClCH_2CH_2CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_8Cl_2$	Molecular Weight 127.018

		Ref.
F.P. °C	-37.3	3
F.P. 100%		
B.P. °C		
760 mm	153.9	3
100	89.7	5
30	61.3	5
10	39.7	5
1	4.0	5
Pressure mm 25°C	4.23	5
t_e	1140.4	5
Density g/ml 20°C	1.1408	3
d_4^t 25	1.1353	3
30		
a	1.1628	5
b	-0.00110	5
Ref. Index n_D 20°C	1.4542	3
25	1.4518	3
30		
"C"	0.5270	4
MR (Obs.)	30.163	4
MR (Calc.) (nD-d/2)	30.406	5
Dielectric		
A | 61 to	6.99113	5
B | 200 °C	1495.7	5
C	210.	5
A* | 61 to	1.46729	5
B* | 190 °C	1412.1	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	170.20	5

		Ref.
dt/dP °C/mm		
25°C	3.791	5
BP	0.0506	5
t_e	0.0368	5
30 mm	0.7122	5
ΔHm cal/g		
ΔHv cal/g		
25°C	87.18	5
30 mm	81.88	5
BP	69.36	5
t_e	67.35	5
t_e (d, e)	67.15	5
$\Delta Hv/T_e$	19.29	5
d | 61 to	90.16	5
e | 190 °C	0.1352	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0052	5
30 mm	1.0000	5
BP	0.9383	5
t_e	0.9245	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.		

		Ref.
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	31.89	5
σ 30	30.68	5
40	29.50	5
Parachor [P] 20°C		
30		
40		
Sugd.	264.6	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 66

NAME	1,5-Dichloropentane	STRUCTURAL FORMULA
		$CH_2Cl(CH_2)_3CH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Cl_2$	Molecular Weight 141.044

		Ref.
F.P. °C	-72.8	3
F.P. 100%		
B.P. °C		
760 mm	180.	3
100	112.	5
30	82.	5
10	59.	5
1	22.	5
Pressure		
mm 25°C	1.27	5
t_e	1207.6	5
Density		
g/ml 20°C	1.1006	3
d_4^{t} 25	1.0956	3
30		
a	1.1206	5
b	-0.0_3999	5
Ref. Index		
n_D 20°C	1.4564	3
25	1.4541	3
30		
"C"	0.5487	4
MR (Obs.)	34.862	4
MR (Calc.) (nD-d/2)	35.024	5
Dielectric		
A | 82 to	7.00070	5
B | 230 °C	1586.2	5
C	205.	5
A* | 82 to	1.50541	5
B* | 220 °C	1500.3	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	199.76	5

		Ref.
dt/dP		
°C/mm		
25°C	11.39	5
BP	0.0534	5
t_e	0.0371	5
30 mm	0.7526	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.84	5
30 mm	78.77	5
BP	66.30	5
t_e	64.03	5
t_e (d, e)	63.78	5
$\Delta Hv/T_e$	19.10	5
d | 82 to	89.24	5
e | 220 °C	0.1274	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0042	5
30 mm	1.0000	5
BP	0.9341	5
t_e	0.9178	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.		

		Ref.
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	31.50	5
γ 30	30.37	5
40	29.27	5
Parachor [P]		
20°C		
30		
40		
Sugd.	303.6	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE II. CHLOROALKANES

No. 67

NAME	Trichloromethane (Chloroform)	STRUCTURAL FORMULA
		$CHCl_3$

Mole % Pur.	Ref. 3	Molecular Formula $CHCl_3$	Molecular Weight 119.389

		Ref.
F. P. °C	-63.49	3
F. P. 100%		
B. P. °C		
760 mm	61.73	3
100	10.22	5
30	-12.50	5
10	-29.74	5
1	-58.17	5
Pressure mm 25°C	194.8	5
t_e	896.4	5
Density g/ml 20°C	1.4832	3
d_4^t 25	1.4799	3
30		
a	1.4965	5
b	-0.03613	5
Ref. Index n_D 20°C	1.4459	3
25	1.4439	3
30		
"C"	0.3984	4
MR (Obs.)	21.461	4
MR (Calc.) (nD-d/2)	21.419	5
Dielectric		
A | -13 to	6.93708	5
B | 97 °C	1171.2	5
C	227.	5
A* | -13 to	1.46236	5
B* | 87 °C	1098.1	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	66.93	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1209	5
BP	0.0407	5
t_e	0.0357	5
30 mm	0.5687	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.68	5
30 mm	66.27	5
BP	57.32	5
t_e	56.72	5
t_e (d, e)	56.69	5
ΔHv/T_e	19.91	5
d | -13 to	64.76	5
e | 87 °C	0.1206	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9825	5
30 mm	1.0000	5
BP	0.9523	5
t_e	0.9474	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.		

		Ref.
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	27.70	5
σ 30	27.17	5
40	26.62	5
Parachor [P]		
20°C		
30		
40		
Sugd.	184.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 68

NAME	1, 1, 1-Trichloroethane	STRUCTURAL FORMULA
		CH_3CCl_3

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_3Cl_3$	Molecular Weight 133.415

		Ref.
F.P. °C	-30.41	3
F.P. 100%		
B.P. °C		
760 mm	74.10	3
100	20.88	5
30	-2.62	5
10	-20.45	5
1	-49.88	5
Pressure mm 25°C	120.7	5
t_e	929.9	5
Density g/ml 20°C	1.3390	3
d^t_4 25	1.3314	3
30		
a	1.3694	5
b	-0.00149	5
Ref. Index		
n_D 20°C	1.4379	3
25	1.4359	3
30		
"C"	0.4338	4
MR (Obs.)	26.151	4
MR (Calc.) (nD-d/2)	25.837	5
Dielectric		
A -3 to	6.94983	5
B 111 °C	1217.0	5
C	225.	5
A* -3 to	1.51094	5
B* 101 °C	1142.1	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	80.68	5

		Ref.
dt/dP °C/mm		
25°C	0.1848	5
BP	0.0420	5
t_e	0.0359	5
30 mm	0.5882	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.65	5
30 mm	61.76	5
BP	53.27	5
t_e	52.58	5
t_e (d, e)	52.55	5
$\Delta Hv/T_e$	19.82	5
d -3 to	61.47	5
e 101 °C	0.1107	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9886	5
30 mm	1.0000	5
BP	0.9506	5
t_e	0.9446	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.		

		Ref.
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	25.40	5
γ 30	24.24	5
40	23.09	5
Parachor [P] 20°C		
30		
40		
Sugd.	223.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 69

NAME	1, 1, 2-Trichloroethane	STRUCTURAL FORMULA
		$CH_2ClCHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_3Cl_3$	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	5	g | °K		
B. P. °C			BP	0.0463	5	h		
760 mm	113.77	3	t_e	0.0363	5	f' | to		
100	55.09	5	30 mm	0.6493	5	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	5	n | °K		
Pressure			30 mm	69.87	5	o		
mm 25°C	24.13	5	BP	59.67	5	m' | to		
t_e	1035.3	5	t_e	58.41	5	n' | °K		
Density			t_e (d, e)	58.32	5	o'		
g/ml 20°C	1.4397	3	ΔHv/T_e	19.57	5			
d_4^t 25	1.4319	3	d | 29 to	73.39	5	Surface tension		
30			e | 145 °C	0.1206	5	dynes/cm. 20°C	34.01	5
a	1.4709	5	d' | to			γ 30	32.55	5
b	-0.00155	5	e' | °C			40	31.13	5
Ref. Index			d_c g/ml			Parachor [P]		
n_D 20°C	1.4714	3	v_c ml/g			20°C		
25	1.4689	3	t_c °C			30		
30			P_c mm			40		
"C"	0.4324	4	PV/RT			Sugd.	223.8	5
MR (Obs.)	25.921	4	25°C	1.0011	5	Exp. L. l. %/wt. u.		
MR (Calc.)	25.837	5	30 mm	1.0000	5	Dispersion		
(nD-d/2)			BP	0.9444	5	Flash Point °C		
Dielectric			t_e	0.9345	5	Fire Point		
A | 29 to	6.96527	5	t_c			M. Spec.		
B | 155 °C	1351.0	5	ΔHc kcal/m			Ultra V.		
C	217.	5	ΔHf			X-Ray Dif.		
A* | 29 to	1.49326	5	ΔFf			Infrared		
B* | 145 °C	1271.8	5	Viscosity centistokes			Solubility in +		
K			η °C			Acetone		
c						Carbon tet.		
t_k | to						Benzene		
t_x | °C			B^v | to			Ether		
A' | to			A^v | °C			n-Heptane		
B' | °C			(B^v) | to			Ethanol		
C'			(A^v) | °C			Water		
A'* to						Water in		
B'* °C			c_p liq. °K					
Ac | to			c_p vap. °K					
Bc | t_c °C			c_v vap.					
Cc								
Cryos. A°								
consts. 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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 70

NAME	1, 1, 3-Trichloropropane	STRUCTURAL FORMULA
		$CH_2ClCH_2CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_5Cl_3$	Molecular Weight 147.441

		Ref.
F.P. °C	-58.98	3
F.P. 100%		
B.P. °C		
760 mm	145.55	3
100	82.49	5
30	54.61	5
10	33.42	5
1	-1.59	5
Pressure mm 25°C	6.12	5
t_e	1118.5	5
Density g/ml 20°C	1.3557	3
d_4^{t} 25	1.3544	3
30		
a	1.3609	5
b	-0.03258	5
Ref. Index		
n_D 20°C	1.4718	3
25	1.4698	3
30		
"C"	0.4596	4
MR (Obs.)	30.443	4
MR (Calc.) (nD-d/2)	30.255	5
Dielectric		
A | 55 to	6.98064	5
B | 191 °C	1461.8	5
C	211.	5
A* | 55 to	1.52815	5
B* | 181 °C	1379.3	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	160.77	5

		Ref.
dt/dP °C/mm		
25°C	2.705	5
BP	0.0497	5
t_e	0.0367	5
30 mm	0.6987	5
ΔHm cal/g		
ΔHv cal/g		
25°C	72.76	5
30 mm	69.07	5
BP	58.57	5
t_e	56.97	5
t_e (d, e)	56.81	5
$\Delta Hv/T_e$	19.36	5
d | 55 to	75.37	5
e | 181 °C	0.1155	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0050	5
30 mm	1.0000	5
BP	0.9395	5
t_e	0.9265	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.		

		Ref.
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	34.09	5
γ 30	33.83	5
40	33.56	5
Parachor [P]		
20°C		
30		
40		
Sugd.	262.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE II. CHLOROALKANES

No. 71

NAME	1, 2, 3-Trichloropropane	STRUCTURAL FORMULA
		$CH_2ClCHClCH_2Cl$

Mole % Pur.	Ref.	Molecular Formula $C_3H_5Cl_3$	Molecular Weight 147.441
	3		

		Ref.
F.P. °C	-14.7	3
F.P. 100%		
B.P. °C 760 mm	156.85	3
100	92.23	5
30	63.65	5
10	41.92	5
1	6.01	5
Pressure mm 25°C	3.69	5
t_e	1148.0	5
Density g/ml 20°C	1.3888	3
d_4^{t} 25	1.3832	3
30		
a	1.4112	5
b	-0.00112	5
Ref. Index n_D 20°C	1.4832	3
25	1.4812	3
30		
"C"	0.4588	4
MR (Obs.)	30.331	4
MR (Calc.) (nD-d/2)	30.255	5
Dielectric		
A | 64 to	6.98716	5
B | 204 °C	1502.3	5
C	209.	5
A* | 64 to	1.52659	5
B* | 194 °C	1418.6	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	173.54	5

		Ref.
dt/dP °C/mm		
25°C	4.290	5
BP	0.0509	5
t_e	0.0369	5
30 mm	0.7163	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.08	5
30 mm	71.13	5
BP	60.18	5
t_e	58.40	5
t_e (d, e)	58.22	5
$\Delta Hv/T_e$	19.28	5
d | 64 to	78.61	5
e | 194 °C	0.1175	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0052	5
30 mm	1.0000	5
BP	0.9378	5
t_e	0.9237	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.		

			Ref.
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		37.55	5
σ 30		36.35	5
40		35.18	5
Parachor [P] 20°C			
30			
40			
Sugd.		262.8	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			

+ grams/100 grams solvent

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. 72

NAME	Tetrachloromethane (carbon tetrachloride)	STRUCTURAL FORMULA
		CCl_4

Mole % Pur.	Ref. 3	Molecular Formula CCl_4	Molecular Weight 153.838

		Ref.
F.P. °C	-22.99	3
F.P. 100%		
B.P. °C		
760 mm	76.54	3
100	22.99	5
30	-0.63	5
10	-18.56	5
1	-48.15	5
Pressure mm 25°C	109.6	5
t_e	936.2	5
Density g/ml 20°C	1.5940	3
d_4^t 25	1.5843	3
30		
a	1.6328	5
b	-0.00190	5
Ref. Index n_D 20°C	1.4601	3
25	1.4570	3
30		
"C"	0.3818	4
MR (Obs.)	26.438	4
MR (Calc.) (nD-d/2)	26.286	5
Dielectric		
A | -1 to	6.94369	5
B | 113 °C	1221.1	5
C	224.	5
A* | -1 to	1.56538	5
B* | 103 °C	1146.2	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	83.39	5

		Ref.
dt/dP °C/mm		
25°C	0.2012	5
BP	0.0423	5
t_e	0.0359	5
30 mm	0.5915	5
ΔHm cal/g		
ΔHv cal/g		
25°C	51.50	5
30 mm	54.05	5
BP	46.54	5
t_e	45.90	5
t_e (d, e)	45.87	5
$\Delta Hv/T_e$	19.80	5
d | -1 to	53.99	5
e | 103 °C	0.0974	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9896	5
30 mm	1.0000	5
BP	0.9501	5
t_e	0.9438	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.		

		Ref.
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	27.95	5
γ 30	26.58	5
40	25.25	5
Parachor [P] 20°C		
30		
40		
Sugd.	222.0	5
Exp. L.1.%/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. 73

NAME	1, 1, 1, 2-Tetrachloroethane	STRUCTURAL FORMULA
		CH_2ClCCl_3

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_2Cl_4$	Molecular Weight 167.864

		Ref.
F. P. °C	-70.21	3
F. P. 100%		
B. P. °C		
760 mm	130.5	3
100	69.5	5
30	42.6	5
10	22.1	5
1	-11.8	5
Pressure		
mm 25°C	11.84	5
t_e	1079.1	5
Density		
g/ml 20°C	1.5406	3
d_4^t 25	1.5328	3
30		
a	1.5718	5
b	-0.00156	5
Ref. Index		
n_D 20°C	1.4821	3
25	1.4794	3
30		
"C"	0.4127	4
MR (Obs.)	31.069	4
MR (Calc.)	30.904	5
(nD-d/2)		
Dielectric		
A | 43 to	6.97560	5
B | 174 °C	1410.7	5
C	214.	5
A* | 43 to	1.59048	5
B* | 164 °C	1329.6	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	143.80	5

		Ref.
dt/dP		
°C/mm		
25°C	1.486	5
BP	0.0481	5
t_e	0.0365	5
30 mm	0.6755	5
ΔHm cal/g		
ΔHv cal/g		
25°C	60.06	5
30 mm	58.22	5
BP	49.52	5
t_e	48.30	5
t_e (d, e)	48.20	5
$\Delta Hv/T_e$	19.45	5
d | 43 to	62.43	5
e | 164 °C	0.0989	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0038	5
30 mm	1.0000	5
BP	0.9417	5
t_e	0.9302	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.		

		Ref.
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	32.92	5
σ 30	31.60	5
40	30.31	5
Parachor [P]		
20°C		
30		
40		
Sugd.	261.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 74

NAME	1, 1, 2, 2-Tetrachloroethane	STRUCTURAL FORMULA
		$CHCl_2CHCl_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_2Cl_4$	Molecular Weight 167.864

		Ref.
F.P. °C	-43.8	3
F.P. 100%		
B.P. °C		
760 mm	146.2	3
100	83.1	5
30	55.1	5
10	33.9	5
1	-1.2	5
Pressure		
mm 25°C	5.95	5
t_e	1120.0	5
Density		
g/ml 20°C	1.5953	3
d_4^t 25	1.5876	3
30		
a	1.6261	5
b	-0.00154	5
Ref. Index		
n_D 20°C	1.4940	3
25	1.4910	3
30		
"C"	0.4078	4
MR (Obs.)	30.633	4
MR (Calc.)	30.904	5
(nD-d/2)		
Dielectric		
A | 55 to	6.98240	5
B | 191 °C	1465.1	5
C	211.	5
A* | 55 to	1.58593	5
B* | 181 °C	1382.5	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	161.50	5

		Ref.
dt/dP		
°C/mm		
25°C	2.776	5
BP	0.0498	5
t_e	0.0367	5
30 mm	0.6998	5
ΔHm cal/g		
ΔHv cal/g		
25°C	64.06	5
30 mm	60.76	5
BP	51.51	5
t_e	50.09	5
t_e (d, e)	49.95	5
$\Delta Hv/T_e$	19.34	5
d | 55 to	66.36	5
e | 181 °C	0.1016	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0051	5
30 mm	1.0000	5
BP	0.9392	5
t_e	0.9262	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.		

		Ref.
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	37.85	5
γ 30	36.41	5
40	35.00	5
Parachor [P]		
20°C		
30		
40		
Sugd.	261.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE II. CHLOROALKANES

No. 75

NAME	1, 1, 1, 2-Tetrachloropropane		STRUCTURAL FORMULA $CH_3CHClCCl_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_3H_4Cl_4$	Molecular Weight 181.890

		Ref.
F.P. °C	-65.	3
F.P. 100%		
B.P. °C		
760 mm	150.	3
100	86.	5
30	58.	5
10	37.	5
1	1.	5
Pressure		
mm 25°C	5.01	5
t_e	1130.0	5
Density		
g/ml 20°C	1.473	3
d_4^t 25	1.465	3
30		
a	1.5050	5
b	-0.00160	5
Ref. Index		
n_D 20°C	1.4867	3
25	1.4837	3
30		
"C"	0.4355	4
MR (Obs.)	35.496	4
MR (Calc.) (nD-d/2)	35.522	5
Dielectric		
A | 58 to	6.98072	5
B | 196 °C	1476.0	5
C	210.	5
A* | 58 to	1.61653	5
B* | 186 °C	1393.2	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	165.79	5

		Ref.
dt/dP °C/mm		
25°C	3.242	5
BP	0.0502	5
t_e	0.0368	5
30 mm	0.7054	5
ΔHm cal/g		
ΔHv cal/g		
25°C	60.07	5
30 mm	56.67	5
BP	47.94	5
t_e	46.57	5
t_e (d, e)	46.44	5
$\Delta Hv/T_e$	19.30	5
d | 58 to	62.19	5
e | 186 °C	0.0950	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0051	5
30 mm	1.0000	5
BP	0.9387	5
t_e	0.9253	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.		

		Ref.
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	34.84	5
σ 30	33.34	5
40	31.90	5
Parachor [P]		
20°C		
30		
40		
Sugd.	300.0	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 1

NAME	Bromomethane	STRUCTURAL FORMULA
		CH_3Br

Mole % Pur.	Ref.	Molecular Formula CH_3Br	Molecular Weight 94.950

		Ref.
F.P. °C	-93.6	3
F.P. 100%		
B.P. °C 760 mm	3.56	3
100	-39.40	5
30	-58.37	5
10	-72.78	5
1	-96.56	5
Pressure mm 25°C	1632.7	5
t_e	739.2	5
Density g/ml 20°C	1.6755[a]	3
d_4^t 25	1.6617[a]	3
30		
a	1.7332	5
b	-0.00250	5
Ref. Index n_D 20°C	1.4218[a]	3
25	1.4187[a]	3
30		
"C"	0.3347	4
MR (Obs.)	14.395	4
MR (Calc.) (nD-d/2)	14.583	5
Dielectric		
A | -58 to	6.95965	3
B | 33 °C	986.590	3
C	238.32	3
A* | -58 to	1.44624	5
B* | 23 °C	921.09	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	2.85	5

		Ref.
dt/dP °C/mm		
25°C	0.0187	5
BP	0.0339	5
t_e	0.0346	5
30 mm	0.4752	5
ΔHm cal/g		
ΔHv cal/g		
25°C	56.95	5
30 mm	67.72	5
BP	59.71	5
t_e	59.80	5
t_e (d, e)	59.80	5
$\Delta Hv/T_e$	20.57	5
d | -58 to	60.17	5
e | 23 °C	0.1294	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9393	5
30 mm	1.0000	5
BP	0.9620	5
t_e	0.9627	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.		

		Ref.
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	22.51	5
σ 30	20.91	5
40	19.33	5
Parachor [P] 20°C		
30		
40		
Sugd.	124.1	5
Exp. L.1.%/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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 2

NAME	Bromoethane	STRUCTURAL FORMULA
		CH_3CH_2Br

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	C_2H_5Br	108.976

		Ref.
F.P. °C	-118.6	3
F.P. 100%		
B.P. °C		
760 mm	38.35	3
100	-10.00	5
30	-31.30	5
10	-47.45	5
1	-74.08	5
Pressure mm 25°C	468.6	5
t_e	833.4	5
Density g/ml 20°C	1.4605	3
d^t_4 25	1.4505	3
30		
a	1.5010	5
b	-0.00191	5
Ref. Index n_D 20°C	1.4239	3
25	1.4212	3
30		
"C"	0.3857	4
MR (Obs.)	19.036	4
MR (Calc.) (nD-d/2)	19.201	5
Dielectric		
A | -31 to	6.91995	3
B | 71 °C	1090.810	3
C	231.71	3
A* | -31 to	1.42855	5
B* | 61 °C	1020.61	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	41.05	5

		Ref.
dt/dP °C/mm		
25°C	0.0560	5
BP	0.0382	5
t_e	0.0355	5
30 mm	0.5330	5
ΔHm cal/g		
ΔHv cal/g		
25°C	59.70	5
30 mm	66.69	5
BP	58.07	5
t_e	57.74	5
t_e (d, e)	57.73	5
$\Delta Hv/T_e$	20.03	5
d | -31 to	62.82	5
e | 61 °C	0.1238	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9681	5
30 mm	1.0000	5
BP	0.9559	5
t_e	0.9533	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	22.68	5
γ 30	21.40	5
40	20.13	5
Parachor [P]		
20°C		
30		
40		
Sugd.	163.1	5
Exp. L.1.%/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

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In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 3

NAME	1-Bromopropane	STRUCTURAL FORMULA
		$CH_2BrCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_7Br	Molecular Weight 123.002

		Ref.
F. P. °C	-110.0	3
F. P. 100%		
B. P. °C 760 mm	71.00	3
100	17.82	5
30	-5.60	5
10	-23.35	5
1	-52.60	5
Pressure mm 25°C	138.3	5
t_e	921.3	5
Density g/ml 20°C	1.3537	3
d_4^t 25	1.3452	3
30		
a	1.3878	5
b	-0.00167	5
Ref. Index n_D 20°C	1.4343	3
25	1.4317	3
30		
"C"	0.4258	4
MR (Obs.)	23.677	4
MR (Calc.) (nD-d/2)	23.819	5
Dielectric		
A | -6 to	6.91065	3
B | 107 °C	1194.889	3
C	225.51	3
A* | -6 to	1.43995	5
B* | 97 °C	1120.49	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	77.28	5

		Ref.
dt/dP °C/mm		
25°C	0.1649	5
BP	0.0420	5
t_e	0.0362	5
30 mm	0.5859	5
ΔHm cal/g		
ΔHv cal/g		
25°C	62.10	5
30 mm	65.79	5
BP	56.73	5
t_e	56.01	5
t_e (d, e)	55.98	5
$\Delta Hv/T_e$	19.66	5
d | -6 to	65.12	5
e | 97 °C	0.1183	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9869	5
30 mm	1.0000	5
BP	0.9507	5
t_e	0.9449	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.		

			Ref.
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		24.42	5
σ 30		23.19	5
40		21.98	5
Parachor [P] 20°C			
30			
40			
Sugd.		202.1	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			

+ grams/100 grams solvent

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-Bromobutane	STRUCTURAL FORMULA
		$CH_2BrCH_2CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Br	Molecular Weight 137.028

		Ref.
F.P. °C	-112.4	3
F.P. 100%		
B.P. °C		
760 mm	101.60	3
100	44.11	5
30	18.78	5
10	-0.43	5
1	-32.11	5
Pressure		
mm 25°C	41.27	5
t_e	1002.6	5
Density		
g/ml 20°C	1.2758	3
d^t_4 25	1.2687	3
30		
a	1.3042	5
b	-0.00141	5
Ref. Index		
n_D 20°C	1.4401	3
25	1.4378	3
30		
"C"	0.4574	4
MR (Obs.)	28.312	4
MR (Calc.)	28.437	5
(nD-d/2)		
Dielectric		
A | 19 to	6.92254	3
B |141 °C	1298.608	3
C	219.70	3
A* | 19 to	1.47237	5
B* |131 °C	1220.68	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	111.46	5

		Ref.
dt/dP		
°C/mm		
25°C	0.4853	5
BP	0.0454	5
t_e	0.0366	5
30 mm	0.6340	5
ΔHm cal/g		
ΔHv cal/g		
25°C	64.24	5
30 mm	64.97	5
BP	55.56	5
t_e	54.51	5
t_e (d, e)	54.44	5
$\Delta Hv/T_e$	19.42	5
d | 19 to	67.10	5
e | 131 °C	0.1136	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9980	5
30 mm	1.0000	5
BP	0.9457	5
t_e	0.9369	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity		
centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	25.37	5
γ 30	24.25	5
40	23.15	5
Parachor [P]		
20°C		
30		
40		
Sugd.	241.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 5

NAME	1-Bromopentane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_3CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.			Ref.			Ref.
F.P. °C	-87.9	3	dt/dP °C/mm			f / g / h	to °K	
F.P. 100%			25°C	1.409	5			
B.P. °C			BP	0.0482	5	f' / g' / h'	to °K	
760 mm	129.58	3	t_e	0.0367	5			
100	68.45	5	30 mm	0.6760	5			
30	41.45	5	ΔHm cal/g			m / n / o	to °K	
10	20.96	5						
1	-12.87	5	ΔHv cal/g			m' / n' / o'	to °K	
Pressure mm 25°C	12.60	5	25°C	66.10	5			
t_e	1076.7	5	30 mm	64.19	5	Surface tension dynes/cm. 20°C	26.03	5
Density g/ml 20°C	1.2182	3	BP	54.57	5	γ 30	24.97	5
d_4^t 25	1.2119	3	t_e	53.22	5	40	23.93	5
30			t_e (d, e)	53.12	5			
			ΔHv/T_e	19.33	5	Parachor [P] 20°C		
a	1.2434	5	d / e 41 to 163 °C	68.72	5	30		
b	-0.00126	5		0.1092	5	40		
Ref. Index n_D 20°C	1.4443	3	d' / e' to °C			Sugd.	280.1	5
25	1.4420	3						
30			d_c g/ml			Exp. L. 1. %/wt. u.		
"C"	0.4834	4	v_c ml/g			Dispersion		
MR (Obs.)	32.957	4	t_c °C					
MR (Calc.) (nD-d/2)	33.055	5	P_c mm			Flash Point °C		
						Fire Point		
Dielectric			PV/RT					
A / B 41 to 173 °C	6.95580	3	25°C	1.0036	5	M. Spec.		
B / 173 °C	1401.634	3	30 mm	1.0000	5	Ultra V.		
C	214.38	3	BP	0.9418	5	X-Ray Dif.		
			t_e	0.9303	5	Infrared		
A* / B* 41 to 163 °C	1.52537	5	t_c					
	1320.57	5	ΔHc kcal/m			Solubility in +		
K			ΔHf			Acetone		
c			ΔFf			Carbon tet.		
t_k / t_x to °C						Benzene		
			Viscosity centistokes			Ether		
A' / B' to °C			η °C			n-Heptane		
C'						Ethanol		
			B^v / A^v to °C			Water		
A'* / B'* to °C						Water in		
			(B^v) / (A^v) to °C					
Ac / Bc / Cc t_c °C								
			c_p liq. °K					
Cryos. A° consts. B°			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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 6

NAME	1-Bromohexane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_4CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}Br$	Molecular Weight 165.080

		Ref.
F.P. °C	-84.7	3
F.P. 100%		
B.P. °C		
760 mm	155.3	3
100	91.1	5
30	62.6	5
10	41.0	5
1	5.2	5
Pressure mm 25°C	3.90	5
t_e	1144.1	5
Density g/ml 20°C	1.1744	3
d_4^t 25	1.1687	3
30		
a	1.1972	5
b	-0.00114	5
Ref. Index		
n_D 20°C	1.4475	3
25	1.4454	3
30		
"C"	0.5048	4
MR (Obs.)	37.594	4
MR (Calc.) (nD-d/2)	37.673	5
Dielectric		
A | 63 to	7.0023	3
B |202 °C	1503.52	3
C	209.5	3
A* | 63 to	1.5915	5
B* |192 °C	1419.83	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	171.73	5

		Ref.
dt/dP °C/mm		
25°C	4.076	5
BP	0.0506	5
t_e	0.0367	5
30 mm	0.7130	5
ΔHm cal/g		
ΔHv cal/g		
25°C	67.72	5
30 mm	63.44	5
BP	53.67	5
t_e	52.07	5
t_e (d, e)	51.93	5
$\Delta Hv/T_e$	19.32	5
d | 63 to	70.04	5
e | 192 °C	0.1054	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0052	5
30 mm	1.0000	5
BP	0.9382	5
t_e	0.9243	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		26.56	5
γ 30		25.54	5
40		24.55	5
Parachor [P]			
20°C			
30			
40			
Sugd.		319.1	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 7

NAME	1-Bromoheptane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_5CH_3$

Mole % Pur.	Ref.	Molecular Formula $C_7H_{15}Br$	Molecular Weight 179.106
	3		

		Ref.
F.P. °C	-56.1	3
F.P. 100%		
B.P. °C 760 mm	178.9	3
100	112.1	5
30	82.4	5
10	59.7	5
1	22.2	5
Pressure mm 25°C	1.22	5
t_e	1205.2	5
Density g/ml 20°C	1.1400	3
d_4^t 25	1.1347	3
30		
a	1.1612	5
b	-0.00106	5
Ref. Index n_D 20°C	1.4502	3
25	1.4481	3
30		
"C"	0.5230	4
MR (Obs.)	42.238	4
MR (Calc.) (nD-d/2)	42.291	5
Dielectric		
A | 82 to	7.0582	3
B | 228 °C	1603.71	3
C	205.0	3
A* | 82 to	1.6669	5
B* | 218 °C	1517.90	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	198.23	5

		Ref.
dt/dP °C/mm		
25°C	11.76	5
BP	0.0525	5
t_e	0.0365	5
30 mm	0.7453	5
ΔHm cal/g		
ΔHv cal/g		
25°C	69.16	5
30 mm	62.70	5
BP	52.83	5
t_e	51.02	5
t_e (d, e)	50.85	5
$\Delta Hv/T_e$	19.38	5
d | 82 to	71.11	5
e | 218 °C	0.1022	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0045	5
30 mm	1.0000	5
BP	0.9350	5
t_e	0.9189	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.		

			Ref.
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		26.99	5
σ 30		26.00	5
40		25.03	5
Parachor [P] 20°C			
30			
40			
Sugd.		358.1	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 8

NAME	1-Bromooctane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_6CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{17}Br$	Molecular Weight 193.132

		Ref.
F.P. °C	-55.0	3
F.P. 100%		
B.P. °C		
760 mm	200.8	3
100	131.7	5
30	100.9	5
10	77.3	5
1	38.3	5
Pressure		
mm 25°C	0.38	5
t_e	1261.3	5
Density		
g/ml 20°C	1.1122	3
d_4^{t} 25	1.1072	3
30		
a	1.1322	5
b	-0.00100	5
Ref. Index		
n_D 20°C	1.4524	3
25	1.4503	3
30		
"C"	0.5385	4
MR (Obs.)	46.881	4
MR (Calc.)	46.909	5
(nD-d/2)		
Dielectric		
A | 101 to	7.1179	3
B | 253 °C	1701.61	3
C	200.8	3
A* | 101 to	1.7458	5
B* | 243 °C	1614.07	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	222.79	5

		Ref.
dt/dP		
°C/mm		
25°C	34.07	5
BP	0.0542	5
t_e	0.0363	5
30 mm	0.7742	5
ΔHm cal/g		
ΔHv cal/g		
25°C	70.44	5
30 mm	61.96	5
BP	52.02	5
t_e	50.03	5
t_e (d, e)	49.84	5
$\Delta Hv/T_e$	19.48	5
d | 101 to	71.98	5
e | 243 °C	0.0994	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0022	5
30 mm	1.0000	5
BP	0.9319	5
t_e	0.9141	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	27.35	5
γ 30	26.38	5
40	25.43	5
Parachor [P]		
20°C		
30		
40		
Sugd.	397.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 9

NAME	1-Bromononane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_7CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{19}Br$	Molecular Weight 207.158

		Ref.
F.P. °C	-29.0	3
F.P. 100%		
B.P. °C 760 mm	221.4	3
100	150.3	5
30	118.4	5
10	94.0	5
1	53.5	5
Pressure mm 25°C	0.12	5
t_e	1313.7	5
Density g/ml 20°C	1.0893	3
d_4^{t} 25	1.0845	3
30		
a	1.1085	5
b	-0.03960	5
Ref. Index n_D 20°C	1.4542	3
25	1.4522	3
30		
"C"	0.5519	4
MR (Obs.)	51.520	4
MR (Calc.) (nD-d/2)	51.527	5
Dielectric		
A | 118 to	7.1761	3
B | 276 °C	1796.73	3
C	196.9	3
A* | 118 to	1.8224	5
B* | 266 °C	1707.90	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	245.95	5

		Ref.
dt/dP		
°C/mm		
25°C	99.37	5
BP	0.0557	5
t_e	0.0361	5
30 mm	0.8009	5
ΔHm cal/g		
ΔHv cal/g		
25°C	71.58	5
30 mm	61.19	5
BP	51.27	5
t_e	49.07	5
t_e (d, e)	48.91	5
$\Delta Hv/T_e$	19.58	5
d | 118 to	72.60	5
e | 266 °C	0.0963	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9989	5
30 mm	1.0000	5
BP	0.9301	5
t_e	0.9096	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.		

			Ref.
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		27.65	5
σ 30		26.69	5
40		25.75	5
Parachor [P]			
20°C			
30			
40			
Sugd.		436.1	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 10

NAME	1-Bromodecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_8CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{21}Br$	Molecular Weight 221.184

		Ref.
F.P. °C	-29.2	3
F.P. 100%		
B.P. °C		
760 mm	240.6	3
100	167.6	5
30	134.8	5
10	109.7	5
1	67.8	5
Pressure mm 25°C	0.04	5
t_e	1361.8	5
Density g/ml 20°C	1.0702	3
d_4^{t} 25	1.0656	3
30		
a	1.0886	5
b	-0.0_3920	5
Ref. Index		
n_D 20°C	1.4557	3
25	1.4538	3
30		
"C"	0.5635	4
MR (Obs.)	56.149	4
MR (Calc.) (nD-d/2)	56.145	5
Dielectric		
A | 135 to	7.2336	3
B | 297 °C	1888.67	3
C	193.3	3
A* | 135 to	1.8980	5
B* | 287 °C	1798.48	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	267.41	5

		Ref.
dt/dP		
°C/mm		
25°C	287.0	5
BP	0.0570	5
t_e	0.0358	5
30 mm	0.8251	5
ΔHm cal/g		
ΔHv cal/g		
25°C	72.53	5
30 mm	60.39	5
BP	50.42	5
t_e	48.13	5
t_e (d, e)	47.89	5
$\Delta Hv/T_e$	19.69	5
d | 135 to	73.09	5
e | 287 °C	0.0942	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9952	5
30 mm	1.0000	5
BP	0.9266	5
t_e	0.9055	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^V | to		
A^V | °C		
(B^V) |		
(A^V) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	27.92	5
30	26.98	5
40	26.05	5
Parachor [P]		
20°C		
30		
40		
Sugd.	475.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 11

NAME	1-Bromoundecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_9CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{11}H_{23}Br$	Molecular Weight 235.210

		Ref.
F.P. °C	-9.7	3
F.P. 100%		
B.P. °C 760 mm	258.8	3
100	184.1	5
30	150.4	5
10	124.6	5
1	81.5	5
Pressure mm 25°C	0.01	5
t_e	1407.3	5
Density g/ml 20°C	1.0539	3
d_4^{t} 25	1.0494	3
30		
a	1.0719	5
b	-0.03900	5
Ref. Index n_D 20°C	1.4571	3
25	1.4552	3
30		
"C"	0.5739	4
MR (Obs.)	60.794	4
MR (Calc.) (nD-d/2)	60.763	5
Dielectric		
A | 150 to	7.2882	3
B | 318 °C	1977.14	3
C	189.8	3
A* | 150 to	1.9699	5
B* | 308 °C	1885.99	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	287.79	5

		Ref.
dt/dP		
°C/mm		
25°C	835.9	5
BP	0.0582	5
t_e	0.0356	5
30 mm	0.8476	5
ΔHm cal/g		
ΔHv cal/g		
25°C	73.43	5
30 mm	59.60	5
BP	49.63	5
t_e	47.22	5
t_e (d, e)	46.97	5
$\Delta Hv/T_e$	19.80	5
d | 150 to	73.43	5
e | 308 °C	0.0920	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9910	5
30 mm	1.0000	5
BP	0.9242	5
t_e	0.9017	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.		

		Ref.
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	28.16	5
σ 30	27.21	5
40	26.28	5
Parachor [P] 20°C		
30		
40		
Sugd.	514.1	5
Exp. L.1.%/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

NAME	1-Bromododecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{10}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{12}H_{25}Br$	Molecular Weight 249.236

		Ref.
F.P. °C	-9.5	3
F.P. 100%		
B.P. °C		
760 mm	275.9	3
100	199.6	5
30	165.2	5
10	138.7	5
1	94.4	5
Pressure mm 25°C		
t_e	1449.3	5
Density g/ml 20°C		
d_4^{25}	1.0399	3
d_4^{30}	1.0355	3
a	1.0575	5
b	-0.03880	5
Ref. Index n_D 20°C	1.4583	3
25	1.4564	3
30		
"C"	0.5830	4
MR (Obs.)	65.435	4
MR (Calc.) (nD-d/2)	65.381	5
Dielectric		
A | 165 to	7.3390	3
B | 327 °C	2061.93	3
C	186.6	3
A* | 165 to	2.0379	5
B* | 327 °C	1970.10	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	306.94	5

		Ref.
dt/dP °C/mm		
25°C	2398.	5
BP	0.0593	5
t_e	0.0354	5
30 mm	0.8687	5
ΔHm cal/g		
ΔHv cal/g		
25°C	74.20	5
30 mm	58.76	5
BP	48.82	5
t_e	46.29	5
t_e (d, e)	46.03	5
$\Delta Hv/T_e$	19.89	5
d | 165 to	73.58	5
e | 327 °C	0.0897	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9872	5
30 mm	1.0000	5
BP	0.9220	5
t_e	0.8980	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h |			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		28.36	5
γ 30		27.41	5
40		26.49	5
Parachor [P]			
20°C			
30			
40			
Sugd.		553.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 13

NAME	1-Bromotridecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{11}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{13}H_{27}Br$	Molecular Weight 263.262

		Ref.
F.P. °C	+6.2	3
F.P. 100%		
B.P. °C 760 mm	292.	3
100	214.	5
30	179.	5
10	152.	5
1	106.	5
Pressure mm 25°C t_e	1487.8	5
Density g/ml 20°C	1.0277	3
d_4^{t} 25	1.0234	3
30		
a	1.0449	5
b	-0.0_3860	5
Ref. Index n_D 20°C	1.4593	3
25	1.4574	3
30		
"C"	0.5911	4
MR (Obs.)	70.069	4
MR (Calc.) (nD-d/2)	69.998	5
Dielectric		
A | 179 to	7.386	3
B | 355 °C	2143.0	3
C	184.	3
A* | 179 to	2.101	5
B* | 345 °C	2050.5	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	324.61	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0603	5
t_e	0.0352	5
30 mm	0.8885	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	57.79	5
BP	47.62	5
t_e	45.31	5
t_e (d, e)	44.70	5
$\Delta Hv/T_e$	19.96	5
d | 179 to	73.83	5
e | 345 °C	0.0897	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	0.9130	5
t_e	0.8946	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.		

			Ref.
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		28.54	5
γ 30		27.60	5
40		26.68	5
Parachor [P]			
20°C			
30			
40			
Sugd.		592.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 14

NAME	1-Bromotetradecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{12}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{14}H_{29}Br$	Molecular Weight 277.288

		Ref.
F.P. °C	5.6	3
F.P. 100%		
B.P. °C		
760 mm	307.	3
100	228.	5
30	192.	5
10	164.	5
1	118.	5
Pressure mm 25°C		
t_e	1525.4	5
Density g/ml 20°C	1.0170	3
d_4^t 25	1.0129	3
30		
a	1.0334	5
b	-0.0_3820	5
Ref. Index		
n_D 20°C	1.4603	3
25	1.4584	3
30		
"C"	0.5986	4
MR (Obs.)	74.719	4
MR (Calc.) (nD-d/2)	74.617	5
Dielectric		
A 192 to	7.430	3
B 372 °C	2220.2	3
C	181.	3
A* 192 to	2.161	5
B* 362 °C	2127.3	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	341.81	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0613	5
t_e	0.0351	5
30 mm	0.9070	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	56.96	5
BP	47.17	5
t_e	44.44	5
t_e (d, e)	44.21	5
$\Delta Hv/T_e$	20.04	5
d 192 to	73.29	5
e 362 °C	0.0851	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	0.9187	5
t_e	0.8915	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°		
h			
f'	to		
g'	°		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm.	20°C	28.70	5
γ	30	27.79	5
	40	26.90	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	631.1	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
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TABLE III. BROMOALKANES

No. 15

NAME	1-Bromopentadecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{13}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{15}H_{31}Br$	Molecular Weight 291.314

		Ref.
F.P. °C	19.0	3
F.P. 100%		
B.P. °C 760 mm	322.	3
100	241.	5
30	205.	5
10	177.	5
1	129.	5
Pressure mm 25°C t_e	1560.4	5
Density g/ml 20°C	1.0075	3
d_4^t 25	1.0035	3
30		
a	1.0235	5
b	-0.0_3800	5
Ref. Index n_D 20°C	1.4611	3
25	1.4592	3
30		
"C"	0.6052	4
MR (Obs.)	79.357	4
MR (Calc.) (nD-d/2)	79.235	5
Dielectric		
A | 205 to	7.470	3
B | 388 °C	2293.8	3
C	178.	3
A* | 205 to	2.217	5
B* | 378 °C	2200.9	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	358.34	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0622	5
t_e	0.0349	5
30 mm	0.9246	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	56.15	5
BP	46.19	5
t_e	43.56	5
t_e (d, e)	43.10	5
$\Delta Hv/T_e$	20.10	5
d | 205 to	73.54	5
e | 378 °C	0.0849	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	0.9121	5
t_e	0.8881	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.		

		Ref.
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	28.85	5
σ 30	27.94	5
40	27.06	5
Parachor [P] 20°C		
30		
40		
Sugd.	670.1	5
Exp. L.1.%/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

No. 16

NAME	1-Bromohexadecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{14}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{33}Br$	Molecular Weight 305.340

		Ref.
F.P. °C	17.9	3
F.P. 100%		
B.P. °C 760 mm	336.	3
100	254.	5
30	217.	5
10	188.	5
1	140.	5
Pressure mm 25°C t_e	1594.9	5
Density g/ml 20°C	0.9991	3
d_4^t 25 30	0.9951	3
a	1.0151	5
b	-0.0_3800	5
Ref. Index n_D 20°C	1.4618	3
25	1.4600	3
30		
"C"	0.6112	4
MR (Obs.)	83.987	4
MR (Calc.) (nD-d/2)	83.853	5
Dielectric		
A | 217 to	7.506	3
B | 404 °C	2364.0	3
C	175.	3
A* | 217 to	2.268	5
B* | 394 °C	2271.0	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	374.35	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0631	5
t_e	0.0348	5
30 mm	0.9415	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	55.36	5
BP	45.68	5
t_e	42.73	5
t_e (d, e)	42.56	5
$\Delta Hv/T_e$	20.15	5
d | 217 to	73.04	5
e | 394 °C	0.0814	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	0.9161	5
t_e	0.8853	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h			
f' | to			
g' | °			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm. 20°C		28.98	5
γ 30		28.06	5
40		27.17	5
Parachor [P] 20°C			
30			
40			
Sugd.		709.1	5
Exp. L.1.%/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

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TABLE III. BROMOALKANES

No. 17

NAME	1-Bromoheptadecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{15}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{17}H_{35}Br$	Molecular Weight 319.366

		Ref.
F. P. °C	29.6	3
F. P. 100%		
B. P. °C 760 mm	349.	3
100	266.	5
30	228.	5
10	199.	5
1	149.	5
Pressure mm 25°C t_e	1624.7	5
Density g/ml 20°C	0.9916[b]	3
d_4^{t} 25 30	0.9876[b]	3
a	1.0076	5
b	-0.0_3800	5
Ref. Index n_D 20°C	1.4625[b]	3
25	1.4606[b]	3
30		
"C"	0.6167	4
MR (Obs.)	88.625	4
MR (Calc.) (nD-d/2)	88.471	5
Dielectric		
A | 228 to	7.540	3
B | 419 °C	2430.9	3
C	173.	3
A* | 228 to	2.317	5
B* | 409 °C	2337.7	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	388.51	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0640	5
t_e	0.0347	5
30 mm	0.9573	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	54.38	5
BP	44.49	5
t_e	41.79	5
t_e (d, e)	41.26	5
$\Delta Hv/T_e$	20.17	5
d | 228 to	73.00	5
e | 409 °C	0.0817	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	0.9071	5
t_e	0.8826	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.		

		Ref.
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	29.11	5
σ 30	28.18	5
40	27.28	5
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		

[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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 18

NAME	1-Bromooctadecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{16}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{37}Br$	Molecular Weight 333.392

		Ref.
F.P. °C	28.2	3
F.P. 100%		
B.P. °C 760 mm	362.	3
100	278.	5
30	240.	5
10	210.	5
1	160.	5
Pressure mm 25°C t_e	1655.6	5
Density g/ml 20°C	0.9848[b]	3
d_4^t 25	0.9809[b]	3
30		
a	1.0004	5
b	-0.03780	5
Ref. Index n_D 20°C	1.4631[b]	3
25	1.4613[b]	3
30		
"C"	0.6217	4
MR (Obs.)	93.260	4
MR (Calc.) (nD-d/2)	93.089	5
Dielectric		
A | 240 to	7.570	3
B | 433 °C	2495.2	3
C	170.	3
A* | 240 to	2.362	5
B* | 423 °C	2402.5	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	403.47	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0648	5
t_e	0.0346	5
30 mm	0.9730	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	53.65	5
BP	44.07	5
t_e	41.00	5
t_e (d, e)	40.83	5
$\Delta Hv/T_e$	20.20	5
d | 240 to	72.38	5
e | 423 °C	0.0782	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	0.9123	5
t_e	0.8795	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension dynes/cm. 20°C	29.22	5
γ 30	28.31	5
40	27.41	5
Parachor [P] 20°C		
30		
40		
Sugd.	787.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 19

NAME	1-Bromononadecane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{17}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{19}H_{39}Br$	Molecular Weight 347.418

		Ref.
F.P. °C	38.5	3
F.P. 100%		
B.P. °C 760 mm	374.	3
100	289.	5
30	250.	5
10	220.	5
1	169.	5
Pressure mm 25°C t_e	1684.1	5
Density g/ml 20°C	0.9786[b]	3
d_4^{t} 25	0.9748[b]	3
30		
a	0.9938	5
b	-0.03760	5
Ref. Index n_D 20°C	1.4637[b]	3
25	1.4618[b]	3
30		
"C"	0.6264	4
MR (Obs.)	97.908	4
MR (Calc.) (nD-d/2)	97.707	5
Dielectric		
A | 250 to	7.597	3
B | 447 °C	2557.2	3
C	168.	3
A* | 250 to	2.402	5
B* | 437 °C	2464.4	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	417.09	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0657	5
t_e		0.0345	5
30 mm		0.9884	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		52.74	5
BP		43.34	5
t_e		40.14	5
t_e (d, e)		40.07	5
$\Delta Hv/T_e$		20.21	5
d | 250 to		71.68	5
e | 437 °C		0.0758	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		0.9126	5
t_e		0.8770	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.			

		Ref.
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	29.32	5
σ 30	28.42	5
40	27.54	5
Parachor [P] 20°C		
30		
40		
Sugd.	826.1	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		

[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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

NAME	1-Bromoeicosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{18}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{41}Br$	Molecular Weight 361.444

		Ref.
F.P. °C	36.9	3
F.P. 100%		
B.P. °C 760 mm	386.	3
100	300.	5
30	260.	5
10	229.	5
1	177.	5
Pressure mm 25°C t_e	1711.5	5
Density g/ml 20°C	0.9730[b]	3
d_4^{t} 25 30	0.9692[b]	3
a	0.9882	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4643[b]	3
25	1.4624[b]	3
30		
"C"	0.6308	4
MR (Obs.)	102.561	4
MR (Calc.) (nD-d/2)	102.325	5
Dielectric		
A | 260 to	7.621	3
B | 461 °C	2617.5	3
C	166.	3
A* | 260 to	2.440	5
B* | 451 °C	2524.9	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	430.56	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0666	5
t_e	0.0345	5
30 mm	1.0038	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	51.88	5
BP	42.52	5
t_e	39.30	5
t_e (d, e)	39.21	5
$\Delta Hv/T_e$	20.18	5
d | 260 to	71.21	5
e | 451 °C	0.0743	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	0.9102	5
t_e	0.8742	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.		

			Ref.
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		29.41	5
γ 30		28.51	5
40		27.62	5
Parachor [P] 20°C			
30			
40			
Sugd.		865.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 21

NAME	1-Bromoheneicosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{19}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{21}H_{43}Br$	Molecular Weight 375.470

		Ref.
F. P. °C	46.1	3
F. P. 100%		
B. P. °C 760 mm	397.	3
100	308.	5
30	268.	5
10	236.	5
1	183.	5
Pressure mm 25°C t_e	1736.2	5
Density g/ml 20°C	0.9679[a]	3
d_4^{t} 25 30	0.9641[a]	3
a	0.9831	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4648[a]	3
25	1.4629[a]	3
30		
"C"	0.6347	4
MR (Obs.)	107.202	4
MR (Calc.) (nD-d/2)	106.943	5
Dielectric		
A | 268 to	7.56063	5
B | 474 °C	2625.4	5
C	164.	5
A* | 268 to	2.39245	5
B* | 464 °C	2532.6	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	443.58	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0685	5
t_e		0.0352	5
30 mm		1.0269	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		50.20	5
BP		40.83	5
t_e		37.73	5
t_e (d, e)		37.46	5
ΔHv/T_e		19.77	5
d | 268 to		69.58	5
e | 464 °C		0.0724	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		0.9044	5
t_e		0.8707	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.			

		Ref.
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	29.50	5
γ 30	28.59	5
40	27.69	5
Parachor [P] 20°C		
30		
40		
Sugd.	904.1	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 22

NAME	1-Bromodocosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{20}CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{45}Br$ — Molecular Weight 389.496

		Ref.
F.P. °C	44.3	3
F.P. 100%		
B.P. °C 760 mm	408.	3
100	318.	5
30	277.	5
10	245.	5
1	191.	5
Pressure mm 25°C t_e	1761.9	5
Density g/ml 20°C	0.9632[a]	3
d_4^t 25	0.9594[a]	3
30		
a	0.9784	5
b	-0.03760	5
Ref. Index n_D 20°C	1.4652[a]	3
25	1.4633[a]	3
30		
"C"	0.6383	4
MR (Obs.)	111.832	4
MR (Calc.) (nD-d/2)	111.561	5
Dielectric		
A 277 to	7.58180	5
B 486 °C	2679.6	5
C	162.	5
A* 277 to	2.42589	5
B* 476 °C	2586.9	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	456.01	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0693	5
t_e	0.0351	5
30 mm	1.0409	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	49.42	5
BP	40.12	5
t_e	36.98	5
t_e (d, e)	36.72	5
$\Delta Hv/T_e$	19.75	5
d 277 to	69.06	5
e 476 °C	0.0709	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	0.9031	5
t_e	0.8685	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.		

			Ref.
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	29.59	5
γ	30	28.66	5
	40	27.76	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	943.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 23

NAME	1-Bromotricosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{21}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{23}H_{47}Br$	Molecular Weight 403.522

		Ref.
F.P. °C	52.7	3
F.P. 100%		
B.P. °C 760 mm	418.	3
100	327.	5
30	285.	5
10	253.	5
1	199.	5
Pressure mm 25°C t_e	1784.1	5
Density g/ml 20°C	0.9588[a]	3
d_4^t 25	0.9551[a]	3
30		
a	0.9736	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4656[a]	3
25	1.4638[a]	3
30		
"C"	0.6418	4
MR (Obs.)	116.476	4
MR (Calc.) (nD-d/2)	116.179	5
Dielectric		
A | 285 to	7.59909	5
B | 497 °C	2727.2	5
C	160.	5
A* | 285 to	2.45624	5
B* | 487 °C	2635.1	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	467.27	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0700	5
t_e	0.0351	5
30 mm	1.0534	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	48.61	5
BP	39.38	5
t_e	36.21	5
t_e (d, e)	35.95	5
$\Delta Hv/T_e$	19.74	5
d | 285 to	68.48	5
e | 487 °C	0.0696	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	0.9014	5
t_e	0.8660	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.		

			Ref.
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		29.65	5
σ 30		28.75	5
40		27.86	5
Parachor [P]			
20°C			
30			
40			
Sugd.		982.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 24

NAME	1-Bromotetracosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{22}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{49}Br$	Molecular Weight 417.548

		Ref.
F.P. °C	50.7	3
F.P. 100%		
B.P. °C		
760 mm	428.	3
100	336.	5
30	294.	5
10	261.	5
1	206.	5
Pressure mm 25°C		
t_e	1806.8	5
Density		
g/ml 20°C	0.9549[a]	3
d_4^t 25	0.9512[a]	3
30		
a	0.9697	5
b	-0.03740	5
Ref. Index		
n_D 20°C	1.4660[a]	3
25	1.4641[a]	3
30		
"C"	0.6449	4
MR (Obs.)	121.107	4
MR (Calc.) (nD-d/2)	120.797	5
Dielectric		
A | 294 to	7.61602	5
B | 509 °C	2774.8	5
C	158.	5
A* | 294 to	2.48528	5
B* | 499 °C	2683.2	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	478.6	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0707	5
t_e	0.0351	5
30 mm	1.0659	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	47.85	5
BP	38.69	5
t_e	35.49	5
t_e (d, e)	35.24	5
$\Delta Hv/T_e$	19.71	5
d | 294 to	67.95	5
e | 499 °C	0.0684	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	0.9001	5
t_e	0.8639	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.		

		Ref.
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	29.74	5
γ 30	28.82	5
40	27.93	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1021.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 25

NAME	1-Bromopentacosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{23}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{25}H_{51}Br$	Molecular Weight 431.574

		Ref.
F.P. °C	58.3	3
F.P. 100%		
B.P. °C 760 mm	437.	3
100	344.	5
30	302.	5
10	269.	5
1	213.	5
Pressure mm 25°C t_e	1826.6	5
Density g/ml 20°C	0.9511[a]	3
d_4^t 25	0.9475[a]	3
30		
a	0.9655	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4664[a]	3
25	1.4645[a]	3
30		
"C"	0.6480	4
MR (Obs.)	125.768	4
MR (Calc.) (nD-d/2)	125.415	5
Dielectric		
A | 302 to	7.62930	5
B | 519 °C	2815.9	5
C	156.	5
A* | 302 to	2.51096	5
B* | 509 °C	2724.8	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	488.71	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0714	5
t_e	0.0351	5
30 mm	1.0770	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	47.07	5
BP	37.98	5
t_e	34.76	5
t_e (d, e)	34.51	5
$\Delta Hv/T_e$	19.69	5
d | 302 to	67.34	5
e | 509 °C	0.0672	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	0.8987	5
t_e	0.8618	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.		

		Ref.
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	29.79	5
σ 30	28.90	5
40	28.03	5
Parachor [P] 20°C		
30		
40		
Sugd.	1060.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 26

NAME	1-Bromohexacosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{24}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{26}H_{53}Br$	Molecular Weight 445.600

		Ref.
F.P. °C	56.4	3
F.P. 100%		
B.P. °C 760 mm	447.	3
100	353.	5
30	310.	5
10	277.	5
1	220.	5
Pressure mm 25°C t_e	1849.2	5
Density g/ml 20°C	0.9477[a]	3
d_4^{t} 25	0.9441[a]	3
30		
a	0.9621	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4667[a]	3
25	1.4648[a]	3
30		
"C"	0.6507	4
MR (Obs.)	130.393	4
MR (Calc.) (nD-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 | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	499.99	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0721	5
t_e	0.0351	5
30 mm	1.0903	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	46.37	5
BP	37.38	5
t_e	34.13	5
t_e (d, e)	33.90	5
$\Delta Hv/T_e$	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	1.0000	5
BP	0.8973	5
t_e	0.8597	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.		

			Ref.
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		29.86	5
γ 30		28.96	5
40		28.08	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1099.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 27

NAME	1-Bromoheptacosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{25}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{27}H_{55}Br$	Molecular Weight 459.626

		Ref.
F. P. °C	63.4	3
F. P. 100%		
B. P. °C 760 mm	456.	3
100	361.	5
30	318.	5
10	284.	5
1	227.	5
Pressure mm 25°C t_e	1869.5	5
Density g/ml 20°C	0.9445[a]	3
d_4^{t} 25 30	0.9409[a]	3
a	0.9589	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4670[a]	3
25	1.4651[a]	3
30		
"C"	0.6533	4
MR (Obs.)	135.027	4
MR (Calc.) (nD-d/2)	134.651	5
Dielectric		
A | 318 to	7.66652	5
B | 540 °C	2914.5	5
C	153.	5
A* | 318 to	2.57022	5
B* | 530 °C	2824.0	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	510.17	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0727	5
t_e	0.0351	5
30 mm	1.1014	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	45.69	5
BP	36.76	5
t_e	33.48	5
t_e (d, e)	33.26	5
$\Delta Hv/T_e$	19.64	5
d | 318 to	66.23	5
e | 530 °C	0.0646	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	0.8962	5
t_e	0.8578	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.		

			Ref.
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		29.92	5
γ 30		29.01	5
40		28.13	5
Parachor [P] 20°C			
30			
40			
Sugd.		1138.1	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 28

NAME	1-Bromooctacosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{26}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{57}Br$	Molecular Weight 473.652

		Ref.
F.P. °C	61.4	3
F.P. 100%		
B.P. °C		
760 mm	464.	3
100	369.	5
30	325.	5
10	291.	5
1	233.	5
Pressure mm 25°C t_e	1887.1	5
Density g/ml 20°C	0.9415[a]	3
d_4^{t} 25	0.9379[a]	3
30		
a	0.9559	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4673[a]	3
25	1.4654[a]	3
30		
"C"	0.6558	4
MR (Obs.)	139.668	4
MR (Calc.) (nD-d/2)	139.269	5
Dielectric		
A | 325 to	7.67582	5
B | 549 °C	2948.9	5
C	151.	5
A* | 325 to	2.59096	5
B* | 539 °C	2859.1	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	519.21	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0733	5
t_e	0.0351	5
30 mm	1.1110	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	44.97	5
BP	36.11	5
t_e	32.80	5
t_e (d, e)	32.59	5
$\Delta Hv/T_e$	19.61	5
d | 325 to	65.64	5
e | 539 °C	0.0637	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	0.8950	5
t_e	0.8560	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.		

		Ref.
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	29.97	5
γ 30	29.06	5
40	28.18	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1177.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 29

NAME	1-Bromononacosane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{27}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{29}H_{59}Br$	Molecular Weight 487.678

		Ref.
F. P. °C	67.8	3
F. P. 100%		
B. P. °C 760 mm	473.	3
100	377.	5
30	332.	5
10	298.	5
1	240.	5
Pressure mm 25°C t_e	1906.7	5
Density g/ml 20°C	0.9387[a]	3
d_4^{t} 25	0.9351[a]	3
30		
a	0.9531	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4676[a]	3
25	1.4657[a]	3
30		
"C"	0.6582	4
MR (Obs.)	144.313	4
MR (Calc.) (nD-d/2)	143.887	5
Dielectric		
A | 332 to	7.69612	5
B | 559 °C	2999.9	5
C	150.	5
A* | 332 to	2.62186	5
B* | 549 °C	2910.5	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	529.36	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0739	5
t_e	0.0350	5
30 mm	1.1229	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	44.33	5
BP	35.55	5
t_e	32.21	5
t_e (d, e)	32.03	5
$\Delta Hv/T_e$	19.58	5
d | 332 to	65.09	5
e | 549 °C	0.0625	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	0.8936	5
t_e	0.8539	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.		

		Ref.
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	30.02	5
σ 30	29.11	5
40	28.22	5
Parachor [P] 20°C		
30		
40		
Sugd.	1216.1	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 30

NAME	1-Bromotriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{28}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{61}Br$	Molecular Weight 501.704

		Ref.
F.P. °C	65.8	3
F.P. 100%		
B.P. °C 760 mm	481.	3
100	384.	5
30	339.	5
10	305.	5
1	246.	5
Pressure mm 25°C t_e	1924.0	5
Density g/ml 20°C	0.9361[a]	3
d_4^{t} 25 30	0.9325[a]	3
a	0.9505	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4679[a]	3
25	1.4660[a]	3
30		
"C"	0.6604	4
MR (Obs.)	148.958	4
MR (Calc.) (nD-d/2)	148.505	5
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 t_c °C		
Cc		
Cryos. A° consts. B°		
t_e °C	538.40	5

			Ref.
dt/dP °C/mm			
25°C BP		0.0745	5
t_e		0.0350	5
30 mm		1.1325	5
ΔHm cal/g			
ΔHv cal/g			
25°C 30 mm		43.69	5
BP		34.96	5
t_e		31.60	5
t_e (d, e)		31.43	5
$\Delta Hv/T_e$		19.54	5
d 339 to		64.59	5
e 558 °C		0.0616	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		0.8521	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.			

			Ref.
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		30.08	5
γ 30		29.16	5
40		28.27	5
Parachor [P] 20°C			
30			
40			
Sugd.		1255.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 31

NAME	1-Bromohentriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{29}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{31}H_{63}Br$	Molecular Weight 515.730

		Ref.
F.P. °C	71.7	3
F.P. 100%		
B.P. °C 760 mm	488.	3
100	390.	5
30	345.	5
10	310.	5
1	251.	5
Pressure mm 25°C t_e	1939.4	5
Density g/ml 20°C	0.9336[a]	3
d_4^t 25	0.9300[a]	3
30		
a	0.9480	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4681[a]	3
25	1.4662[a]	3
30		
"C"	0.6624	4
MR (Obs.)	153.589	4
MR (Calc.) (nD-d/2)	153.123	5
Dielectric		
A | 345 to	7.71074	5
B | 576 °C	3062.2	5
C	146.	5
A* | 345 to	2.65793	5
B* | 566 °C	2974.2	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	546.32	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0750	5
t_e		0.0351	5
30 mm		1.1408	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		43.03	5
BP		34.36	5
t_e		30.98	5
t_e (d, e)		30.82	5
$\Delta Hv/T_e$		19.50	5
d | 345 to		64.00	5
e | 566 °C		0.0607	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		0.8915	5
t_e		0.8506	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.			

			Ref.
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		30.12	5
γ 30		29.20	5
40		28.30	5
Parachor [P] 20°C			
30			
40			
Sugd.		1294.1	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 32

NAME	1-Bromodotriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{30}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{65}Br$	Molecular Weight 529.756

		Ref.
F.P. °C	69.7	3
F.P. 100%		
B.P. °C 760 mm	496.	3
100	397.	5
30	352.	5
10	317.	5
1	257.	5
Pressure mm 25°C t_e	1956.7	5
Density g/ml 20°C	0.9313[a]	3
d_4^{t} 25	0.9277[a]	3
30		
a	0.9457	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4684[a]	3
25	1.4665[a]	3
30		
"C"	0.6645	4
MR (Obs.)	158.242	4
MR (Calc.) (nD-d/2)	157.741	5
Dielectric		
A | 352 to	7.72725	5
B | 585 °C	3106.6	5
C	145.	5
A* | 352 to	2.68429	5
B* | 575 °C	3019.0	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	555.35	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0756	5
t_e	0.0350	5
30 mm	1.1512	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	42.43	5
BP	33.84	5
t_e	30.43	5
t_e (d, e)	30.30	5
$\Delta Hv/T_e$	19.46	5
d | 352 to	63.44	5
e | 575 °C	0.0597	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	0.8903	5
t_e	0.8489	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.		

		Ref.
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	30.17	5
γ 30	29.24	5
40	28.34	5
Parachor [P] 20°C		
30		
40		
Sugd.	1333.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 33

NAME	1-Bromotritriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{31}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{33}H_{67}Br$	Molecular Weight 543.782

		Ref.
F.P. °C	75.3	3
F.P. 100%		
B.P. °C 760 mm	503.	3
100	404.	5
30	358.	5
10	323.	5
1	262.	5
Pressure mm 25°C t_e	1971.1	5
Density g/ml 20°C	0.9291[a]	3
d_4^t 25	0.9255[a]	3
30		
a	0.9435	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4686[a]	3
25	1.4667[a]	3
30		
"C"	0.6663	4
MR (Obs.)	162.876	4
MR (Calc.) (nD-d/2)	162.359	5
Dielectric		
A | 358 to	7.72494	5
B | 593 °C	3124.5	5
C	142.	5
A* | 358 to	2.69299	5
B* | 583 °C	3038.3	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	563.26	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0761	5
t_e	0.0351	5
30 mm	1.1587	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	41.86	5
BP	33.28	5
t_e	29.84	5
t_e (d, e)	29.71	5
$\Delta Hv/T_e$	19.40	5
d | 358 to	63.08	5
e | 583 °C	0.0592	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	0.8891	5
t_e	0.8470	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.		

		Ref.
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	30.21	5
σ 30	29.28	5
40	28.38	5
Parachor [P]. 20°C		
30		
40		
Sugd.	1372.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 34

NAME	1-Bromotetratriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{32}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{67}Br$	Molecular Weight 557.808

		Ref.
F.P. °C	73.3	3
F.P. 100%		
B.P. °C 760 mm	510.	3
100	410.	5
30	364.	5
10	328.	5
1	268.	5
Pressure mm 25°C t_e	1986.5	5
Density g/ml 20°C	0.9270[a]	3
d_4^t 25	0.9235[a]	3
30		
a	0.9410	5
b	-0.03700	5
Ref. Index n_D 20°C	1.4688[a]	3
25	1.4669[a]	3
30		
"C"	0.6681	4
MR (Obs.)	167.517	4
MR (Calc.) (nD-d/2)	166.977	5
Dielectric		
A | 364 to	7.74588	5
B | 601 °C	3172.0	5
C	142.	5
A* | 364 to	2.72295	5
B* | 591 °C	3085.9	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	571.17	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0766	5
t_e		0.0351	5
30 mm		1.1685	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		41.23	5
BP		32.78	5
t_e		29.36	5
t_e (d, e)		29.24	5
$\Delta Hv/T_e$		19.39	5
d | 364 to		62.31	5
e | 591 °C		0.0579	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		0.8882	5
t_e		0.8457	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.			

			Ref.
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		30.24	5
γ 30		29.34	5
40		28.46	5
Parachor [P] 20°C			
30			
40			
Sugd.	1411.1		5
Exp. L.1.%/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. 35

NAME	1-Bromopentatriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{33}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{71}Br$	Molecular Weight 571.834

		Ref.
F.P. °C	78.5	3
F.P. 100%		
B.P. °C 760 mm	517.	3
100	416.	5
30	370.	5
10	334.	5
1	273.	5
Pressure mm 25°C t_e	2001.0	5
Density g/ml 20°C	0.9251[a]	3
d_4^{t} 25 30	0.9215[a]	3
a	0.9395	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4690[a]	3
25	1.4671[a]	3
30		
"C"	0.6697	4
MR (Obs.)	172.145	4
MR (Calc.) (nD-d/2)	171.595	5
Dielectric		
A 370 to	7.75885	5
B 609 °C	3209.8	5
C	141.	5
A* 370 to	2.74566	5
B* 599 °C	3124.3	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	579.06	5

			Ref.
dt/dP °C/mm 25°C			
BP	0.0771		5
t_e	0.0351		5
30 mm	1.1775		5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm	40.66		5
BP	32.27		5
t_e	28.80		5
t_e (d, e)	28.72		5
ΔHv/T_e	19.33		5
d 370 to	61.78		5
e 599 °C	0.0571		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	0.8871		5
t_e	0.8439		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.			

			Ref.
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	5
γ 30		29.36	5
40		28.45	5
Parachor [P] 20°C			
30			
40			
Sugd.		1450.1	5
Exp. L.1.%/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

No. 36

NAME	1-Bromohexatriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{34}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{73}Br$	Molecular Weight 585.860

		Ref.
F.P. °C	76.5	3
F.P. 100%		
B.P. °C 760 mm	524.	3
100	423.	5
30	376.	5
10	340.	5
1	278.	5
Pressure mm 25°C t_e	2016.1	5
Density g/ml 20°C	0.9232[a]	3
$d_4^{t\ -25}$ 30	0.9197[a]	3
a	0.9372	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4692[a]	3
25	1.4673[a]	3
30		
"C"	0.6714	4
MR (Obs.)	176.795	4
MR (Calc.) (nD-d/2)	176.213	5
Dielectric		
A | 376 to	7.76401	5
B | 617 °C	3237.6	5
C	139.	5
A* | 376 to	2.76017	5
B* | 607 °C	3152.9	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	586.99	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0776	5
t_e	0.0351	5
30 mm	1.1858	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.15	5
BP	31.81	5
t_e	28.34	5
t_e (d, e)	28.26	5
$\Delta Hv/T_e$	19.30	5
d | 376 to	61.34	5
e | 607 °C	0.0564	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	0.8861	5
t_e	0.8424	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.		

			Ref.
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		30.32	5
γ 30		29.41	5
40		28.52	5
Parachor [P] 20°C			
30			
40			
Sugd.		1489.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 37

NAME	1-Bromoheptatriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{35}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{75}Br$	Molecular Weight 599.886

		Ref.
F. P. °C	81.4	3
F. P. 100%		
B. P. °C 760 mm	531.	3
100	429.	5
30	382.	5
10	345.	5
1	283.	5
Pressure mm 25°C t_e	2031.2	5
Density g/ml 20°C	0.9214[a]	3
d_4^t 25	0.9179[a]	3
30		
a	0.9354	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4694[a]	3
25	1.4675[a]	3
30		
"C"	0.673	4
MR (Obs.)	181.448	4
MR (Calc.) (nD-d/2)	180.831	5
Dielectric		
A | 382 to	7.77670	5
B | 625 °C	3275.4	5
C	138.	5
A* | 382 to	2.78162	5
B* | 615 °C	3191.2	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	594.91	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0781	5
t_e	0.0351	5
30 mm	1.1948	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.63	5
BP	31.36	5
t_e	27.87	5
t_e (d, e)	27.81	5
$\Delta Hv/T_e$	19.26	5
d | 382 to	60.83	5
e | 615 °C	0.0555	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	0.8852	5
t_e	0.8410	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.		

			Ref.
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		30.35	5
30		29.44	5
40		28.54	5
Parachor [P] 20°C			
30			
40			
Sugd.		1528.1	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

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In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 38

NAME	1-Bromooctatriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{36}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{77}Br$	Molecular Weight 613.912

		Ref.
F.P. °C	79.4	3
F.P. 100%		
B.P. °C		
760 mm	537.	3
100	434.	5
30	387.	5
10	350.	5
1	288.	5
Pressure mm 25°C		
t_e	2043.6	5
Density		
g/ml 20°C	0.9198[a]	3
d_4^{t} 25	0.9163[a]	3
30		
a	0.9338	5
b	-0.0_3700	5
Ref. Index		
n_D 20°C	1.4696[a]	3
25	1.4677[a]	3
30		
"C"	0.6744	4
MR (Obs.)	186.081	4
MR (Calc.) (nD-d/2)	185.449	5
Dielectric		
A 387 to	7.78637	5
B 632 °C	3306.3	5
C	137.	5
A* 387 to	2.80043	5
B* 622 °C	3222.8	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	601.69	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0785	5
t_e		0.0351	5
30 mm		1.2024	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		39.09	5
BP		30.88	5
t_e		27.38	5
t_e (d, e)		27.35	5
$\Delta Hv/T_e$		19.22	5
d 387 to		60.26	5
e 622 °C		0.0547	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		0.8843	5
t_e		0.8396	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.			

			Ref.
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		30.39	5
30		29.48	5
40		28.58	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1567.1	5
Exp. L.1.%/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

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TABLE III. BROMOALKANES

No. 39

NAME	1-Bromononatriacontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{37}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{39}H_{79}Br$	Molecular Weight 627.938

		Ref.
F. P. °C	84.1	3
F. P. 100%		
B. P. °C 760 mm	543.	3
100	440.	5
30	392.	5
10	355.	5
1	292.	5
Pressure mm 25°C t_e	2056.0	5
Density g/ml 20°C	0.9182[a]	3
d_4^{t} 25 30	0.9147[a]	3
a	0.9322	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4697[a]	3
25	1.4678[a]	3
30		
"C"	0.6757	4
MR (Obs.)	190.699	4
MR (Calc.) (nD-d/2)	190.067	5
Dielectric		
A 392 to	7.79593	5
B 638 °C	3337.4	5
C	136.	5
A* 392 to	2.81893	5
B* 628 °C	3254.5	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	608.47	5

			Ref.
dt/dP °C/mm 25°C			
BP	0.0789		5
t_e	0.0351		5
30 mm	1.2100		5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm	38.56		5
BP	30.43		5
t_e	26.91		5
t_e (d, e)	26.90		5
$\Delta Hv/T_e$	19.17		5
d 392 to	59.71		5
e 628 °C	0.0539		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	0.8833		5
t_e	0.8382		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.			

			Ref.
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	30.42		5
30	29.50		5
40	28.61		5
Parachor [P] 20°C			
30			
40			
Sugd.	1606.1		5
Exp. L. 1. %/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

No. 40

NAME	1-Bromotetracontane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_{38}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{81}Br$	Molecular Weight 641.964

		Ref.
F.P. °C	82.1	3
F.P. 100%		
B.P. °C		
760 mm	549.	3
100	445.	5
30	397.	5
10	360.	5
1	297.	5
Pressure mm 25°C t_e	2068.4	5
Density g/ml 20°C	0.9166[a]	3
d_4^{t} 25 30	0.9132[a]	3
a	0.9302	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4699[a]	3
25	1.4680[a]	3
30		
"C"	0.6772	4
MR (Obs.)	195.371	4
MR (Calc.) (nD-d/2)	194.685	5
Dielectric		
A 397 to	7.80538	5
B 645 °C	3368.4	5
C	135.	5
A* 397 to	2.83714	5
B* 635 °C	3286.2	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	615.24	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0794	5
t_e	0.0351	5
30 mm	1.2176	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.06	5
BP	30.00	5
t_e	26.50	5
t_e (d, e)	26.48	5
$\Delta Hv/T_e$	19.15	5
d 397 to	59.17	5
e 635 °C	0.0531	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	0.8824	5
t_e	0.8368	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.		

		Ref.
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	30.44	5
γ 30	29.55	5
40	28.67	5
Parachor [P] 20°C		
30		
40		
Sugd.	1645.1	5
Exp. L.1.%/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

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TABLE II. BROMOALKANES

No. 41

NAME	2-Bromopropane	STRUCTURAL FORMULA
		$CH_3CHBrCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_7Br	Molecular Weight 123.002

		Ref.
F.P. °C	-89.0	3
F.P. 100%		
B.P. °C 760 mm	59.38	3
100	4.52	5
30	-19.15	5
10	-36.90	5
1	-65.79	5
Pressure mm 25°C	236.3	5
t_e	887.2	5
Density g/ml 20°C	1.3140	3
d_4^t 25	1.3060	3
30		
a	1.3463	5
b	-0.00155	5
Ref. Index n_D 20°C	1.4251	3
25	1.4221	3
30		
"C"	0.4299	4
MR (Obs.)	23.941	4
MR (Calc.) (nD-d/2)	23.819	5
Dielectric		
A | -19 to	6.61405	5
B | 95 °C	1072.9	5
C	228.	5
A* | -19 to	1.15922	5
B* | 85 °C	1000.8	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	64.65	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1096	5
BP	0.0440	5
t_e	0.0391	5
30 mm	0.5886	5
ΔHm cal/g		
ΔHv cal/g		
25°C	54.17	5
30 mm	59.02	5
BP	50.52	5
t_e	49.98	5
t_e (d, e)	49.95	5
$\Delta Hv/T_e$	18.20	5
d | -19 to	56.95	5
e | 85 °C	0.1083	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9786	5
30 mm	1.0000	5
BP	0.9490	5
t_e	0.9440	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.		

			Ref.
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		21.64	5
σ 30		20.56	5
40		19.51	5
Parachor [P]			
20°C			
30			
40			
Sugd.		202.1	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 42

NAME	2-Bromobutane	STRUCTURAL FORMULA
		$CH_3CHBrCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Br	Molecular Weight 137.028

		Ref.
F.P. °C	-111.9	3
F.P. 100%		
B.P. °C		
760 mm	91.22	3
100	33.10	5
30	7.79	5
10	-11.29	5
1	-42.52	5
Pressure mm 25°C	69.88	5
t_e	973.7	5
Density g/ml 20°C	1.2585	3
d^t_4 25	1.2510	3
30		
a	1.2885	5
b	-0.00148	5
Ref. Index n_D 20°C	1.4367	3
25	1.4342	3
30		
"C"	0.4604	4
MR (Obs.)	28.509	4
MR (Calc.) (nD-d/2)	28.437	5
Dielectric		
A | 8 to	6.74689	5
B | 130 °C	1210.9	5
C	222.	5
A* | 8 to	1.30746	5
B* | 120 °C	1134.5	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	100.19	5

		Ref.
dt/dP °C/mm		
25°C	0.3131	5
BP	0.0463	5
t_e	0.0382	5
30 mm	0.6312	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.54	5
30 mm	60.43	5
BP	51.52	5
t_e	50.62	5
t_e (d, e)	50.57	5
$\Delta Hv/T_e$	18.58	5
d | 8 to	61.26	5
e | 120 °C	0.1067	5
d' | to		
e' | °C		
d_c g/ml		
v^c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9939	5
30 mm	1.0000	5
BP	0.9456	5
t_e	0.9374	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.		

		Ref.
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	24.01	5
γ 30	22.87	5
40	21.75	5
Parachor [P] 20°C		
30		
40		
Sugd.	241.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 43

NAME	1-Bromo-2-methylpropane	STRUCTURAL FORMULA
		$CH_2BrC(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Br	Molecular Weight 137.028

		Ref.
F. P. °C	-117.4	3
F. P. 100%		
B. P. °C		
760 mm	91.53	3
100	33.38	5
30	8.05	5
10	-11.05	5
1	-42.30	5
Pressure		
mm 25°C	69.02	5
t_e	974.6	5
Density		
g/ml 20°C	1.2645	3
d_4^t 25	1.2571	3
30		
a	1.2941	5
b	-0.00146	5
Ref. Index		
n_D 20°C	1.4350	3
25	1.4325	3
30		
"C"	0.4565	4
MR (Obs.)	28.277	4
MR (Calc.)	28.437	5
(nD-d/2)		
Dielectric		
A | 8 to	6.74887	5
B | 131 °C	1212.8	5
C	222.	5
A* | 8 to	1.30899	5
B* | 121 °C	1136.2	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	100.54	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3166	5
BP	0.0463	5
t_e	0.0382	5
30 mm	0.6317	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.63	5
30 mm	60.50	5
BP	51.59	5
t_e	50.68	5
t_e (d, e)	50.63	5
ΔHv/T_e	18.59	5
d | 8 to	61.36	5
e | 121 °C	0.1067	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9941	5
30 mm	1.0000	5
BP	0.9456	5
t_e	0.9374	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.		

		Ref.
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	24.47	5
γ 30	23.33	5
40	22.21	5
Parachor [P]		
20°C		
30		
40		
Sugd.	241.1	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 44

NAME	2-Bromo-2-methylpropane	STRUCTURAL FORMULA
		$(CH_3)_3CBr$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9Br	Molecular Weight 137.028

		Ref.
F.P. °C	-16.2	3
F.P. 100%		
B.P. °C		
760 mm	73.25	3
100	16.98	5
30	-7.39	5
10	-25.71	5
1	-55.59	5
Pressure		
mm 25°C	141.2	5
t_e	924.9	5
Density		
g/ml 20°C	1.2209	3
d_4^{t} 25	1.2132	3
30		
a	1.2518	5
b	-0.00150	5
Ref. Index		
n_D 20°C	1.4278	3
25	1.4252	3
30		
"C"	0.4654	4
MR (Obs.)	28.864	4
MR (Calc.)	28.437	5
(nD-d/2)		
Dielectric		
A | -7 to	6.66850	5
B | 110 °C	1129.7	5
C	225.	5
A* | -7 to	1.24699	5
B* | 100 °C	1055.9	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	80.12	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1702	5
BP	0.0450	5
t_e	0.0387	5
30 mm	0.6068	5
ΔHm cal/g		
ΔHv cal/g		
25°C	52.87	5
30 mm	56.25	5
BP	48.00	5
t_e	47.33	5
t_e (d, e)	47.29	5
$\Delta Hv/T_e$	18.36	5
d | -7 to	55.50	5
e | 100 °C	0.1024	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9862	5
30 mm	1.0000	5
BP	0.9474	5
t_e	0.9410	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.		

			Ref.
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		21.23	5
γ 30		20.15	5
40		19.09	5
Parachor [P]			
20°C			
30			
40			
Sugd.		241.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 45

NAME	2-Bromopentane	STRUCTURAL FORMULA
		$CH_3CHBr(CH_2)_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.
F. P. °C	-95.5	3
F. P. 100%		
B. P. °C 760 mm	117.4	3
100	56.6	5
30	30.0	5
10	9.8	5
1	-23.3	5
Pressure mm 25°C	23.28	5
t_e	1044.0	5
Density g/ml 20°C	1.2075	3
d_4^{t} 25	1.2012	3
30		
a	1.2327	5
b	-0.00125	5
Ref. Index n_D 20°C	1.4413	3
25	1.4394	3
30		
"C"	0.4846	4
MR (Obs.)	33.054	4
MR (Calc.) (nD-d/2)	33.055	5
Dielectric		
A | 30 to	6.84548	5
B | 159 °C	1325.8	5
C	217.	5
A* | 30 to	1.42528	5
B* | 149 °C	1246.1	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	129.45	5

		Ref.
dt/dP		
°C/mm		
25°C	0.8240	5
BP	0.0482	5
t_e	0.0377	5
30 mm	0.6660	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.03	5
30 mm	60.49	5
BP	51.40	5
t_e	50.23	5
t_e (d, e)	50.15	5
ΔHv/T_e	18.85	5
d | 30 to	63.60	5
e | 149 °C	0.1039	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0013	5
30 mm	1.0000	5
BP	0.9426	5
t_e	0.9320	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.		

		Ref.
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	25.12	5
γ 30	24.08	5
40	23.07	5
Parachor [P] 20°C		
30		
40		
Sugd.	280.1	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		

+ grams/100 grams solvent

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. 46

NAME	3-Bromopentane	STRUCTURAL FORMULA
		$CH_3CH_2CHBrCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.
F.P. °C	-126.2	3
F.P. 100%		
B.P. °C		
760 mm	118.6	3
100	57.7	5
30	31.0	5
10	10.8	5
1	-22.3	5
Pressure mm 25°C	22.03	5
t_e	1047.0	5
Density g/ml 20°C	1.2124	3
d_4^t 25	1.2062	3
30		
a	1.2372	5
b	-0.00123	5
Ref. Index n_D 20°C	1.4441	3
25	1.4420	3
30		
"C"	0.4855	4
MR (Obs.)	33.102	4
MR (Calc.) (nD-d/2)	33.055	5
Dielectric		
A | 31 to	6.84027	5
B | 161 °C	1324.8	5
C	216.	5
A* | 31 to	1.42009	5
B* | 151 °C	1245.5	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	130.79	5

		Ref.
dt/dP °C/mm		
25°C	0.8642	5
BP	0.0483	5
t_e	0.0377	5
30 mm	0.6668	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.51	5
30 mm	60.84	5
BP	51.60	5
t_e	50.41	5
t_e (d, e)	50.32	5
$\Delta Hv/T_e$	18.85	5
d | 31 to	64.11	5
e | 151 °C	0.1055	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0015	5
30 mm	1.0000	5
BP	0.9423	5
t_e	0.9316	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.		

		Ref.
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	25.53	5
γ 30	24.50	5
40	23.49	5
Parachor [P] 20°C		
30		
40		
Sugd.	280.1	5
Exp. L. 1. %/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

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TABLE III. BROMOALKANES

No. 47

NAME	1-Bromo-2-methylbutane	STRUCTURAL FORMULA
		$CH_2BrCH(CH_3)CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	120.5	3
100	59.4	5
30	32.6	5
10	12.3	5
1	-21.0	5
Pressure mm 25°C	20.29	5
t_e	1052.2	5
Density g/ml 20°C	1.2205	3
d_4^t 25	1.2140	3
30		
a	1.2465	5
b	-0.00129	5
Ref. Index n_D 20°C	1.4452	3
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 °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	132.91	5

		Ref.
dt/dP		
°C/mm		
25°C	0.9303	5
BP	0.0484	5
t_e	0.0376	5
30 mm	0.6697	5
ΔHm cal/g		
ΔHv cal/g		
25°C	62.05	5
30 mm	61.21	5
BP	51.95	5
t_e	50.73	5
t_e (d, e)	50.64	5
$\Delta Hv/T_e$	18.87	5
d | 33 to	64.65	5
e | 153 °C	0.1054	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0019	5
30 mm	1.0000	5
BP	0.9422	5
t_e	0.9313	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.		

			Ref.
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		26.22	5
σ 30		25.12	5
40		24.04	5
Parachor [P]			
20°C			
30			
40			
Sugd.		280.1	5
Exp. L. 1. %/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

No. 48

NAME	1-Bromo-3-methylbutane	STRUCTURAL FORMULA
		$CH_2BrCH_2CH(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.
F.P. °C	-112.	3
F.P. 100%		
B.P. °C		
760 mm	120.4	3
100	59.3	5
30	32.5	5
10	12.3	5
1	-21.1	5
Pressure		
mm 25°C	20.38	5
t_e	1051.9	5
Density		
g/ml 20°C	1.2071	3
d_4^{t} 25	1.2006	3
30		
a	1.2331	5
b	-0.00129	5
Ref. Index		
n_D 20°C	1.4420	3
25	1.4400	3
30		
"C"	0.4854	4
MR (Obs.)	33.110	4
MR (Calc.) (nD-d/2)	33.055	5
Dielectric		
A | 33 to	6.85100	5
B | 163 °C	1337.6	5
C	216.	5
A* | 33 to	1.42887	5
B* | 153 °C	1255.8	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	132.80	5

		Ref.
dt/dP		
°C/mm		
25°C	0.9267	5
BP	0.0484	5
t_e	0.0376	5
30 mm	0.6695	5
ΔHm cal/g		
ΔHv cal/g		
25°C	62.03	5
30 mm	61.19	5
BP	51.93	5
t_e	50.71	5
t_e (d, e)	50.62	5
$\Delta Hv/T_e$	18.87	5
d | 33 to	64.62	5
e | 153 °C	0.1054	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0018	5
30 mm	1.0000	5
BP	0.9422	5
t_e	0.9313	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.		

			Ref.
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		25.09	5
γ 30		24.02	5
40		22.98	5
Parachor [P]			
20°C			
30			
40			
Sugd.		280.1	5
Exp. L.1.%/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

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TABLE III. BROMOALKANES

No. 49

NAME	2-Bromo-2-methylbutane	STRUCTURAL FORMULA
		$CH_3CBr(CH_3(CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	108.	3
100	48.	5
30	22.	5
10	2.	5
1	-30.	5
Pressure		
mm 25°C	34.62	5
t_e	1018.2	5
Density		
g/ml 20°C	1.2160	3
d_4^{t} 25	1.2095	3
30		
a	1.2420	5
b	-0.00129	5
Ref. Index		
n_D 20°C	1.4420	3
25	1.4400	3
30		
"C"	0.4819	4
MR (Obs.)	32.868	4
MR (Calc.) (nD-d/2)	33.055	5
Dielectric		
A | 22 to	6.77584	5
B | 149 °C	1262.0	5
C	216.	5
A* | 22 to	1.36739	5
B* | 139 °C	1185.2	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	118.92	5

		Ref.
dt/dP		
°C/mm		
25°C	0.5773	5
BP	0.0475	5
t_e	0.0379	5
30 mm	0.6507	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.45	5
30 mm	58.76	5
BP	49.67	5
t_e	48.59	5
t_e (d, e)	48.51	5
$\Delta Hv/T_e$	18.72	5
d | 22 to	61.11	5
e | 139 °C	0.1060	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9992	5
30 mm	1.0000	5
BP	0.9432	5
t_e	0.9334	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.		

		Ref.
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	25.83	5
30	24.73	5
40	23.66	5
Parachor [P]		
20°C		
30		
40		
Sugd.	280.1	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		

+ grams/100 grams solvent

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
		$CH_3CHBrCH(CH_3)_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$ — Molecular Weight 151.054

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	115.3	3
100	54.7	5
30	28.2	5
10	8.2	5
1	-24.8	5
Pressure mm 25°C	25.48	5
t_e	1038.2	5
Density g/ml 20°C	1.2209	3
d_4^t 25	1.2156	3
30		
a	1.2421	5
b	-0.00105	5
Ref. Index n_D 20°C	1.4454	3
25	1.4434	3
30		
"C"	0.4834	4
MR (Obs.)	32.955	4
MR (Calc.) (nD-d/2)	33.055	5
Dielectric		
A | 28 to	6.83288	5
B | 157 °C	1313.3	5
C	217.	5
A* | 28 to	1.41504	5
B* | 147 °C	1234.1	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	127.10	5

		Ref.
dt/dP °C/mm		
25°C	0.7602	5
BP	0.0480	5
t_e	0.0377	5
30 mm	0.6628	5
ΔHm cal/g		
ΔHv cal/g		
25°C	60.43	5
30 mm	60.08	5
BP	51.02	5
t_e	49.88	5
t_e (d, e)	49.79	5
$\Delta Hv/T_e$	18.82	5
d | 28 to	63.01	5
e | 147 °C	0.1040	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0008	5
30 mm	1.0000	5
BP	0.9427	5
t_e	0.9323	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.		

			Ref.
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		26.26	5
γ 30		25.35	5
40		24.45	5
Parachor [P]			
20°C			
30			
40			
Sugd.		280.1	5
Exp. L. 1. %/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. 51

NAME	1-Bromo-2, 2-dimethylpropane	STRUCTURAL FORMULA
		$CH_2BrC(CH_3)_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}Br$	Molecular Weight 151.054

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C 760 mm	106.	3
100	46.	5
30	20.	5
10	1.	5
1	-32.	5
Pressure mm 25°C	37.96	5
t_e	1013.5	5
Density g/ml 20°C	1.1997	3
d_4^{t} 25	1.1934	3
30		
a	1.2249	5
b	-0.00125	5
Ref. Index n_D 20°C	1.4370	3
25	1.4350	3
30		
"C"	0.4832	4
MR (Obs.)	32.987	4
MR (Calc.) (nD-d/2)	33.055	5
Dielectric		
A | 20 to	6.80131	5
B | 147 °C	1274.2	5
C	219.	5
A* | 20 to	1.39107	5
B* | 137 °C	1195.9	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	116.70	5

		Ref.
dt/dP		
°C/mm		
25°C	0.5346	5
BP	0.0474	5
t_e	0.0379	5
30 mm	0.6507	5
ΔHm cal/g		
ΔHv cal/g		
25°C	57.54	5
30 mm	58.03	5
BP	49.35	5
t_e	48.33	5
t_e (d, e)	48.27	5
ΔHv/T_e	18.73	5
d | 20 to	60.09	5
e | 137 °C	0.1013	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9986	5
30 mm	1.0000	5
BP	0.9439	5
t_e	0.9344	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.		

			Ref.
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		24.47	5
σ 30		23.45	5
40		22.45	5
Parachor [P] 20°C			
30			
40			
Sugd.		280.1	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			

+ grams/100 grams solvent

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. 52

NAME	2-Bromo-4-methylpentane	STRUCTURAL FORMULA
		$CH_3CHBrCH_2CH(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}Br$	Molecular Weight 165.080

		Ref.
F.P. °C	-94.2	3
F.P. 100%		
B.P. °C		
760 mm	131.	3
100	69.	5
30	42.	5
10	21.	5
1	-13.	5
Pressure mm 25°C	12.68	5
t_e	1079.9	5
Density g/ml 20°C	1.1568	3
d_4^{t} 25	1.1509	3
30		
a	1.1804	5
b	-0.00118	5
Ref. Index n_D 20°C	1.4421	3
25	1.4400	3
30		
"C"	0.5067	4
MR (Obs.)	37.766	4
MR (Calc.) (nD-d/2)	37.673	5
Dielectric		
A | 42 to	6.88872	5
B |175 °C	1382.7	5
C	214.	5
A* | 42 to	1.49675	5
B* |165 °C	1301.8	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	144.65	5

		Ref.
dt/dP		
°C/mm		
25°C	1.415	5
BP	0.0492	5
t_e	0.0374	5
30 mm	0.6835	5
ΔHm cal/g		
ΔHv cal/g		
25°C	59.85	5
30 mm	58.11	5
BP	49.23	5
t_e	47.96	5
t_e (d, e)	47.87	5
$\Delta Hv/T_e$	18.95	5
d | 42 to	62.24	5
e | 165 °C	0.0993	5
d' | to		
e' | °C		
d_c g/ml		
v^c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0035	5
30 mm	1.0000	5
BP	0.9408	5
t_e	0.9290	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.		

			Ref.
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		24.99	5
γ 30		23.98	5
40		23.00	5
Parachor [P]			
20°C			
30			
40			
Sugd.		319.1	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 53

NAME	2-Bromo-3, 3-dimethylbutane 3-Bromo-2, 2-dimethylbutane	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}Br$ — Molecular Weight 165.080

		Ref.
F.P. °C	25.	3
F.P. 100%		
B.P. °C 760 mm	132.	3
100	70.	5
30	42.	5
10	22.	5
1	-13.	5
Pressure mm 25°C	12.13	5
t_e	1082.4	5
Density g/ml 20°C	1.17[a]	3
d_4^{t} 25	1.17	3
30		
a	1.1700	5
b	-0.055	5
Ref. Index n_D 20°C	1.45[a]	3
25	1.45	3
30		
"C"	0.5094	4
MR (Obs.)	37.917	4
MR (Calc.) (nD-d/2)	37.673	5
Dielectric		
A | 42 to	6.89450	5
B | 176 °C	1388.7	5
C	214.	5
A* | 42 to	1.50171	5
B* | 166 °C	1307.6	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	145.77	5

		Ref.
dt/dP °C/mm		
25°C	1.473	5
BP	0.0493	5
t_e	0.0374	5
30 mm	0.6850	5
ΔHm cal/g		
ΔHv cal/g		
25°C	60.12	5
30 mm	58.29	5
BP	49.42	5
t_e	48.16	5
t_e (d, e)	48.06	5
$\Delta Hv/T_e$	18.98	5
d | 42 to	62.49	5
e | 166 °C	0.0990	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0037	5
30 mm	1.0000	5
BP	0.9406	5
t_e	0.9287	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.		

		Ref.
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	26.15	5
σ 30	26.15	5
40	26.14	5
Parachor [P] 20°C		
30		
40		
Sugd.	319.1	5
Exp. L.1.%/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

No. 54

NAME	Dibromomethane	STRUCTURAL FORMULA
		CH_2Br_2
Mole % Pur.	Ref. 3	Molecular Formula CH_2Br — Molecular Weight 173.858

		Ref.
F.P. °C	-52.55	3
F.P. 100%		
B.P. °C		
760 mm	96.95	3
100	41.70	5
30	17.15	5
10	-1.56	5
1	-32.57	5
Pressure mm 25°C	45.26	5
t_e	991.4	5
Density g/ml 20°C	2.4970	3
d_4^{t} 25	2.4842	3
30		
a	2.5482	5
b	-0.00254	5
Ref. Index		
n_D 20°C	1.5420	3
25	1.5389	3
30		
"C"	0.2841	4
MR (Obs.)	21.913	4
MR (Calc.) (nD-d/2)	22.348	5
Dielectric		
A | 17 to	7.0625	3
B | 136 °C	1327.8	3
C	220.58	3
A* | 17 to	1.7177	5
B* | 126 °C	1250.0	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	105.96	5

		Ref.
dt/dP		
°C/mm		
25°C	0.4358	5
BP	0.0434	5
t_e	0.0352	5
30 mm	0.6162	5
ΔHm cal/g		
ΔHv cal/g		
25°C	51.37	5
30 mm	52.11	5
BP	44.88	5
t_e	44.12	5
t_e (d, e)	44.07	5
$\Delta Hv/T_e$	20.23	5
d | 17 to	53.66	5
e | 126 °C	0.0905	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9974	5
30 mm	1.0000	5
BP	0.9478	5
t_e	0.9399	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.		

			Ref.
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		39.89	5
γ 30		38.26	5
40		36.68	5
Parachor [P]			
20°C			
30			
40			
Sugd.		175.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 55

NAME	1,1-Dibromoethane	STRUCTURAL FORMULA
		$CHBr_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_2H_4Br	Molecular Weight 187.884

		Ref.
F.P. °C	-63.	3
F.P. 100%		
B.P. °C		
760 mm	108.0	3
100	52.8	5
30	28.0	5
10	9.0	5
1	-22.5	5
Pressure		
mm 25°C	25.51	5
t_e	1021.6	5
Density		
g/ml 20°C	2.0555	3
d_4^{t} 25	2.0455	3
30		
a	2.0955	5
b	-0.00199	5
Ref. Index		
n_D 20°C	1.5128	3
25	1.5101	3
30		
"C"	0.3277	4
MR (Obs.)	27.464	4
MR (Calc.) (nD-d/2)	26.966	5
Dielectric		
A | 28 to	7.2054	3
B | 148 °C	1412.	3
C	218.5	3
A* | 28 to	1.8837	5
B* | 138 °C	1333.	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	118.00	5

		Ref.
dt/dP		
°C/mm		
25°C	0.7150	5
BP	0.0431	5
t_e	0.0341	5
30 mm	0.6229	5
ΔHm cal/g		
ΔHv cal/g		
25°C	51.60	5
30 mm	51.32	5
BP	44.26	5
t_e	43.42	5
t_e (d, e)	43.37	5
ΔHv/T_e	20.86	5
d | 28 to	53.79	5
e | 138 °C	0.0883	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0009	5
30 mm	1.0000	5
BP	0.9476	5
t_e	0.9387	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.		

			Ref.
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	30.03	5
σ	30	28.87	5
	40	27.74	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	214.0	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 56

NAME	1, 1-Dibromopropane	STRUCTURAL FORMULA
		$CHBr_2CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Br_2$	Molecular Weight 201.910

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	133.5	3
100	74.9	5
30	48.6	5
10	28.4	5
1	-5.1	5
Pressure mm 25°C	8.14	5
t_e	1088.4	5
Density g/ml 20°C	1.982	3
d_4^t 25	1.975	3
30		
a	2.0100	5
b	-0.00140	5
Ref. Index n_D 20°C	1.5100	3
25	1.5063	3
30		
"C"	0.3381	4
MR (Obs.)	30.468	4
MR (Calc.) (nD-d/2)	31.584	5
Dielectric		
A | 49 to	7.2141	3
B | 176 °C	1504.	3
C	213.6	3
A* | 49 to	1.9045	5
B* | 166 °C	1422.	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	146.44	5

		Ref.
dt/dP °C/mm		
25°C	2.019	5
BP	0.0458	5
t_e	0.0344	5
30 mm	0.6615	5
ΔHm cal/g		
ΔHv cal/g		
25°C	53.49	5
30 mm	51.32	5
BP	43.96	5
t_e	42.94	5
t_e (d, e)	42.84	5
$\Delta Hv/T_e$	20.66	5
d | 49 to	55.53	5
e | 166 °C	0.0866	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0050	5
30 mm	1.0000	5
BP	0.9429	5
t_e	0.9323	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.		

		Ref.
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	38.04	5
γ 30	36.97	5
40	35.92	5
Parachor [P] 20°C		
30		
40		
Sugd.	253.0	5
Exp. L. 1. %/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. 57

NAME	1, 1-Dibromobutane	STRUCTURAL FORMULA
		$CHBr_2(CH_2)_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_8Br_2$	Molecular Weight 215.936

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	158.	3
100	97.	5
30	69.	5
10	48.	5
1	12.	5
Pressure		
mm 25°C	2.45	5
t_e	1152.5	5
Density		
g/ml 20°C	1.791	3
d_4^{t} 25	1.784	3
30		
a	1.8190	5
b	-0.00140	5
Ref. Index		
n_D 20°C	1.4988	3
25	1.4965	3
30		
"C"	0.3665	4
MR (Obs.)	35.389	4
MR (Calc.) (nD-d/2)	36.202	5
Dielectric		
A 69 to	7.265	3
B 204 °C	1609.	3
C	209.	3
A* 69 to	1.967	5
B* 194 °C	1525.	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	173.79	5

		Ref.
dt/dP		
°C/mm		
25°C	6.036	5
BP	0.0478	5
t_e	0.0343	5
30 mm	0.6953	5
ΔHm cal/g		
ΔHv cal/g		
25°C	55.70	5
30 mm	51.64	5
BP	44.06	5
t_e	42.81	5
t_e (d, e)	42.71	5
$\Delta Hv/T_e$	20.69	5
d 69 to	57.52	5
e 194 °C	0.0852	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0063	5
30 mm	1.0000	5
BP	0.9401	5
t_e	0.9268	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.		

			Ref.
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		34.40	5
σ	30	33.34	5
	40	32.30	5
Parachor [P]			
	20°C		
	30		
	40		
	Sugd.	292.0	5
Exp. L. 1. %/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

No. 58

NAME	1, 1-Dibromopentane	STRUCTURAL FORMULA
		$CHBr_2(CH_2)_3CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Br_2$	Molecular Weight 229.962

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	180.	3
100	116.	5
30	87.	5
10	65.	5
1	28.	5
Pressure		
mm 25°C	0.79	5
t_e	1209.2	5
Density		
g/ml 20°C	1.660	3
d_4^t 25	1.654	3
30		
a	1.6840	5
b	-0.00120	5
Ref. Index		
n_D 20°C	1.501	3
25	1.499	3
30		
"C"	0.3971	4
MR (Obs.)	40.814	4
MR (Calc.)	40.820	5
(nD-d/2)		
Dielectric		
A | 87 to	7.307	3
B | 228 °C	1704.	3
C	205.	3
A* | 87 to	2.022	5
B* | 218 °C	1618.	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	198.36	5

		Ref.
dt/dP		
°C/mm		
25°C	17.04	5
BP	0.0497	5
t_e	0.0343	5
30 mm	0.7258	5
ΔHm cal/g		
ΔHv cal/g		
25°C	57.30	5
30 mm	51.55	5
BP	43.79	5
t_e	42.40	5
t_e (d, e)	42.25	5
$\Delta Hv/T_e$	20.68	5
d | 87 to	58.86	5
e | 218 °C	0.0837	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0057	5
30 mm	1.0000	5
BP	0.9363	5
t_e	0.9217	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.		

			Ref.
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		32.59	5
γ 30		31.66	5
40		30.75	5
Parachor [P]			
20°C			
30			
40			
Sugd.		331.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 59

NAME	1, 1-Dibromohexane	STRUCTURAL FORMULA
		$CHBr_2(CH_2)_4CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{12}Br_2$	Molecular Weight 243.988

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C 760 mm	202.	3
100	135.	5
30	105.	5
10	82.	5
1	44.	5
Pressure mm 25°C	0.25	5
t_e	1265.5	5
Density g/ml 20°C	1.565	3
d_4^t 25	1.560	3
30		
a	1.5850	5
b	-0.00100	5
Ref. Index n_D 20°C	1.495	3
25	1.493	3
30		
"C"	0.4164	4
MR (Obs.)	45.465	4
MR (Calc.) (nD-d/2)	45.438	5
Dielectric		
A 105 to	7.333	3
B 253 °C	1794.	3
C	201.	3
A* 105 to	2.060	5
B* 243 °C	1706.	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	223.04	5

		Ref.
dt/dP °C/mm		
25°C	49.80	5
BP	0.0517	5
t_e	0.0344	5
30 mm	0.7574	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.75	5
30 mm	51.35	5
BP	43.41	5
t_e	41.89	5
t_e (d, e)	41.68	5
$\Delta Hv/T_e$	20.60	5
d 105 to	60.00	5
e 243 °C	0.0821	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0032	5
30 mm	1.0000	5
BP	0.9324	5
t_e	0.9167	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.		

		Ref.
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	31.72	5
30	30.92	5
40	30.13	5
Parachor [P] 20°C		
30		
40		
Sugd.	370.0	5
Exp. L. 1. %/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

No. 60

NAME	1, 1-Dibromoheptane	STRUCTURAL FORMULA
		$CHBr_2(CH_2)_5CH_3$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_7H_{14}Br_2$	258.014

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	222.	3
100	153.	5
30	122.	5
10	98.	5
1	58.	5
Pressure		
mm 25°C	0.08	5
t_e	1315.9	5
Density		
g/ml 20°C	1.491	3
d_4^{t} 25	1.485	3
30		
a	1.5150	5
b	-0.00120	5
Ref. Index		
n_D 20°C	1.490	3
25	1.498	3
30		
"C"	0.4330	4
MR (Obs.)	50.031	4
MR (Calc.) (nD-d/2)	50.056	5
Dielectric		
A | 122 to	7.373	3
B | 275 °C	1882.	3
C	197.	3
A* | 122 to	2.113	5
B* | 265 °C	1793.	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	245.43	5

		Ref.
dt/dP		
°C/mm		
25°C	144.7	5
BP	0.0533	5
t_e	0.0343	5
30 mm	0.7838	5
ΔHm cal/g		
ΔHv cal/g		
25°C	60.23	5
30 mm	51.19	5
BP	43.10	5
t_e	41.42	5
t_e (d, e)	41.20	5
$\Delta Hv/T_e$	20.61	5
d | 122 to	61.10	5
e | 265 °C	0.0811	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0004	5
30 mm	1.0000	5
BP	0.9295	5
t_e	0.9120	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.		

		Ref.
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	31.21	5
γ 30	30.21	5
40	29.24	5
Parachor [P]		
20°C		
30		
40		
Sugd.	409.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 61

NAME	1, 1-Dibromooctane		STRUCTURAL FORMULA
			$CHBr_2(CH_2)_6CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{16}Br_2$	Molecular Weight 272.040

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	242.	3
100	171.	5
30	139.	5
10	114.	5
1	73.	5
Pressure mm 25°C	0.02	5
t_e	1366.2	5
Density g/ml 20°C	1.432	3
d_4^{t} 25	1.427	3
30		
a	1.4520	5
b	-0.00100	5
Ref. Index n_D 20°C	1.488	3
25	1.486	3
30		
"C"	0.4491	4
MR (Obs.)	54.733	4
MR (Calc.) (nD-d/2)	54.674	5
Dielectric		
A | 139 to	7.403	3
B | 298 °C	1967.	3
C	193.	3
A* | 139 to	2.156	5
B* | 288 °C	1877.	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	267.93	5

		Ref.
dt/dP °C/mm		
25°C	437.3	5
BP	0.0550	5
t_e	0.0343	5
30 mm	0.8109	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.66	5
30 mm	50.98	5
BP	42.78	5
t_e	40.95	5
t_e (d, e)	40.72	5
$\Delta Hv/T_e$	20.59	5
d | 139 to	62.03	5
e | 288 °C	0.0796	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9963	5
30 mm	1.0000	5
BP	0.9272	5
t_e	0.9075	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.		

			Ref.
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		30.93	5
σ 30		30.07	5
40		29.24	5
Parachor [P] 20°C			
30			
40			
Sugd.		448.0	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 62

NAME	1, 1-Dibromononane	STRUCTURAL FORMULA
		$CHBr_2(CH_2)_7CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{18}Br_2$	Molecular Weight 286.066

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	260.	3
100	187.	5
30	154.	5
10	128.	5
1	86.	5
Pressure		
mm 25°C	0.01	5
t_e	1410.7	5
Density		
g/ml 20°C	1.382	3
d_4^t 25	1.377	3
30		
a	1.4020	5
b	-0.00100	5
Ref. Index		
n_D 20°C	1.486	3
25	1.484	3
30		
"C"	0.4635	4
MR (Obs.)	59.429	4
MR (Calc.) (nD-d/2)	59.292	5
Dielectric		
A | 154 to	7.434	3
B | 318 °C	2049.	3
C	190.	3
A* | 154 to	2.200	5
B* | 308 °C	1958.	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	288.23	5

		Ref.
dt/dP		
°C/mm		
25°C	1223.	5
BP	0.0565	5
t_e	0.0344	5
30 mm	0.8359	5
ΔHm cal/g		
ΔHv cal/g		
25°C	62.59	5
30 mm	50.52	5
BP	42.31	5
t_e	40.32	5
t_e (d, e)	40.12	5
$\Delta Hv/T_e$	20.54	5
d | 154 to	62.45	5
e | 308 °C	0.0775	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9931	5
30 mm	1.0000	5
BP	0.9255	5
t_e	0.9032	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.		

		Ref.
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	30.64	5
γ 30	29.76	5
40	28.90	5
Parachor [P]		
20°C		
30		
40		
Sugd.	487.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 63

NAME	1, 1-Dibromodecane	STRUCTURAL FORMULA
		$CHBr_2(CH_2)_8CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{20}Br_2$	Molecular Weight 300.092

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	277.	3
100	202.	5
30	169.	5
10	142.	5
1	99.	5
Pressure mm 25°C		
t_e	1452.5	5
Density g/ml 20°C	1.338	3
d_4^{t} 25 30	1.334	3
a	1.3540	5
b	-0.03800	5
Ref. Index n_D 20°C	1.484	3
25	1.482	3
30		
"C"	0.4769	4
MR (Obs.)	64.167	4
MR (Calc.) (nD-d/2)	63.910	5
Dielectric		
A | 169 to	7.475	3
B | 337 °C	2127.	3
C	186.	3
A* | 169 to	2.254	5
B* | 327 °C	2035.	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	307.17	5

		Ref.
dt/dP		
°C/mm		
25°C	3666.	5
BP	0.0576	5
t_e	0.0342	5
30 mm	0.8559	5
ΔHm cal/g		
ΔHv cal/g		
25°C	64.02	5
30 mm	50.32	5
BP	41.97	5
t_e	39.91	5
t_e (d, e)	39.65	5
$\Delta Hv/T_e$	20.64	5
d | 169 to	63.31	5
e | 327 °C	0.0770	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9886	5
30 mm	1.0000	5
BP	0.9224	5
t_e	0.8996	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.		

		Ref.
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	30.25	5
σ 30	29.53	5
40	28.83	5
Parachor [P]		
20°C		
30		
40		
Sugd.	526.0	5
Exp. L. 1, %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 64

NAME	1, 2-Dibromoethane	STRUCTURAL FORMULA
		CH_2BrCH_2Br
Mole % Pur.	Ref. 3	Molecular Formula $C_2H_4Br_2$ — Molecular Weight 187.884

		Ref.
F.P. °C	9.79	3
F.P. 100%		
B.P. °C		
760 mm	131.36	3
100	74.51	5
30	48.83	5
10	29.09	5
1	-3.98	5
Pressure		
mm 25°C	7.79	5
t_e	1083.9	5
Density		
g/ml 20°C	2.1792	3
d_4^t 25	2.1688	3
30		
a	2.2208	5
b	-0.00208	5
Ref. Index		
n_D 20°C	1.5387	3
25	1.5360	3
30		
"C"	0.3237	4
MR (Obs.)	26.997	4
MR (Calc.)	26.966	5
(nD-d/2)		
Dielectric		
A | 49 to	7.35127	5
B | 174 °C	1543.9	5
C	214.	5
A* | 49 to	2.01036	5
B* | 164 °C	1461.9	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	143.70	5

		Ref.
dt/dP		
°C/mm		
25°C	2.063	5
BP	0.0441	5
t_e	0.0332	5
30 mm	0.6477	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.82	5
30 mm	56.42	5
BP	48.60	5
t_e	47.52	5
t_e (d, e)	47.43	5
$\Delta Hv/T_e$	21.42	5
d | 49 to	61.05	5
e | 164 °C	0.0948	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0053	5
30 mm	1.0000	5
BP	0.9451	5
t_e	0.9346	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.		

		Ref.
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	37.95	5
γ 30	36.52	5
40	35.13	5
Parachor [P]		
20°C		
30		
40		
Sugd.	214.0	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 65

NAME	1,2-Dibromopropane	STRUCTURAL FORMULA
		$CH_2BrCHBrCH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Br_2$	Molecular Weight 201.910

		Ref.
F.P. °C	-55.25	3
F.P. 100%		
B.P. °C 760 mm	140.0	3
100	82.0	5
30	55.9	5
10	35.7	5
1	2.0	5
Pressure mm 25°C	5.16	5
t_e	1106.2	5
Density g/ml 20°C	1.9324	3
d_4^{t} 25	1.9241	3
30		
a	1.9656	5
b	-0.00166	5
Ref. Index n_D 20°C	1.5201	3
25	1.5188	3
30		
"C"	0.3533	4
MR (Obs.)	31.770	4
MR (Calc.) (nD-d/2)	31.584	5
Dielectric		
A | 56 to	7.34875	5
B | 183 °C	1572.7	5
C	212.	5
A* | 56 to	2.03363	5
B* | 173 °C	1490.2	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	153.33	5

		Ref.
dt/dP		
°C/mm		
25°C	3.005	5
BP	0.0450	5
t_e	0.0333	5
30 mm	0.6604	5
ΔHm cal/g		
ΔHv cal/g		
25°C	56.75	5
30 mm	53.76	5
BP	46.16	5
t_e	45.04	5
t_e (d, e)	44.95	5
$\Delta Hv/T_e$	21.32	5
d | 56 to	58.81	5
e | 173 °C	0.0904	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0061	5
30 mm	1.0000	5
BP	0.9435	5
t_e	0.9322	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.		

		Ref.
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	34.37	5
30	33.20	5
40	32.06	5
Parachor [P] 20°C		
30		
40		
Sugd.	253.0	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

No. 66

NAME	1,3-Dibromopropane	STRUCTURAL FORMULA
		$CH_2BrCH_2CH_2Br$
Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6Br_2$ — Molecular Weight 201.910

		Ref.
F.P. °C	-34.2	3
F.P. 100%		
B.P. °C		
760 mm	167.3	3
100	105.8	5
30	78.0	5
10	56.6	5
1	20.8	5
Pressure mm 25°C	1.36	5
t_e	1176.9	5
Density g/ml 20°C	1.9822	3
d_4^t 25	1.9737	3
30		
a	2.0162	5
b	-0.00170	5
Ref. Index n_D 20°C	1.5232	3
25	1.5208	3
30		
"C"	0.3463	4
MR (Obs.)	31.127	4
MR (Calc.) (nD-d/2)	31.584	5
Dielectric		
A | 78 to	7.35783	5
B | 214 °C	1675.8	5
C	207.	5
A* | 78 to	2.02415	5
B* | 204 °C	1590.7	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	183.88	5

		Ref.
dt/dP °C/mm		
25°C	10.23	5
BP	0.0478	5
t_e	0.0336	5
30 mm	0.7015	5
ΔHm cal/g		
ΔHv cal/g		
25°C	63.14	5
30 mm	57.65	5
BP	49.22	5
t_e	47.80	5
t_e (d, e)	47.66	5
$\Delta Hv/T_e$	21.12	5
d | 78 to	65.00	5
e | 204 °C	0.0943	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0066	5
30 mm	1.0000	5
BP	0.9393	5
t_e	0.9255	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.		

			Ref.
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		38.06	5
γ 30		36.77	5
40		35.51	5
Parachor [P]			
20°C			
30			
40			
Sugd.		253.0	5
Exp. L. 1. %/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. 67

NAME	1,2-Dibromobutane	STRUCTURAL FORMULA
		$CH_2BrCHBrCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_8Br_2$	Molecular Weight 215.936

		Ref.
F.P. °C	-65.4	3
F.P. 100%		
B.P. °C 760 mm	166.3	3
100	104.9	5
30	77.2	5
10	55.8	5
1	20.1	5
Pressure mm 25°C	1.43	5
t_e	1174.4	5
Density g/ml 20°C	1.7915	3
d_4^t 25	1.7870	3
30		
a	1.8095	5
b	-0.03899	5
Ref. Index n_D 20°C	1.5150	3
25	1.5125	3
30		
"C"	0.3775	4
MR (Obs.)	36.347	4
MR (Calc.) (nD-d/2)	36.202	5
Dielectric		
A | 77 to	7.35524	5
B | 213 °C	1670.3	5
C	207.	5
A* | 77 to	2.05136	5
B* | 203 °C	1585.4	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	182.76	5

		Ref.
dt/dP °C/mm		
25°C	9.779	5
BP	0.0477	5
t_e	0.0336	5
30 mm	0.6998	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.84	5
30 mm	53.78	5
BP	45.91	5
t_e	44.57	5
t_e (d, e)	44.45	5
$\Delta Hv/T_e$	21.11	5
d | 77 to	60.60	5
e | 203 °C	0.0884	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0065	5
30 mm	1.0000	5
BP	0.9395	5
t_e	0.9258	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.		

			Ref.
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		34.44	5
γ 30		33.75	5
40		33.08	5
Parachor [P] 20°C			
30			
40			
Sugd.		292.0	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 68

NAME	1, 4-Dibromobutane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_2CH_2Br$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_8Br_2$	Molecular Weight 215.936

		Ref.
F.P. °C	-16.53	3
F.P. 100%		
B.P. °C		
760 mm	197.	3
100	132.	5
30	102.	5
10	79.	5
1	41.	5
Pressure		
mm 25°C	0.30	5
t_e	1253.1	5
Density		
g/ml 20°C	1.789	3
d_4^t 25	1.781	3
30		
a	1.8210	5
b	-0.00160	5
Ref. Index		
n_D 20°C	1.5190	3
25	1.5170	3
30		
"C"	0.3808	4
MR (Obs.)	36.635	4
MR (Calc.) (nD-d/2)	36.202	5
Dielectric		
A | 102 to	7.37174	5
B | 247 °C	1791.9	5
C	202.	5
A* | 102 to	2.04821	5
B* | 237 °C	1704.1	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	217.28	5

		Ref.
dt/dP		
°C/mm		
25°C	41.55	5
BP	0.0508	5
t_e	0.0340	5
30 mm	0.7465	5
ΔHm cal/g		
ΔHv cal/g		
25°C	65.78	5
30 mm	57.82	5
BP	49.09	5
t_e	47.40	5
t_e (d, e)	47.22	5
$\Delta Hv/T_e$	20.87	5
d | 102 to	67.19	5
e | 237 °C	0.0919	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0042	5
30 mm	1.0000	5
BP	0.9348	5
t_e	0.9184	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.		

		Ref.
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	34.25	5
γ 30	33.04	5
40	31.86	5
Parachor [P]		
20°C		
30		
40		
Sugd.	292.0	5
Exp. L. 1. %/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE III. BROMOALKANES

No. 69

NAME	1, 4-Dibromopentane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_2CHBrCH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Br_2$	Molecular Weight 229.962

		Ref.
F. P. °C	-34.42	3
F. P. 100%		
B. P. °C 760 mm	200.	3
100	134.	5
30	104.	5
10	82.	5
1	43.	5
Pressure mm 25°C	0.26	5
t_e	1260.6	5
Density g/ml 20°C	1.6861	3
d_4^t 25	1.6791	3
30		
a	1.7141	5
b	-0.00140	5
Ref. Index n_D 20°C	1.5078	3
25	1.5054	3
30		
"C"	0.3959	4
MR (Obs.)	40.642	4
MR (Calc.) (nD-d/2)	40.820	5
Dielectric		
A | 104 to	7.36729	5
B | 251 °C	1799.1	5
C	201.	5
A* | 104 to	2.06980	5
B* | 241 °C	1711.4	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	220.65	5

		Ref.
dt/dP °C/mm		
25°C	48.33	5
BP	0.0511	5
t_e	0.0340	5
30 mm	0.7507	5
ΔHm cal/g		
ΔHv cal/g		
25°C	62.54	5
30 mm	54.70	5
BP	46.36	5
t_e	44.72	5
t_e (d, e)	44.55	5
$\Delta Hv/T_e$	20.82	5
d | 104 to	63.81	5
e | 241 °C	0.0873	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0038	5
30 mm	1.0000	5
BP	0.9343	5
t_e	0.9175	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.		

		Ref.
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	34.69	5
γ 30	33.55	5
40	32.44	5
Parachor [P] 20°C		
30		
40		
Sugd.	331.0	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

No. 70

NAME	1,5-Dibromopentane	STRUCTURAL FORMULA
		$CH_2Br(CH_2)_3CH_2Br$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Br_2$	Molecular Weight 229.962

		Ref.
F.P. °C	-40.0	3
F.P. 100%		
B.P. °C		
760 mm	222.3	3
100	153.6	5
30	122.5	5
10	98.6	5
1	58.5	5
Pressure		
mm 25°C	0.08	5
t_e	1316.9	5
Density		
g/ml 20°C	1.7018	3
d_4^t 25	1.6948	3
30		
a	1.7298	5
b	-0.00140	5
Ref. Index		
n_D 20°C	1.5126	3
25	1.5112	3
30		
"C"	0.3957	4
MR (Obs.)	40.588	4
MR (Calc.)	40.820	5
(nD-d/2)		
Dielectric		
A 123 to	7.37410	5
B 276 °C	1884.0	5
C	197.	5
A* 123 to	2.06404	5
B* 266 °C	1794.7	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	245.83	5

		Ref.
dt/dP		
°C/mm		
25°C	147.2	5
BP	0.0533	5
t_e	0.0343	5
30 mm	0.7843	5
ΔHm cal/g		
ΔHv cal/g		
25°C	67.64	5
30 mm	57.48	5
BP	48.51	5
t_e	46.61	5
t_e (d, e)	46.39	5
$\Delta Hv/T_e$	20.65	5
d 123 to	68.49	5
e 266 °C	0.0899	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0003	5
30 mm	1.0000	5
BP	0.9307	5
t_e	0.9120	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.		

			Ref.
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	36.00	5
γ	30	34.83	5
	40	33.69	5
Parachor [P]			
	20°C		
	30		
	40		
	Sugd.	331.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 71

NAME	1, 2-Dibromo-2-methylbutane	STRUCTURAL FORMULA
		$CH_2BrCBr(CH_3)CH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Br_2$	Molecular Weight 229.962

		Ref.
F.P. °C	-70.2	3
F.P. 100%		
B.P. °C		
760 mm	173.	3
100	111.	5
30	83.	5
10	61.	5
1	25.	5
Pressure		
mm 25°C	1.03	5
t_e	1191.7	5
Density		
g/ml 20°C	1.6652	3
d_4^{t} 25	1.6584	3
30		
a	1.6924	5
b	-0.00136	5
Ref. Index		
n_D 20°C	1.5088	3
25	1.5064	3
30		
"C"	0.4016	4
MR (Obs.)	41.221	4
MR (Calc.) (nD-d/2)	40.820	5
Dielectric		
A | 83 to	7.36014	5
B | 220 °C	1697.7	5
C	206.	5
A* | 83 to	2.07897	5
B* | 210 °C	1612.0	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	190.28	5

		Ref.
dt/dP		
°C/mm		
25°C	13.31	5
BP	0.0483	5
t_e	0.0337	5
30 mm	0.7101	5
ΔHm cal/g		
ΔHv cal/g		
25°C	56.62	5
30 mm	51.32	5
BP	43.73	5
t_e	42.39	5
t_e (d, e)	42.28	5
ΔHv/T_e	21.04	5
d | 83 to	58.25	5
e | 210 °C	0.0839	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0062	5
30 mm	1.0000	5
BP	0.9385	5
t_e	0.9243	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.		

		Ref.
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	33.00	5
30	31.94	5
40	30.90	5
Parachor [P]		
20°C		
30		
40		
Sugd.	331.0	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 72

NAME	2, 3-Dibromo-2-methylbutane	STRUCTURAL FORMULA
		$CH_3CBr(CH_3)CHBrCH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Br_2$	Molecular Weight 229.962

		Ref.
F.P. °C	15.	3
F.P. 100%		
B.P. °C		
760 mm	171.	3
100	109.	5
30	81.	5
10	59.	5
1	23.	5
Pressure		
mm 25°C	1.14	5
t_e	1186.6	5
Density		
g/ml 20°C	1.6723	3
d_4^{t} 25	1.6654	3
30		
a	1.6999	5
b	-0.00138	5
Ref. Index		
n_D 20°C	1.5102	3
25	1.5078	3
30		
"C"	0.4009	4
MR (Obs.)	41.141	4
MR (Calc.) (nD-d/2)	40.820	5
Dielectric		
A | 81 to	7.36735	5
B | 218 °C	1695.9	5
C	207.	5
A* | 81 to	2.08697	5
B* | 208 °C	1610.1	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	188.04	5

		Ref.
dt/dP		
°C/mm		
25°C	12.08	5
BP	0.0481	5
t_e	0.0337	5
30 mm	0.7076	5
ΔHm cal/g		
ΔHv cal/g		
25°C	56.09	5
30 mm	51.02	5
BP	43.54	5
t_e	42.23	5
t_e (d, e)	42.12	5
$\Delta Hv/T_e$	21.06	5
d | 81 to	57.75	5
e | 208 °C	0.0831	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0065	5
30 mm	1.0000	5
BP	0.9388	5
t_e	0.9248	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.		

			Ref.
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		33.57	5
30		32.47	5
40		31.40	5
Parachor [P]			
20°C			
30			
40			
Sugd.		331.0	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 73

NAME	1, 1-Dibromo-2, 2-dimethylpropane	STRUCTURAL FORMULA
		$CHBr_2C(CH_3)_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{10}Br_2$	Molecular Weight 229.962

		Ref.
F.P. °C	14.	3
F.P. 100%		
B.P. °C 760 mm	180.	3
100	117.	5
30	88.	5
10	66.	5
1	29.	5
Pressure mm 25°C	0.72	5
t_e	1209.5	5
Density g/ml 20°C	1.6695	3
d_4^{t} 25	1.6622	3
30		
a	1.6987	5
b	-0.00146	5
Ref. Index n_D 20°C	1.5047	3
25	1.5023	3
30		
"C"	0.3975	4
MR (Obs.)	40.835	4
MR (Calc.) (nD-d/2)	40.820	5
Dielectric		
A | 88 to	7.36566	5
B | 228 °C	1726.7	5
C	205.	5
A* | 88 to	2.08013	5
B* | 218 °C	1640.4	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	198.14	5

		Ref.
dt/dP °C/mm		
25°C	18.43	5
BP	0.0491	5
t_e	0.0338	5
30 mm	0.7209	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.08	5
30 mm	52.17	5
BP	44.41	5
t_e	42.99	5
t_e (d, e)	42.87	5
$\Delta Hv/T_e$	20.98	5
d | 88 to	59.65	5
e | 218 °C	0.0846	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0060	5
30 mm	1.0000	5
BP	0.9373	5
t_e	0.9224	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.		

		Ref.
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	33.34	5
γ 30	32.19	5
40	31.07	5
Parachor [P] 20°C		
30		
40		
Sugd.	331.0	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 74

NAME	1, 1, 2-Tribromoethane	STRUCTURAL FORMULA
		$CHBr_2CH_2Br$

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_3Br_3$	Molecular Weight 266.792

		Ref.
F. P. °C	-29.30	3
F. P. 100%		
B. P. °C		
760 mm	188.93	3
100	124.57	5
30	95.47	5
10	73.10	5
1	35.60	5
Pressure		
mm 25°C	0.45	5
t_e	1232.5	5
Density		
g/ml 20°C	2.6211	3
d_4^t 25	2.6101	3
30		
a	2.6651	5
b	-0.00220	5
Ref. Index		
n_D 20°C	1.5933	3
25	1.5907	3
30		
"C"	0.2945	4
MR (Obs.)	34.506	4
MR (Calc.) (nD-d/2)	34.731	5
Dielectric		
A | 95 to	7.36386	5
B |238 °C	1757.0	5
C	203.	5
A* | 95 to	2.13744	5
B* |228 °C	1670.2	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	208.19	5

		Ref.
dt/dP		
°C/mm		
25°C	28.27	5
BP	0.0500	5
t_e	0.0339	5
30 mm	0.7340	5
ΔHm cal/g		
ΔHv cal/g		
25°C	51.79	5
30 mm	45.96	5
BP	39.08	5
t_e	37.80	5
t_e (d, e)	37.66	5
$\Delta Hv/T_e$	20.95	5
d | 95 to	52.99	5
e | 228 °C	0.0736	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0050	5
30 mm	1.0000	5
BP	0.9360	5
t_e	0.9203	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.		

			Ref.
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		45.87	5
γ 30		44.35	5
40		42.87	5
Parachor [P]			
20°C			
30			
40			
Sugd.		264.9	5
Exp. L. 1. %/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. 75

NAME	1, 2, 3-Tribromopropane	STRUCTURAL FORMULA
		$CH_2BrCHBrCH_2Br$

Mole % Pur.	Ref. 3	Molecular Formula $C_3H_5Br_3$	Molecular Weight 280.818

		Ref.
F.P. °C	16.19	3
F.P. 100%		
B.P. °C 760 mm	222.16	3
100	153.46	5
30	122.38	5
10	98.47	5
1	58.40	5
Pressure mm 25°C	0.08	5
t_e	1316.5	5
Density g/ml 20°C	2.4209	3
d_4^t 25	2.411	3
30		
a	2.4605	5
b	-0.00198	5
Ref. Index n_D 20°C	1.5862	3
25	1.5836	3
30		
"C"	0.3153	4
MR (Obs.)	38.940	4
MR (Calc.) (nD-d/2)	39.349	5
Dielectric		
A | 122 to	7.37378	5
B | 276 °C	1883.3	5
C	197.	5
A* | 122 to	2.15063	5
B* | 266 °C	1794.0	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	245.67	5

		Ref.
dt/dP		
°C/mm		
25°C	146.2	5
BP	0.0533	5
t_e	0.0343	5
30 mm	0.7841	5
ΔHm cal/g		
ΔHv cal/g		
25°C	55.37	5
30 mm	47.06	5
BP	39.74	5
t_e	38.20	5
t_e (d, e)	38.01	5
$\Delta Hv/T_e$	20.68	5
d | 122 to	56.04	5
e | 266 °C	0.0734	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0003	5
30 mm	1.0000	5
BP	0.9307	5
t_e	0.9120	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		47.11	5
γ 30		45.59	5
40		44.10	5
Parachor [P] 20°C			
30			
40			
Sugd.		303.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 76

NAME	1, 2, 3-Tribromobutane	STRUCTURAL FORMULA
		$CH_2BrCHBrCHBrCH_3$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_4H_7Br_3$	294.844

		Ref.
F.P. °C	-19.	3
F.P. 100%		
B.P. °C		
760 mm	220.	3
100	152.	5
30	121.	5
10	97.	5
1	57.	5
Pressure		
mm 25°C	0.09	5
t_e	1310.8	5
Density		
g/ml 20°C	2.190	3
d_4^t 25	2.186	3
30		
a	2.2060	5
b	-0.0_3800	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.) (nD-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_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	243.22	5

		Ref.
dt/dP		
°C/mm		
25°C	131.7	5
BP	0.0531	5
t_e	0.0343	5
30 mm	0.7805	5
ΔHm cal/g		
ΔHv cal/g		
25°C	52.43	5
30 mm	44.63	5
BP	37.67	5
t_e	36.22	5
t_e (d, e)	36.04	5
$\Delta Hv/T_e$	20.68	5
d | 121 to	53.08	5
e | 263 °C	0.0701	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0008	5
30 mm	1.0000	5
BP	0.9310	5
t_e	0.9124	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.		

		Ref.
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	42.08	5
γ 30	41.47	5
40	40.86	5
Parachor [P]		
20°C		
30		
40		
Sugd.	342.9	5
Exp. L. 1. %/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. 77

NAME	1, 2, 4-Tribromobutane	STRUCTURAL FORMULA
		$CH_2BrCHBrCH_2CH_2Br$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_7Br_3$	Molecular Weight 294.844

		Ref.
F. P. °C	-18.	3
F. P. 100%		
B. P. °C 760 mm	215.	3
100	147.	5
30	117.	5
10	93.	5
1	54.	5
Pressure mm 25°C	0.11	5
t_e	1298.2	5
Density g/ml 20°C	2.17	3
d_4^t 25	2.18	3
30		
a	2.1300	5
b	-0.00200	5
Ref. Index n_D 20°C	1.5608	3
25	1.5588	3
30		
"C"	0.3375	4
MR (Obs.)	43.986	4
MR (Calc.) (nD-d/2)	43.967	5
Dielectric		
A | 117 to	7.36844	5
B | 268 °C	1853.4	5
C	198.	5
A* | 117 to	2.17088	5
B* | 258 °C	1764.9	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	237.57	5

		Ref.
dt/dP		
°C/mm		
25°C	102.1	5
BP	0.0526	5
t_e	0.0342	5
30 mm	0.7730	5
ΔHm cal/g		
ΔHv cal/g		
25°C	51.50	5
30 mm	44.14	5
BP	37.32	5
t_e	35.95	5
t_e (d, e)	35.76	5
ΔHv/T_e	20.75	5
d | 117 to	52.22	5
e | 258 °C	0.0693	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0017	5
30 mm	1.0000	5
BP	0.9317	5
t_e	0.9136	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		40.56	5
γ 30		42.08	5
40		43.64	5
Parachor [P]			
20°C			
30			
40			
Sugd.		342.9	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 78

NAME	2,3,3-Tribromobutane	STRUCTURAL FORMULA
		$CH_3CHBrCBr_2CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_4H_7Br_3$ — Molecular Weight 294.844

		Ref.
F.P. °C	1.85	3
F.P. 100%		
B.P. °C 760 mm	206.	3
100	139.	5
30	109.	5
10	86.	5
1	47.	5
Pressure mm 25°C	0.19	5
t_e	1275.7	5
Density g/ml 20°C	2.1724	3
d_4^t 25	2.1708	3
30		
a	2.1788	5
b	-0.0_3320	5
Ref. Index n_D 20°C	1.560	3
25	1.558	3
30		
"C"	0.3367	4
MR (Obs.)	43.886	4
MR (Calc.) (nD-d/2)	43.967	5
Dielectric		
A | 109 to	7.37006	5
B | 257 °C	1822.6	5
C	200.	5
A* | 109 to	2.17708	5
B* | 247 °C	1734.5	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	227.42	5

		Ref.
dt/dP °C/mm		
25°C	64.86	5
BP	0.0517	5
t_e	0.0341	5
30 mm	0.7598	5
ΔHm cal/g		
ΔHv cal/g		
25°C	49.82	5
30 mm	43.24	5
BP	36.63	5
t_e	35.31	5
t_e (d,e)	35.16	5
$\Delta Hv/T_e$	20.80	5
d | 109 to	50.71	5
e | 247 °C	0.0684	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0031	5
30 mm	1.0000	5
BP	0.9333	5
t_e	0.9160	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.		

		Ref.
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	40.74	5
γ 30	40.50	5
40	40.26	5
Parachor [P] 20°C		
30		
40		
Sugd.	342.9	5
Exp. L. 1. %/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. 79

NAME	1,3-Dibromo-2-(bromomethyl)-propane	STRUCTURAL FORMULA
		$CH_2BrCH(CH_2Br)CH_2Br$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_7Br_3$	Molecular Weight 294.844

		Ref.
F.P. °C	-32.	3
F.P. 100%		
B.P. °C 760 mm	320.	3
100	239.	5
30	202.	5
10	173.	5
1	126.	5
Pressure mm 25°C t_e	1556.4	5
Density g/ml 20°C	2.14	3
d_4^{t} 25	2.14	3
30		
a	2.1400	5
b		
Ref. Index n_D 20°C	1.5512	3
25	1.5492	3
30		
"C"	0.3368	4
MR (Obs.)	43.971	4
MR (Calc.) (nD-d/2)	43.967	5
Dielectric		
A | 202 to	7.38430	5
B | 387 °C	2242.7	5
C	178.	5
A* | 202 to	2.13724	5
B* | 377 °C	2149.6	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	356.98	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0632	5
t_e	0.0356	5
30 mm	0.9304	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	54.43	5
BP	45.06	5
t_e	42.60	5
t_e (d, e)	42.13	5
$\Delta Hv/T_e$	19.93	5
d | 202 to	70.40	5
e | 377 °C	0.0792	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	0.9154	5
t_e	0.8877	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	38.37	5
σ 30	38.37	5
40	38.37	5
Parachor [P] 20°C		
30		
40		
Sugd.	342.9	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 80

NAME	1, 1, 2, 2-Tetrabromoethane	STRUCTURAL FORMULA
		$CHBr_2CHBr_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_2Br_4$	Molecular Weight 345.700

		Ref.
F.P. °C	0.	3
F.P. 100%		
B.P. °C		
760 mm	243.5	3
100	172.0	5
30	139.7	5
10	114.8	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
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.) (nD-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

		Ref.
dt/dP		
°C/mm		
25°C	445.0	5
BP	0.0555	5
t_e	0.0346	5
30 mm	0.8161	5
ΔHm cal/g		
ΔHv cal/g		
25°C	48.39	5
30 mm	40.01	5
BP	33.64	5
t_e	32.21	5
t_e (d, e)	32.02	5
$\Delta Hv/T_e$	20.51	5
d | 140 to	48.57	5
e | 290 °C	0.0613	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9958	5
30 mm	1.0000	5
BP	0.9275	5
t_e	0.9068	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.		

		Ref.
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	53.86	5
γ 30	52.04	5
40	50.27	5
Parachor [P]		
20°C		
30		
40		
Sugd.	315.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE III. BROMOALKANES

No. 81

NAME	1, 2, 2, 3-Tetrabromopropane	STRUCTURAL FORMULA
		$CH_2BrCBr_2CH_2Br$
Mole % Pur.	Ref. 3	Molecular Formula $C_3H_4Br_4$ — Molecular Weight 359.720

		Ref.
F.P. °C	10.7	3
F.P. 100%		
B.P. °C		
760 mm	250.	3
100	178.	5
30	145.	5
10	120.	5
1	78.	5
Pressure		
mm 25°C	0.02	5
t_e	1385.7	5
Density		
g/ml 20°C	2.703	3
d_4^t 25	2.690	3
30		
a	2.7550	5
b	-0.00260	5
Ref. Index		
n_D 20°C	1.6200	3
25	1.6170	3
30		
"C"	0.2975	4
MR (Obs.)	46.747	4
MR (Calc.)	47.114	5
(nD-d/2)		
Dielectric		
A | 145 to	7.38145	5
B | 307 °C	1989.3	5
C	192.	5
A* | 145 to	2.25162	5
B* | 297 °C	1898.4	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	277.19	5

		Ref.
dt/dP		
°C/mm		
25°C	627.7	5
BP	0.0561	5
t_e	0.0347	5
30 mm	0.8261	5
ΔHm cal/g		
ΔHv cal/g		
25°C	47.53	5
30 mm	38.96	5
BP	32.69	5
t_e	31.26	5
t_e (d, e)	31.07	5
$\Delta Hv/T_e$	20.43	5
d | 145 to	47.59	5
e | 297 °C	0.0596	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9950	5
30 mm	1.0000	5
BP	0.9262	5
t_e	0.9050	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	50.52	5
σ 30	48.60	5
40	46.74	5
Parachor [P]		
20°C		
30		
40		
Sugd.	354.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE IV. IODOALKANES

No. 1

NAME	Iodomethane	STRUCTURAL FORMULA
		CH_3I

Mole % Pur.	Ref. 3	Molecular Formula CH_3I	Molecular Weight 141.944

		Ref.
F. P. °C	-66.45	3
F. P. 100%		
B. P. °C 760 mm	42.43	3
100	-6.91	5
30	-28.59	5
10	-45.01	5
1	-72.04	5
Pressure mm 25°C	405.9	5
t_e	844.0	5
Density g/ml 20°C	2.2790	3
d_4^{t} 25	2.2650	3
30		
a	2.3355	5
b	-0.00269	5
Ref. Index n_D 20°C	1.5308	3
25	1.5270	3
30		
"C"	0.3053	4
MR (Obs.)	19.264	4
MR (Calc.) (nD-d/2)	19.618	5
Dielectric		
A | -29 to	6.87991	3
B | 76 °C	1093.235	3
C	230.94	3
A* | -29 to	1.49998	5
B* | 66 °C	1022.67	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	45.58	5

		Ref.
dt/dP °C/mm		
25°C	0.0641	5
BP	0.0391	5
t_e	0.0360	5
30 mm	0.5422	5
ΔHm cal/g		
ΔHv cal/g		
25°C	46.35	5
30 mm	51.47	5
BP	44.72	5
t_e	44.43	5
t_e (d, e)	44.42	5
ΔHv/T_e	19.79	5
d | -29 to	48.76	5
e | 66 °C	0.0950	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9705	5
30 mm	1.0000	5
BP	0.9547	5
t_e	0.9517	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.		

		Ref.
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	10.75	5
σ 30	10.20	5
40	9.67	5
Parachor [P] 20°C		
30		
40		
Sugd.	112.9	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 2

NAME	Iodoethane	STRUCTURAL FORMULA
		CH_2ICH_3

Mole % Pur.	Ref. 3	Molecular Formula C_2H_5I	Molecular Weight 155.970

		Ref.
F.P. °C	-111.1	3
F.P. 100%		
B.P. °C		
760 mm	72.30	3
100	18.06	5
30	-5.70	5
10	-23.66	5
1	-53.17	5
Pressure mm 25°C	136.2	5
t_e	924.0	5
Density g/ml 20°C	1.9358	3
d_4^t 25	1.9245	3
30		
a	1.9811	5
b	-0.00222	5
Ref. Index		
n_D 20°C	1.5133	3
25	1.5101	3
30		
"C"	0.3483	4
MR (Obs.)	24.229	4
MR (Calc.) (nD-d/2)	24.236	5
Dielectric		
A | -6 to	6.83198	3
B | 109 °C	1175.709	3
C	225.26	3
A* | -6 to	1.46454	5
B* | 99 °C	1101.43	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	78.83	5

		Ref.
dt/dP °C/mm		
25°C	0.1699	5
BP	0.0430	5
t_e	0.0370	5
30 mm	0.5936	5
ΔHm cal/g		
ΔHv cal/g		
25°C	48.29	5
30 mm	51.17	5
BP	44.00	5
t_e	43.44	5
t_e (d,e)	43.40	5
$\Delta Hv/T_e$	19.25	5
d | -6 to	50.65	5
e | 99 °C	0.0919	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9870	5
30 mm	1.0000	5
BP	0.9496	5
t_e	0.9436	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.		

			Ref.
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		12.61	5
γ 30		12.02	5
40		11.44	5
Parachor [P]			
20°C			
30			
40			
Sugd.		151.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 3

NAME	1-Iodopropane	STRUCTURAL FORMULA
		$CH_2ICH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_7I	Molecular Weight 169.996

		Ref.
F.P. °C	-101.3	3
F.P. 100%		
B.P. °C		
760 mm	102.45	3
100	43.56	5
30	17.80	5
10	-1.67	5
1	-33.64	5
Pressure mm 25°C	43.09	5
t_e	1004.1	5
Density g/ml 20°C	1.7489	3
d_4^t 25	1.7394	3
30		
a	1.7869	5
b	-0.00188	5
Ref. Index n_D 20°C	1.5058	3
25	1.5028	3
30		
"C"	0.3803	4
MR (Obs.)	28.869	4
MR (Calc.) (nD-d/2)	28.854	5
Dielectric		
A | 18 to	6.81603	3
B | 143 °C	1267.062	3
C	219.53	3
A* | 18 to	1.46005	5
B* | 133 °C	1189.29	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	112.66	5

		Ref.
dt/dP °C/mm		
25°C	0.4756	5
BP	0.0468	5
t_e	0.0377	5
30 mm	0.6435	5
ΔHm cal/g		
ΔHv cal/g		
25°C	50.58	5
30 mm	51.25	5
BP	43.68	5
t_e	42.83	5
t_e (d, e)	42.76	5
$\Delta Hv/T_e$	18.87	5
d | 18 to	52.84	5
e | 133 °C	0.0894	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9978	5
30 mm	1.0000	5
BP	0.9446	5
t_e	0.9354	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.		

		Ref.
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	14.87	5
γ 30	14.22	5
40	13.60	5
Parachor [P] 20°C		
30		
40		
Sugd.	190.9	5
Exp. L.1.%/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

No. 4

NAME	1-Iodobutane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_9I	Molecular Weight 184.022

		Ref.
F.P. °C	-103.0	3
F.P. 100%		
B.P. °C		
760 mm	130.53	3
100	67.57	5
30	40.01	5
10	19.18	5
1	-15.03	5
Pressure mm 25°C	13.86	5
t_e	1078.0	5
Density g/ml 20°C	1.6154	3
d_4^t 25	1.6072	3
30		
a	1.6482	5
b	-0.00163	5
Ref. Index n_D 20°C	1.5001	3
25	1.4973	3
30		
"C"	0.4073	4
MR (Obs.)	33.511	4
MR (Calc.) (nD-d/2)	33.472	5
Dielectric		
A | 40 to	6.82262	3
B | 174 °C	1358.860	3
C	214.20	3
A* | 40 to	1.47905	5
B* | 164 °C	1278.08	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	144.34	5

		Ref.
dt/dP °C/mm		
25°C	1.319	5
BP	0.0500	5
t_e	0.0381	5
30 mm	0.6884	5
ΔHm cal/g		
ΔHv cal/g		
25°C	52.66	5
30 mm	51.27	5
BP	43.38	5
t_e	42.27	5
t_e (d, e)	42.17	5
$\Delta Hv/T_e$	18.63	5
d | 40 to	54.75	5
e | 164 °C	0.0872	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0032	5
30 mm	1.0000	5
BP	0.9401	5
t_e	0.9281	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.		

			Ref.
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		16.58	5
γ 30		15.92	5
40		15.27	5
Parachor [P]			
20°C			
30			
40			
Sugd.		229.9	5
Exp. L. 1. %/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

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TABLE IV. IODOALKANES

No. 5

NAME	1-Iodopentane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_3CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{11}I$	Molecular Weight 198.048

		Ref.
F.P. °C	-85.6	3
F.P. 100%		
B.P. °C		
760 mm	157.00	3
100	90.52	5
30	61.37	5
10	39.31	5
1	3.04	5
Pressure		
mm 25°C	4.39	5
t_e	1147.4	5
Density		
g/ml 20°C	1.5161	3
d_4^t 25	1.5088	3
30		
a	1.5453	5
b	-0.00146	5
Ref. Index		
n_D 20°C	1.4959	3
25	1.4933	3
30		
"C"	0.4306	4
MR (Obs.)	38.153	4
MR (Calc.) (nD-d/2)	38.090	5
Dielectric		
A | 61 to	6.85172	3
B | 204 °C	1454.028	3
C	209.17	3
A* | 61 to	1.52040	5
B* | 194 °C	1370.50	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	174.28	5

		Ref.
dt/dP		
°C/mm		
25°C	3.731	5
BP	0.0527	5
t_e	0.0383	5
30 mm	0.7287	5
ΔHm cal/g		
ΔHv cal/g		
25°C	54.71	5
30 mm	51.35	5
BP	43.21	5
t_e	41.87	5
t_e (d, e)	41.74	5
$\Delta Hv/T_e$	18.53	5
d | 61 to	56.58	5
e | 194 °C	0.0851	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0047	5
30 mm	1.0000	5
BP	0.9364	5
t_e	0.9217	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.		

			Ref.
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		17.95	5
γ 30		17.27	5
40		16.61	5
Parachor [P]			
20°C			
30			
40			
Sugd.		268.9	5
Exp. L.1.%/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

No. 6

NAME	1-Iodohexane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_4CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{13}I$	Molecular Weight 212.074

		Ref.
F.P. °C	-75.	3
F.P. 100%		
B.P. °C		
760 mm	181.33	3
100	111.90	5
30	81.37	5
10	58.23	5
1	20.12	5
Pressure mm 25°C	1.40	5
t_e	1210.2	5
Density g/ml 20°C	1.4397	3
d_4^t 25	1.4331	3
30		
a	1.4661	5
b	-0.00132	5
Ref. Index n_D 20°C	1.4928	3
25	1.4903	3
30		
"C"	0.4508	4
MR (Obs.)	42.795	4
MR (Calc.) (nD-d/2)	42.708	5
Dielectric		
A | 81 to	6.8954	3
B | 232 °C	1549.17	3
C	204.55	3
A* | 81 to	1.5776	5
B* | 222 °C	1463.47	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	201.79	5

		Ref.
dt/dP °C/mm		
25°C	10.54	5
BP	0.0549	5
t_e	0.0382	5
30 mm	0.7639	5
ΔHm cal/g		
ΔHv cal/g		
25°C	56.60	5
30 mm	51.38	5
BP	43.04	5
t_e	41.49	5
t_e (d, e)	41.33	5
$\Delta Hv/T_e$	18.53	5
d | 81 to	58.17	5
e | 222 °C	0.0834	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0037	5
30 mm	1.0000	5
BP	0.9329	5
t_e	0.9159	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.		

		Ref.
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	19.09	5
γ 30	18.40	5
40	17.72	5
Parachor [P]		
20°C		
30		
40		
Sugd.	307.9	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

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TABLE IV. IODOALKANES

No. 7

NAME	1-Iodoheptane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_5CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{15}I$	Molecular Weight 226.100

		Ref.
F.P. °C	-48.2	3
F.P. 100%		
B.P. °C		
760 mm	203.95	3
100	132.01	5
30	100.26	5
10	76.16	5
1	36.38	5
Pressure		
mm 25°C	0.45	5
t_e	1268.3	5
Density		
g/ml 20°C	1.3791	3
d_4^{t} 25	1.3730	3
30		
a	1.4035	5
b	-0.00122	5
Ref. Index		
n_D 20°C	1.4904	3
25	1.4880	3
30		
"C"	0.4685	4
MR (Obs.)	47.433	4
MR (Calc.) (nD-d/2)	47.326	5
Dielectric		
A | 100 to	6.9488	3
B | 257 °C	1644.29	3
C	200.25	3
A* | 100 to	1.6444	5
B* | 247 °C	1556.67	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	227.33	5

		Ref.
dt/dP		
°C/mm		
25°C	30.07	5
BP	0.0568	5
t_e	0.0381	5
30 mm	0.7951	5
ΔHm cal/g		
ΔHv cal/g		
25°C	58.35	5
30 mm	51.37	5
BP	42.88	5
t_e	41.15	5
t_e (d, e)	40.96	5
$\Delta Hv/T_e$	18.59	5
d | 100 to	59.58	5
e | 247 °C	0.0819	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0008	5
30 mm	1.0000	5
BP	0.9298	5
t_e	0.9109	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.		

			Ref.
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		20.04	5
σ 30		19.34	5
40		18.66	5
Parachor [P]			
20°C			
30			
40			
Sugd.		346.9	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 8

NAME	1-Iodooctane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_6CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{17}I$	Molecular Weight 240.126

		Ref.
F.P. °C	-45.7	3
F.P. 100%		
B.P. °C		
760 mm	225.11	3
100	150.99	5
30	118.16	5
10	93.19	5
1	51.88	5
Pressure mm 25°C	0.14	5
t_e	1322.2	5
Density g/ml 20°C	1.3298	3
d^t_4 25	1.3241	3
30		
a	1.3526	5
b	-0.00114	5
Ref. Index		
n_D 20°C	1.4885	3
25	1.4862	3
30		
"C"	0.4841	4
MR (Obs.)	52.071	4
MR (Calc.) (nD-d/2)	51.944	5
Dielectric		
A | 118 to	7.0070	3
B | 281 °C	1738.53	3
C	196.23	3
A* | 118 to	1.7162	5
B* | 271 °C	1649.30	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	251.19	5

		Ref.
dt/dP °C/mm		
25°C	86.85	5
BP	0.0584	5
t_e	0.0378	5
30 mm	0.8230	5
ΔHm cal/g		
ΔHv cal/g		
25°C	59.97	5
30 mm	51.31	5
BP	42.70	5
t_e	40.82	5
t_e (d, e)	40.60	5
$\Delta Hv/T_e$	18.69	5
d | 118 to	60.82	5
e | 271 °C	0.0805	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9967	5
30 mm	1.0000	5
BP	0.9271	5
t_e	0.9063	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.		

		Ref.
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	20.86	5
γ 30	20.15	5
40	19.46	5
Parachor [P]		
20°C		
30		
40		
Sugd.	385.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 9

NAME	1-Iodononane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_7CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{19}I$	Molecular Weight 254.152

		Ref.
F.P. °C	-20.	3
F.P. 100%		
B.P. °C		
760 mm	245.0	3
100	168.9	5
30	135.1	5
10	109.3	5
1	66.6	5
Pressure		
mm 25°C	0.04	5
t_e	1372.5	5
Density		
g/ml 20°C	1.2890	3
d_4^t 25	1.2836	3
30		
a	1.3106	5
b	-0.00108	5
Ref. Index		
n_D 20°C	1.4870	3
25	1.4848	3
30		
"C"	0.4979	4
MR (Obs.)	56.708	4
MR (Calc.) (nD-d/2)	56.562	5
Dielectric		
A | 135 to	7.0645	3
B | 304 °C	1830.37	3
C	192.5	3
A* | 135 to	1.7872	5
B* | 294 °C	1739.77	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	273.60	5

		Ref.
dt/dP		
°C/mm		
25°C	251.9	5
BP	0.0598	5
t_e	0.0376	5
30 mm	0.8488	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.43	5
30 mm	51.16	5
BP	42.47	5
t_e	40.45	5
t_e (d, e)	40.21	5
ΔHv/T_e	18.80	5
d | 135 to	61.85	5
e | 294 °C	0.0791	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9919	5
30 mm	1.0000	5
BP	0.9246	5
t_e	0.9022	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.		

			Ref.
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		21.57	5
σ	30	20.85	5
	40	20.16	5
Parachor [P]			
	20°C		
	30		
	40		
	Sugd.	424.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 10

NAME	1-Iododecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_8CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{21}I$	Molecular Weight 268.178

		Ref.
F.P. °C	-16.3	3
F.P. 100%		
B.P. °C		
760 mm	263.7	3
100	185.9	5
30	151.2	5
10	124.7	5
1	80.7	5
Pressure mm 25°C	0.01	5
t_e	1419.0	5
Density g/ml 20°C	1.2546	3
d_4^t 25	1.2494	3
30		
a	1.2754	5
b	-0.00104	5
Ref. Index		
n_D 20°C	1.4858	3
25	1.4836	3
30		
"C"	0.5104	4
MR (Obs.)	61.349	4
MR (Calc.) (nD-d/2)	61.180	5
Dielectric		
A 151 to	7.1220	3
B 325 °C	1919.75	3
C	188.9	3
A* 151 to	1.8586	5
B* 315 °C	1828.20	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	294.66	5

		Ref.
dt/dP °C/mm		
25°C	737.8	5
BP	0.0610	5
t_e	0.0373	5
30 mm	0.8722	5
ΔHm cal/g		
ΔHv cal/g		
25°C	62.83	5
30 mm	50.98	5
BP	42.25	5
t_e	40.06	5
t_e (d, e)	39.84	5
$\Delta Hv/T_e$	18.92	5
d 151 to	62.72	5
e 315 °C	0.0776	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9873	5
30 mm	1.0000	5
BP	0.9230	5
t_e	0.8982	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.		

			Ref.
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		22.18	5
γ 30		21.46	5
40		20.75	5
Parachor [P]			
20°C			
30			
40			
Sugd.		463.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 11

NAME	1-Iodoundecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_9CH_3$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{11}H_{23}I$	282.204

		Ref.
F.P. °C	2.0	3
F.P. 100%		
B.P. °C		
760 mm	281.5	3
100	202.0	5
30	166.5	5
10	139.3	5
1	94.0	5
Pressure mm 25°C		
t_e	1462.7	5
Density g/ml 20°C	1.2253	3
d_4^{t} 25	1.2203	3
30		
a	1.2453	5
b	-0.00100	5
Ref. Index n_D 20°C	1.4848	3
25	1.4827	3
30		
"C"	0.5216	4
MR (Obs.)	65.985	4
MR (Calc.) (nD-d/2)	65.798	5
Dielectric		
A | 167 to	7.1772	3
B | 345 °C	2006.28	3
C	185.5	3
A* | 167 to	1.9274	5
B* | 335 °C	1913.95	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	314.57	5

		Ref.
dt/dP °C/mm		
25°C	2166.	5
BP	0.0621	5
t_e	0.0370	5
30 mm	0.8939	5
ΔHm cal/g		
ΔHv cal/g		
25°C	64.12	5
30 mm	50.74	5
BP	41.89	5
t_e	39.64	5
t_e (d, e)	39.34	5
$\Delta Hv/T_e$	19.04	5
d | 167 to	63.54	5
e | 335 °C	0.0769	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9825	5
30 mm	1.0000	5
BP	0.9192	5
t_e	0.8945	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.		

			Ref.
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		22.73	5
σ 30		22.00	5
40		21.28	5
Parachor [P] 20°C			
30			
40			
Sugd.		502.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 12

NAME	1-Iodododecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{10}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{12}H_{25}I$	Molecular Weight 296.230

		Ref.
F.P. °C	0.3	3
F.P. 100%		
B.P. °C		
760 mm	298.2	3
100	217.3	5
30	181.0	5
10	153.1	5
1	106.7	5
Pressure mm 25°C		
t_e	1503.4	5
Density		
g/ml 20°C	1.1999	3
d_4^t 25	1.1951	3
30		
a	1.2191	5
b	-0.03960	5
Ref. Index		
n_D 20°C	1.4840	3
25	1.4819	3
30		
"C"	0.5318	4
MR (Obs.)	70.632	4
MR (Calc.) (nD-d/2)	70.416	5
Dielectric		
A | 181 to	7.2290	3
B | 363 °C	2089.47	3
C	182.3	3
A* | 181 to	1.9931	5
B* | 353 °C	1996.66	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	333.37	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0632	5
t_e	0.0368	5
30 mm	0.9143	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	50.42	5
BP	41.58	5
t_e	39.19	5
t_e (d, e)	38.93	5
$\Delta Hv/T_e$	19.14	5
d | 181 to	64.07	5
e | 353 °C	0.0754	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	0.9182	5
t_e	0.8909	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.		

		Ref.
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	23.21	5
γ 30	22.48	5
40	21.76	5
Parachor [P]		
20°C		
30		
40		
Sugd.	541.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 13

NAME	1-Iodotridecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{11}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{13}H_{27}I$	Molecular Weight 310.256

		Ref.
F.P. °C	12.3	3
F.P. 100%		
B.P. °C 760 mm	314.	3
100	232.	5
30	195.	5
10	167.	5
1	119.	5
Pressure mm 25°C t_e	1542.6	5
Density g/ml 20°C	1.1778	3
d_4^{t} 25	1.1731	3
30		
a	1.1966	5
b	-0.03940	5
Ref. Index n_D 20°C	1.4833	3
25	1.4812	3
30		
"C"	0.5411	4
MR (Obs.)	75.271	4
MR (Calc.) (nD-d/2)	75.034	5
Dielectric		
A | 195 to	7.277	3
B | 382 °C	2169.2	3
C	179.	3
A* | 195 to	2.054	5
B* | 372 °C	2076.1	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	351.53	5

			Ref.
dt/dP °C/mm 25°C			
BP	0.0641		5
t_e	0.0365		5
30 mm	0.9335		5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm	50.11		5
BP	41.52		5
t_e	38.73		5
t_e (d, e)	38.81		5
$\Delta Hv/T_e$	19.23		5
d | 195 to	64.19		5
e | 372 °C	0.0722		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	0.9237		5
t_e	0.8876		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.			

			Ref.
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		23.65	5
δ 30		22.90	5
40		22.17	5
Parachor [P] 20°C			
30			
40			
Sugd.		580.9	5
Exp. L.1.%/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

No. 14

NAME	1-Iodotetradecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{12}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{14}H_{29}I$	Molecular Weight 324.282

		Ref.
F.P. °C	13.6	3
F.P. 100%		
B.P. °C		
760 mm	329.	3
100	246.	5
30	208.	5
10	179.	5
1	131.	5
Pressure mm 25°C		
t_e	1579.1	5
Density g/ml 20°C	1.1584	3
d_4^t 25	1.1538	3
d_4 30		
a	1.1768	5
b	-0.0_3920	5
Ref. Index		
n_D 20°C	1.4827	3
25	1.4806	3
30		
"C"	0.5495	4
MR (Obs.)	79.907	4
MR (Calc.) (nD-d/2)	79.652	5
Dielectric		
A | 208 to	7.322	3
B | 399 °C	2245.4	3
C	176.	3
A* | 208 to	2.112	5
B* | 389 °C	2152.0	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	368.53	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0651	5
t_e	0.0363	5
30 mm	0.9515	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	49.72	5
BP	41.22	5
t_e	38.23	5
t_e (d, e)	38.44	5
ΔHv/T_e	19.32	5
d | 208 to	64.35	5
e | 389 °C	0.0703	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	0.9248	5
t_e	0.8845	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.		

			Ref.
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		24.05	5
γ 30		23.29	5
40		22.55	5
Parachor [P]			
20°C			
30			
40			
Sugd.		619.9	5
Exp. L.	1. %/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 IV. IODOALKANES

No. 15

NAME	1-Iodopentadecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{13}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{15}H_{31}I$	Molecular Weight 338.308

		Ref.
F. P. °C	24.0	3
F. P. 100%		
B. P. °C 760 mm	344.	3
100	259.	5
30	220.	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^{t} 25	1.1366	3
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	174.	3
A* 220 to	2.163	5
B* 404 °C	2224.5	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	384.28	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0660	5
t_e	0.0362	5
30 mm	0.9697	5
ΔHm cal/g		
ΔHv 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
$\Delta Hv/T_e$	19.35	5
d 220 to	65.40	5
e 404 °C	0.0741	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	0.9034	5
t_e	0.8815	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.		

		Ref.
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	24.40	5
σ 30	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

No. 16

NAME	1-Iodohexadecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{14}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{33}I$	Molecular Weight 352.334

		Ref.
F.P. °C	24.7	3
F.P. 100%		
B.P. °C		
760 mm	357.	3
100	271.	5
30	232.	5
10	202.	5
1	152.	5
Pressure mm 25°C		
t_e	1644.9	5
Density g/ml 20°C	1.1257[a]	3
d_4^{t} 25	1.1213	3
30		
a	1.1433	5
b	-0.0_3880	5
Ref. Index		
n_D 20°C	1.4818[a]	3
25	1.4797	3
30		
"C"	0.5645	4
MR (Obs.)	89.199	4
MR (Calc.) (nD-d/2)	88.888	5
Dielectric		
A 232 to	7.401	3
B 430 °C	2388.0	3
C	171.	3
A* 232 to	2.217	5
B* 420 °C	2294.3	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	399.63	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0668	5
t_e	0.0360	5
30 mm	0.9851	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	48.70	5
BP	40.02	5
t_e	37.12	5
t_e (d, e)	37.06	5
$\Delta Hv/T_e$	19.44	5
d 232 to	64.84	5
e 420 °C	0.0695	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	0.9154	5
t_e	0.8788	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.		

		Ref.
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	24.72	5
γ 30	23.96	5
40	23.21	5
Parachor [P]		
20°C		
30		
40		
Sugd.	697.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 17

NAME	1-Iodoheptadecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{15}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{17}H_{35}I$	Molecular Weight 366.360

		Ref.
F.P. °C	33.7	3
F.P. 100%		
B.P. °C 760 mm	371.	3
100	283.	5
30	244.	5
10	213.	5
1	162.	5
Pressure mm 25°C t_e	1675.9	5
Density g/ml 20°C	1.1119[a]	3
d_4^{t} 25 30	1.1076[a]	3
a	1.1291	5
b	-0.0_3860	5
Ref. Index n_D 20°C	1.4814[a]	3
25	1.4794[a]	3
30		
"C"	0.5710	4
MR (Obs.)	93.834	4
MR (Calc.) (nD-d/2)	93.506	5
Dielectric		
A 244 to	7.437	3
B 445 °C	2454.6	3
C	168.	3
A* 244 to	2.266	5
B* 435 °C	2361.4	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	414.66	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0676	5
t_e	0.0358	5
30 mm	1.0004	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	48.29	5
BP	39.20	5
t_e	36.60	5
t_e (d, e)	36.08	5
$\Delta Hv/T_e$	19.50	5
d 244 to	65.73	5
e 435 °C	0.0715	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	0.9030	5
t_e	0.8758	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.		

		Ref.
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	25.02	5
30	24.25	5
40	23.51	5
Parachor [P] 20°C		
30		
40		
Sugd.	736.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 18

NAME	1-Iodooctadecane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{16}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{37}I$	Molecular Weight 380.386

		Ref.
F.P. °C	34.0	3
F.P. 100%		
B.P. °C 760 mm	383.	3
100	295.	5
30	254.	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_4^t 25	1.0952[a]	3
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.) (nD-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_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	428.38	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0684	5
t_e		0.0357	5
30 mm		1.0156	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		47.69	5
BP		38.79	5
t_e		36.00	5
t_e (d, e)		35.65	5
$\Delta Hv/T_e$		19.52	5
d | 254 to		65.29	5
e | 448 °C		0.0692	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		0.9052	5
t_e		0.8730	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.			

			Ref.
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		25.29	5
γ 30		24.53	5
40		23.78	5
Parachor [P]			
20°C			
30			
40			
Sugd.		775.9	5
Exp. L.1.%/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
		$CH_2I(CH_2)_{17}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{19}H_{39}I$	Molecular Weight 394.412

		Ref.
F.P. °C	42.0	3
F.P. 100%		
B.P. °C 760 mm	395.	3
100	305.	5
30	265.	5
10	233.	5
1	180.	5
Pressure mm 25°C t_e	1731.9	5
Density g/ml 20°C	1.0881[a]	3
d_4^{t} 25	1.0839[a]	3
30		
a	1.1049	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		
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	441.85	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0692	5
t_e	0.0357	5
30 mm	1.0305	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	47.11	5
BP	38.23	5
t_e	35.41	5
t_e (d, e)	35.04	5
ΔHv/T_e	19.53	5
d | 265 to	65.13	5
e | 462 °C	0.0681	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	0.9029	5
t_e	0.8706	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.		

			Ref.
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		25.54	5
γ 30		24.76	5
40		24.00	5
Parachor [P] 20°C			
30			
40			
Sugd.		814.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 20

NAME	1-Iodoeicosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{18}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{41}I$	Molecular Weight 408.438

		Ref.
F.P. °C	41.9	3
F.P. 100%		
B.P. °C 760 mm	407.	3
100	316.	5
30	275.	5
10	243.	5
1	189.	5
Pressure mm 25°C t_e	1758.7	5
Density g/ml 20°C	1.0778[a]	3
d_4^t 25	1.0736[a]	3
30		
a	1.0946	5
b	-0.03840	5
Ref. Index n_D 20°C	1.4805[a]	3
25	1.4785[a]	3
30		
"C"	0.5881	4
MR (Obs.)	107.749	4
MR (Calc.) (nD-d/2)	107.360	5
Dielectric		
A | 275 to	7.524	3
B | 485 °C	2640.9	3
C	162.	3
A* | 275 to	2.389	5
B* | 475 °C	2548.2	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	455.20	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0700	5
t_e		0.0356	5
30 mm		1.0456	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		46.54	5
BP		37.60	5
t_e		34.82	5
t_e (d, e)		34.34	5
$\Delta Hv/T_e$		19.52	5
d | 275 to		65.11	5
e | 475 °C		0.0676	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		0.8986	5
t_e		0.8678	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.			

		Ref.
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	25.78	5
γ 30	24.99	5
40	24.21	5
Parachor [P] 20°C		
30		
40		
Sugd.	853.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 21

NAME	1-Iodoheneicosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{19}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{21}H_{43}I$	Molecular Weight 422.464

		Ref.
F.P. °C	49.1	3
F.P. 100%		
B.P. °C 760 mm	418.	3
100	323.	5
30	280.	5
10	247.	5
1	192.	5
Pressure mm 25°C t_e	1784.4	5
Density g/ml 20°C	1.0683[a]	3
d_4^{t} 25 30	1.0642[a]	3
a	1.0847	5
b	-0.0_3820	5
Ref. Index n_D 20°C	1.4802[a]	3
25	1.4782[a]	3
30		
"C"	0.5929	4
MR (Obs.)	112.380	4
MR (Calc.) (nD-d/2)	111.978	5
Dielectric		
A | 280 to	7.35811	5
B | 500 °C	2587.9	5
C	160.	5
A* | 280 to	2.23324	5
B* | 490 °C	2494.2	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	470.17	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0738	5
t_e	0.0373	5
30 mm	1.0832	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	44.28	5
BP	35.65	5
t_e	32.72	5
t_e (d, e)	32.39	5
ΔHv/T_e	18.59	5
d | 280 to	61.79	5
e | 490 °C	0.0625	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	0.8997	5
t_e	0.8628	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.		

		Ref.
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	25.99	5
γ 30	25.20	5
40	24.43	5
Parachor [P] 20°C		
30		
40		
Sugd.	892.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 22

NAME	1-Iododocosane	STRUCTURAL FORMULA
		$CH_2I(CH_3)_{20}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{45}I$	Molecular Weight 436.490

		Ref.
F.P. °C	48.8	3
F.P. 100%		
B.P. °C 760 mm	428.	3
100	332.	5
30	288.	5
10	255.	5
1	199.	5
Pressure mm 25°C t_e	1807.2	5
Density g/ml 20°C	1.0596[a]	3
d_4^t 25	1.0555[a]	3
30		
a	1.0760	5
b	-0.0_3820	5
Ref. Index n_D 20°C	1.4800[a]	3
25	1.4780[a]	3
30		
"C"	0.5976	4
MR (Obs.)	117.023	4
MR (Calc.) (nD-d/2)	116.596	5
Dielectric		
A | 288 to	7.36980	5
B | 512 °C	2630.5	5
C	158.	5
A* | 288 to	2.25619	5
B* | 502 °C	2537.1	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	481.60	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0746	5
t_e		0.0374	5
30 mm		1.0967	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		43.62	5
BP		35.05	5
t_e		32.07	5
t_e (d, e)		31.76	5
$\Delta Hv/T_e$		18.55	5
d | 288 to		61.33	5
e | 502 °C		0.0614	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		0.8983	5
t_e		0.8606	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.			

			Ref.
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		26.19	5
30		25.39	5
40		24.61	5
Parachor [P] 20°C			
30			
40			
Sugd.		931.9	5
Exp. L. 1. %/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

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TABLE IV. IODOALKANES

No. 23

NAME	1-Iodotricosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{21}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{23}H_{47}I$	Molecular Weight 450.516

		Ref.
F.P. °C	55.2	3
F.P. 100%		
B.P. °C 760 mm	439.	3
100	342.	5
30	298.	5
10	264.	5
1	207.	5
Pressure mm 25°C t_e	1831.8	5
Density g/ml 20°C	1.0516[a]	3
d_4^{t} 25	1.0476[a]	3
30		
a	1.0676	5
b	-0.0_3800	5
Ref. Index n_D 20°C	1.4798[a]	3
25	1.4778[a]	3
30		
"C"	0.6019	4
MR (Obs.)	121.659	4
MR (Calc.) (nD-d/2)	121.214	5
Dielectric		
A | 298 to	7.38393	5
B | 524 °C	2679.4	5
C	156.	5
A* | 298 to	2.28107	5
B* | 514 °C	2586.3	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	494.16	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0755	5
t_e	0.0374	5
30 mm	1.1117	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	43.07	5
BP	34.53	5
t_e	31.52	5
t_e (d, e)	31.20	5
$\Delta Hv/T_e$	18.51	5
d | 298 to	61.03	5
e | 514 °C	0.0603	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	0.8967	5
t_e	0.8581	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.		

			Ref.
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		26.38	5
γ 30		25.59	5
40		24.81	5
Parachor [P] 20°C			
30			
40			
Sugd.		970.9	5
Exp. L.1.%/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

No. 24

NAME	1-Iodotetracosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{22}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{49}I$	Molecular Weight 464.542

		Ref.
F.P. °C	54.7	3
F.P. 100%		
B.P. °C 760 mm	449.	3
100	351.	5
30	306.	5
10	272.	5
1	214.	5
Pressure mm 25°C t_e	1854.3	5
Density g/ml 20°C	1.0442[a]	3
d_4^t 25	1.0402[a]	3
30		
a	1.0602	5
b	-0.0_3800	5
Ref. Index n_D 20°C	1.4797[a]	3
25	1.4777[a]	3
30		
"C"	0.6060	4
MR (Obs.)	126.313	4
MR (Calc.) (nD-d/2)	125.832	5
Dielectric		
A 306 to	7.39507	5
B 536 °C	2722.1	5
C	154.	5
A* 306 to	2.30280	5
B* 526 °C	2629.4	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	505.60	5

			Ref.
dt/dP °C/mm			
25°C			
BP		0.0763	5
t_e		0.0374	5
30 mm		1.1252	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		42.48	5
BP		33.99	5
t_e		30.94	5
t_e (d, e)		30.63	5
$\Delta Hv/T_e$		18.46	5
d 306 to		60.64	5
e 526 °C		0.0594	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		0.8953	5
t_e		0.8558	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.			

			Ref.
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		26.56	5
γ 30		25.75	5
40		24.96	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1009.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE IV. IODOALKANES

No. 25

NAME	1-Iodopentacosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{23}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{25}H_{51}I$	Molecular Weight 478.568

		Ref.
F.P. °C	60.6	3
F.P. 100%		
B.P. °C 760 mm	458.	3
100	324.	5
30	269.	5
10	229.	5
1	165.	5
Pressure mm 25°C t_e	1870.9	5
Density g/ml 20°C	1.0373[a]	3
d_4^{t} 25	1.0333[a]	3
30		
a	1.0533	5
b	-0.0_3800	5
Ref. Index n_D 20°C	1.4795[a]	3
25	1.4775[a]	3
30		
"C"	0.6098	4
MR (Obs.)	130.945	4
MR (Calc.) (nD-d/2)	130.450	5
Dielectric		
A | 269 to	6.00236	5
B | 575 °C	1904.1	5
C	152.	5
A* | 269 to	0.91721	5
B* | 565 °C	1804.7	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	545.41	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.1117	5
t_e	0.0593	5
30 mm	1.3461	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	30.18	5
BP	22.64	5
t_e	19.87	5
t_e (d, e)	19.16	5
$\Delta Hv/T_e$	11.61	5
d | 269 to	40.90	5
e | 565 °C	0.0399	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	0.8774	5
t_e	0.8215	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.		

		Ref.
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	26.72	5
γ 30	25.90	5
40	25.11	5
Parachor [P] 20°C		
30		
40		
Sugd.	1048.9	5
Exp. L.1.%/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 26

NAME	1-Iodohexacosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{24}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{26}H_{53}I$	Molecular Weight 492.594

		Ref.
F.P. °C	59.9	3
F.P. 100%		
B.P. °C 760 mm	467.	3
100	367.	5
30	321.	5
10	286.	5
1	227.	5
Pressure mm 25°C t_e	1894.2	5
Density g/ml 20°C	1.0309[a]	3
d_4^t 25	1.0270[a]	3
30		
a	1.0465	5
b	-0.03780	5
Ref. Index n_D 20°C	1.4794[a]	3
25	1.4774[a]	3
30		
"C"	0.6135	4
MR (Obs.)	135.596	4
MR (Calc.) (nD-d/2)	135.068	5
Dielectric		
A 321 to	7.41146	5
B 556 °C	2795.4	5
C	150.	5
A* 321 to	2.34028	5
B* 546 °C	2703.6	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	526.20	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0778	5
t_e	0.0375	5
30 mm	1.1491	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	41.30	5
BP	32.91	5
t_e	29.80	5
t_e (d, e)	29.50	5
$\Delta Hv/T_e$	18.36	5
d 321 to	59.76	5
e 546 °C	0.0575	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	0.8927	5
t_e	0.8517	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.		

		Ref.
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	26.87	5
γ 30	26.07	5
40	25.28	5
Parachor [P] 20°C		
30		
40		
Sugd.	1087.9	5
Exp. L. 1. %/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

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TABLE IV. IODOALKANES

No. 27

NAME	1-Iodoheptacosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{25}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{27}H_{55}I$	Molecular Weight 506.620

		Ref.
F.P. °C	65.3	3
F.P. 100%		
B.P. °C 760 mm	476.	3
100	375.	5
30	329.	5
10	293.	5
1	234.	5
Pressure mm 25°C t_e	1913.9	5
Density g/ml 20°C	1.0249[a]	3
d_4^{t} 25	1.0210[a]	3
30		
a	1.0405	5
b	-0.0_3780	5
Ref. Index n_D 20°C	1.4793[a]	3
25	1.4773[a]	3
30		
"C"	0.6170	4
MR (Obs.)	140.248	4
MR (Calc.) (nD-d/2)	139.686	5
Dielectric		
A 329 to	7.42699	5
B 566 °C	2841.4	5
C	149.	5
A* 329 to	2.36571	5
B* 556 °C	2749.8	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	536.48	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0786	5
t_e		0.0375	5
30 mm		1.1619	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		40.72	5
BP		32.40	5
t_e		29.27	5
t_e (d, e)		28.99	5
ΔHv/T_e		18.32	5
d 329 to		59.25	5
e 556 °C		0.0564	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		0.8913	5
t_e		0.8496	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.			

			Ref.
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		27.01	5
γ 30		26.20	5
40		25.40	5
Parachor [P] 20°C			
30			
40			
Sugd.		1126.9	5
Exp. L.1.%/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

No. 28

NAME	1-Iodooctacosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{26}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{57}I$	Molecular Weight 520.646

		Ref.
F.P. °C	64.6	3
F.P. 100%		
B.P. °C		
760 mm	485.	3
100	383.	5
30	336.	5
10	300.	5
1	240.	5
Pressure mm 25°C		
t_e	1933.2	5
Density g/ml 20°C	1.0194[a]	3
d_4^t 25	1.0155[a]	3
30		
a	1.0350	5
b	-0.0_3780	5
Ref. Index		
n_D 20°C	1.4791[a]	3
25	1.4771[a]	3
30		
"C"	0.6200	4
MR (Obs.)	144.857	4
MR (Calc.) (nD-d/2)	144.304	5
Dielectric		
A | 336 to	7.43473	5
B | 577 °C	2878.1	5
C	147.	5
A* | 336 to	2.38355	5
B* | 567 °C	2787.3	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	546.77	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0793	5
t_e	0.0376	5
30 mm	1.1739	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.21	5
BP	31.92	5
t_e	28.75	5
t_e (d, e)	28.48	5
$\Delta Hv/T_e$	18.26	5
d | 336 to	58.91	5
e | 567 °C	0.0557	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	0.8899	5
t_e	0.8474	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.		

		Ref.
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	27.16	5
γ 30	26.33	5
40	25.53	5
Parachor [P] 20°C		
30		
40		
Sugd.	1165.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 29

NAME	1-Iodononacosane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{27}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{29}H_{59}I$	Molecular Weight 534.672

		Ref.
F. P. °C	69.5	3
F. P. 100%		
B. P. °C 760 mm	493.	3
100	390.	5
30	343.	5
10	307.	5
1	246.	5
Pressure mm 25°C t_e	1950.5	5
Density g/ml 20°C	1.0141[a]	3
d_4^{t} 25 30	1.0103[a]	3
a	1.0293	5
b	-0.03760	5
Ref. Index n_D 20°C	1.4790[a]	3
25	1.4771[a]	3
30		
"C"	0.6232	4
MR (Obs.)	149.510	4
MR (Calc.) (nD-d/2)	148.922	5
Dielectric		
A / B / C 343 to 586 °C	7.43984 / 2908.7 / 145.	5 / 5 / 5
A* / B* / K 343 to 576 °C	2.39862 / 2818.5	5 / 5
c t_k t_x to °C		
A' / B' / C' to °C		
A'* B'* to °C		
Ac / Bc / Cc t_c to °C		
Cryos. A° consts. B°		
t_e °C	555.93	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0800	5
t_e	0.0376	5
30 mm	1.1843	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.67	5
BP	31.43	5
t_e	28.24	5
t_e (d, e)	27.98	5
$\Delta Hv/T_e$	18.21	5
d / e 343 to 576 °C	58.48 / 0.0549	5 / 5
d' / e' to °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	0.8887	5
t_e	0.8456	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v / A^v to °C		
(B^v) / (A^v) to °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

		Ref.
f / g / h to °K		
f' / g' / h' to °K		
m / n / o to °K		
m' / n' / o' to °K		
Surface tension dynes/cm. 20°C	27.28	5
γ 30	26.47	5
40	25.68	5
Parachor [P] 20°C		
30		
40		
Sugd.	1204.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 30

NAME	1-Iodotriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{28}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{61}I$	Molecular Weight 548.698

		Ref.
F.P. °C	68.7	3
F.P. 100%		
B.P. °C 760 mm	501.	3
100	397.	5
30	349.	5
10	313.	5
1	252.	5
Pressure mm 25°C t_e	1967.9	5
Density g/ml 20°C	1.0092[a]	3
d_4^{t} 25	1.0054[a]	3
30		
a	1.0244	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4789[a]	3
25	1.4770[a]	3
30		
"C"	0.6261	4
MR (Obs.)	154.149	4
MR (Calc.) (nD-d/2)	153.540	5
Dielectric		
A | 349 to	7.45223	5
B | 595 °C	2948.6	5
C	144.	5
A* | 349 to	2.42029	5
B* | 585 °C	2858.7	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	565.09	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0806	5
t_e	0.0376	5
30 mm	1.1956	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.12	5
BP	30.96	5
t_e	27.75	5
t_e (d, e)	27.50	5
$\Delta Hv/T_e$	18.16	5
d | 349 to	57.96	5
e | 585 °C	0.0539	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	0.8875	5
t_e	0.8438	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.		

		Ref.
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	27.40	5
γ 30	26.58	5
40	25.78	5
Parachor [P] 20°C		
30		
40		
Sugd.	1243.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 31

NAME	1-Iodohentriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{29}CH_3$

Mole % Pur. | Ref. 3 | Molecular Formula $C_{31}H_{63}I$ | Molecular Weight 562.724

		Ref.
F.P. °C	73.3	3
F.P. 100%		
B.P. °C 760 mm	509.	3
100	404.	5
30	356.	5
10	319.	5
1	258.	5
Pressure mm 25°C t_e	1985.0	5
Density g/ml 20°C	1.0046[a]	3
d_4^{t} 25	1.0008[a]	3
30		
a	1.0198	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4788[a]	3
25	1.4769[a]	3
30		
"C"	0.6288	4
MR (Obs.)	158.785	4
MR (Calc.) (nD-d/2)	158.158	5
Dielectric		
A | 356 to	7.45711	5
B | 604 °C	2979.2	5
C	142.	5
A* | 356 to	2.43464	5
B* | 594 °C	2890.0	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	574.26	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0813	5
t_e	0.0377	5
30 mm	1.2060	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.64	5
BP	30.50	5
t_e	27.26	5
t_e (d, e)	27.03	5
ΔHv/T_e	18.11	5
d | 356 to	57.60	5
e | 594 °C	0.0532	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	0.8863	5
t_e	0.8419	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.		

			Ref.
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		27.51	5
γ 30		26.69	5
40		25.89	5
Parachor [P] 20°C			
30			
40			
Sugd.		1282.9	5
Exp. L. 1. %/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

No. 32

NAME	1-Iododotriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{30}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{65}I$	Molecular Weight 576.750

		Ref.
F.P. °C	72.4	3
F.P. 100%		
B.P. °C 760 mm	516.	3
100	410.	5
30	362.	5
10	325.	5
1	263.	5
Pressure mm 25°C t_e	2000.4	5
Density g/ml 20°C	1.0003[a]	3
d_4^{t} 25 30	0.9965[a]	3
a	1.0155	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4787[a]	3
25	1.4768[a]	3
30		
"C"	0.6314	4
MR (Obs.)	163.414	4
MR (Calc.) (nD-d/2)	162.776	5
Dielectric		
A 362 to	7.46675	5
B 612 °C	3013.0	5
C	141.	5
A* 362 to	2.45321	5
B* 602 °C	2924.1	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	582.29	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0819	5
t_e		0.0377	5
30 mm		1.2158	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		38.09	5
BP		30.04	5
t_e		26.78	5
t_e (d, e)		26.57	5
$\Delta Hv/T_e$		18.06	5
d 362 to		57.03	5
e 602 °C		0.0523	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		0.8854	5
t_e		0.8405	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.			

			Ref.
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		27.63	5
γ 30		26.80	5
40		25.99	5
Parachor [P] 20°C			
30			
40			
Sugd.		1321.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE IV. IODOALKANES

No. 33

NAME	1-Iodotritriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{31}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{33}H_{67}I$	Molecular Weight 590.776

		Ref.
F.P. °C	76.7	3
F.P. 100%		
B.P. °C 760 mm	524.	3
100	417.	5
30	369.	5
10	331.	5
1	268.	5
Pressure mm 25°C t_e	2017.3	5
Density g/ml 20°C	0.9962[a]	3
d_4^{t} 25 30	0.9924[a]	3
a	1.0114	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4786[a]	3
25	1.4767[a]	3
30		
"C"	0.6339	4
MR (Obs.)	168.047	4
MR (Calc.) (nD-d/2)	167.374	5
Dielectric		
A / B / C 369 to 621 °C	7.47144 / 3043.6 / 139.	5 / 5 / 5
A* / B* / K 369 to 611 °C	2.46693 / 2955.5	5 / 5
c		
t_k / t_x to °C		
A' / B' / C' to °C		
A'* / B'* to °C		
Ac / Bc / Cc t_c °C		
Cryos. A° consts. B°		
t_e °C	591.46	5

			Ref.
dt/dP °C/mm 25°C			
BP	0.0825		5
t_e	0.0377		5
30 mm	1.2262		5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm	37.65		5
BP	29.62		5
t_e	26.33		5
t_e (d, e)	26.13		5
$\Delta Hv/T_e$	17.99		5
d / e 369 to 611 °C	56.73 / 0.0517		5 / 5
d' / e' to °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	0.8842		5
t_e	0.8386		5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes η °C			
B^v / A^v to °C			
(B^v) / (A^v) to °C			
c_p liq. °K			
c_p vap. °K			
c_v vap.			

			Ref.
f / g / h to °K			
f' / g' / h' to °K			
m / n / o to °K			
m' / n' / o' to °K			
Surface tension dynes/cm. 20°C		27.73	5
γ 30		26.90	5
40		26.08	5
Parachor [P] 20°C			
30			
40			
Sugd.		1360.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 34

NAME	1-Iodotetratriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{32}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{69}I$	Molecular Weight 604.802

		Ref.
F.P. °C	75.8	3
F.P. 100%		
B.P. °C 760 mm	531.	3
100	423.	5
30	375.	5
10	337.	5
1	273.	5
Pressure mm 25°C t_e	2032.5	5
Density g/ml 20°C	0.9923[a]	3
d_4^t 25	0.9885[a]	3
30		
a	1.0075	5
b	-0.0_3760	5
Ref. Index n_D 20°C	1.4786[a]	3
25	1.4766[a]	3
30		
"C"	0.6364	4
MR (Obs.)	172.712	4
MR (Calc.) (nD-d/2)	172.012	5
Dielectric		
A | 375 to	7.48084	5
B | 629 °C	3077.4	5
C	138.	5
A* | 375 to	2.48484	5
B* | 619 °C	2989.6	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	599.49	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0831	5
t_e	0.0378	5
30 mm	1.2360	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	37.16	5
BP	29.20	5
t_e	25.89	5
t_e (d, e)	25.71	5
$\Delta Hv/T_e$	17.94	5
d | 375 to	56.22	5
e | 619 °C	0.0509	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	0.8833	5
t_e	0.8371	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.		

		Ref.
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	27.83	5
γ 30	26.99	5
40	26.16	5
Parachor [P] 20°C		
30		
40		
Sugd.	1399.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 35

NAME	1-Iodopentatriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{33}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{35}H_{71}I$	Molecular Weight 618.828

		Ref.			Ref.			Ref.
F.P. °C	79.7	3	dt/dP °C/mm 25°C			f | to		
F.P. 100%			BP	0.0837	5	g | °		
B.P. °C 760 mm	538.	3	t_e	0.0378	5	h |		
100	430.	5	30 mm	1.2457	5	f' | to		
30	380.	5	ΔHm cal/g			g' | °		
10	342.	5				h' |		
1	278.	5	ΔHv cal/g 25°C			m | to		
Pressure mm 25°C t_e	2046.9	5	30 mm	36.68	5	n | °K		
Density g/ml 20°C	0.9886[a]	3	BP	28.79	5	o |		
d_4^{t} 25 30	0.9849[a]	3	t_e	25.48	5	m' | to		
a	1.0034	5	t_e (d, e)	25.31	5	n' | °K		
b	-0.0_3740	5	ΔHv/T_e	17.90	5	o' |		
Ref. Index n_D 20°C	1.4785[a]	3	d | 380 to	55.74	5	Surface tension dynes/cm. 20°C	27.92	5
25	1.4765[a]	3	e | 628 °C	0.0501	5	30	27.09	5
30			d' | to			40	26.29	5
"C"	0.6386	4	e' | °C			Parachor [P] 20°C		
MR (Obs.)	177.347	4	d_c g/ml			30		
MR (Calc.) (nD-d/2)	176.630	5	v_c ml/g			40		
Dielectric			t_c °C			Sugd.	1438.9	5
A | 380 to	7.49011	5	P_c mm			Exp. L.1.%/wt. u.		
B | 638 °C	3111.3	5	PV/RT 25°C			Dispersion		
C	137.	5	30 mm	1.0000	5	Flash Point °C		
A* | 380 to	2.50294	5	BP	0.8821	5	Fire Point		
B* | 628 °C	3024.1	5	t_e	0.8354	5	M. Spec.		
K			t_c			Ultra V.		
c			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 °C			Carbon tet.		
C'						Benzene		
A'* to			B^v | to			Ether		
B'* °C			A^v | °C			n-Heptane		
Ac | to			(B^v) |			Ethanol		
Bc | t_c °C			(A^v) |			Water		
Cc			c_p liq.			Water in		
Cryos. A° consts. B°			c_p vap. °K					
t_e °C	607.50	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 36

NAME	1-Iodohexatriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{34}CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{73}I$ — Molecular Weight 632.854

		Ref.
F.P. °C	78.8	3
F.P. 100%		
B.P. °C		
760 mm	544.	3
100	435.	5
30	385.	5
10	347.	5
1	283.	5
Pressure mm 25°C		
t_e	2059.3	5
Density		
g/ml 20°C	0.9851[a]	3
d_4^t 25	0.9814[a]	3
30		
a	0.9999	5
b	-0.0_3740	5
Ref. Index		
n_D 20°C	1.4785[a]	3
25	1.4765[a]	3
30		
"C"	0.6409	4
MR (Obs.)	182.012	4
MR (Calc.) (nD-d/2)	181.248	5
Dielectric		
A | 385 to	7.49695	5
B | 644 °C	3139.0	5
C	136.	5
A* | 385 to	2.51849	5
B* | 634 °C	3052.3	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	614.37	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0842	5
t_e	0.0378	5
30 mm	1.2539	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	36.18	5
BP	28.35	5
t_e	25.03	5
t_e (d, e)	24.88	5
$\Delta Hv/T_e$	17.85	5
d | 385 to	55.21	5
e | 634 °C	0.0494	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	0.8812	5
t_e	0.8340	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.		

			Ref.
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		28.01	5
γ 30		27.18	5
40		26.36	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1477.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 37

NAME	1-Iodoheptatriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{35}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{75}I$	Molecular Weight 646.880

		Ref.
F.P. °C	82.5	3
F.P. 100%		
B.P. °C 760 mm	551.	3
100	441.	5
30	391.	5
10	353.	5
1	288.	5
Pressure mm 25°C t_e	2074.2	5
Density g/ml 20°C	0.9818[a]	3
d_4^{t} 25 30	0.9781[a]	3
a	0.9966	5
b	-0.03740	5
Ref. Index n_D 20°C	1.4784[a]	3
25	1.4764[a]	3
30		
"C"	0.6429	4
MR (Obs.)	186.637	4
MR (Calc.) (nD-d/2)	185.866	5
Dielectric		
A | 391 to	7.49898	5
B | 652 °C	3163.5	5
C	134.	5
A* | 391 to	2.52885	5
B* | 642 °C	3077.5	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	622.42	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0848	5
t_e	0.0379	5
30 mm	1.2629	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	35.78	5
BP	27.98	5
t_e	24.63	5
t_e (d, e)	24.49	5
$\Delta Hv/T_e$	17.79	5
d | 391 to	54.90	5
e | 642 °C	0.0489	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	0.8802	5
t_e	0.8324	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.		

			Ref.
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		28.09	5
γ 30		27.26	5
40		26.44	5
Parachor [P] 20°C			
30			
40			
Sugd.		1516.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 38

NAME	1-Iodooctatriacontane		STRUCTURAL FORMULA
			$CH_2I(CH_2)_{36}CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{77}I$	Molecular Weight 660.906

		Ref.
F.P. °C	81.6	3
F.P. 100%		
B.P. °C		
760 mm	557.	3
100	447.	5
30	396.	5
10	358.	5
1	292.	5
Pressure mm 25°C		
t_e	2086.5	5
Density g/ml 20°C	0.9787[a]	3
d_4^t 25	0.9750[a]	3
30		
a	0.9935	5
b	-0.0_3740	5
Ref. Index		
n_D 20°C	1.4784[a]	3
25	1.4764[a]	3
30		
"C"	0.6449	4
MR (Obs.)	191.288	4
MR (Calc.) (nD-d/2)	190.484	5
Dielectric		
A 396 to	7.50568	5
B 649 °C	3191.2	5
C	133.	5
A* 396 to	2.54389	5
B* 649 °C	3105.8	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	629.29	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0853	5
t_e	0.0379	5
30 mm	1.2711	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	35.32	5
BP	27.58	5
t_e	24.21	5
t_e (d, e)	24.09	5
$\Delta Hv/T_e$	17.73	5
d 396 to	54.42	5
e 649 °C	0.0482	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	0.8793	5
t_e	0.8310	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.		

		Ref.
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	28.18	5
γ 30	27.34	5
40	26.52	5
Parachor [P] 20°C		
30		
40		
Sugd.	1555.9	5
Exp. L. 1. %/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

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TABLE IV. IODOALKANES

No. 39

NAME	1-Iodononatriacontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{37}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{39}H_{79}I$	Molecular Weight 674.932

		Ref.
F.P. °C	85.0	3
F.P. 100%		
B.P. °C 760 mm	563.	3
100	452.	5
30	401.	5
10	362.	5
1	296.	5
Pressure mm 25°C t_e	2099.6	5
Density g/ml 20°C	0.9757[a]	3
d_4^{t} 25	0.9720[a]	3
30		
a	0.9905	5
b	-0.03740	5
Ref. Index n_D 20°C	1.4783[a]	3
25	1.4763[a]	3
30		
"C"	0.6468	4
MR (Obs.)	195.913	4
MR (Calc.) (nD-d/2)	195.102	5
Dielectric		
A | 401 to	7.51230	5
B | 666 °C	3218.9	5
C	132.	5
A* | 401 to	2.55817	5
B* | 656 °C	3133.8	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	636.20	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0857	5
t_e	0.0379	5
30 mm	1.2793	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	34.88	5
BP	27.20	5
t_e	23.82	5
t_e (d, e)	23.72	5
$\Delta Hv/T_e$	17.68	5
d | 401 to	53.94	5
e | 656 °C	0.0475	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	0.8786	5
t_e	0.8299	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.		

		Ref.
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	28.26	5
30	27.41	5
40	26.58	5
Parachor [P] 20°C		
30		
40		
Sugd.	1594.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 40

NAME	1-Iodotetracontane	STRUCTURAL FORMULA
		$CH_2I(CH_2)_{38}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{81}I$	Molecular Weight 688.958

		Ref.
F.P. °C	84.1	3
F.P. 100%		
B.P. °C 760 mm	569.	3
100	457.	5
30	406.	5
10	367.	5
1	301.	5
Pressure mm 25°C t_e	2111.9	5
Density g/ml 20°C	0.9728[a]	3
d_4^t 25	0.9692[a]	3
30		
a	0.9872	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4782[a]	3
25	1.4763[a]	3
30		
"C"	0.6486	4
MR (Obs.)	200.545	4
MR (Calc.) (nD-d/2)	199.720	5
Dielectric		
A 406 to	7.51884	5
B 673 °C	3246.6	5
C	131.	5
A* 406 to	2.57273	5
B* 663 °C	3162.15	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	643.08	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0862	5
t_e	0.0380	5
30 mm	1.2876	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	34.46	5
BP	26.84	5
t_e	23.47	5
t_e (d, e)	23.37	5
$\Delta Hv/T_e$	17.65	5
d 406 to	53.48	5
e 663 °C	0.0468	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	0.8777	5
t_e	0.8284	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.		

		Ref.
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	28.33	5
γ 30	27.50	5
40	26.69	5
Parachor [P] 20°C		
30		
40		
Sugd.	1633.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IV. IODOALKANES

No. 41

NAME	Diiodomethane	STRUCTURAL FORMULA
		CH_2I_2

Mole % Pur.	Ref.	Molecular Formula $C_2H_2I_2$	Molecular Weight 267.846
	3		

		Ref.
F.P. °C	6.1	3
F.P. 100%		
B.P. °C		
760 mm	182.	3
100	113.	5
30	83.	5
10	60.	5
1	22.	5
Pressure mm 25°C	1.25	5
t_e	1212.4	5
Density g/ml 20°C	3.3345	3
d_4^{t} 25	3.3079	3
30		
a	3.4409	5
b	-0.00532	5
Ref. Index n_D 20°C	1.741	3
25	1.738	3
30		
"C"	0.2845	4
MR (Obs.)	32.428	4
MR (Calc.) (nD-d/2)	32.418	5
Dielectric		
A | 83 to	6.94246	5
B | 232 °C	1567.8	5
C	204.	5
A* | 83 to	1.72537	5
B* | 222 °C	1482.1	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	202.29	5

		Ref.
dt/dP °C/mm		
25°C	11.64	5
BP	0.0543	5
t_e	0.0377	5
30 mm	0.7598	5
ΔHm cal/g		
ΔHv cal/g		
25°C	45.57	5
30 mm	41.25	5
BP	34.65	5
t_e	33.44	5
t_e (d, e)	33.29	5
$\Delta Hv/T_e$	18.84	5
d | 83 to	46.77	5
e | 222 °C	0.0666	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0037	5
30 mm	1.0000	5
BP	0.9333	5
t_e	0.9165	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.		

		Ref.
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	62.44	5
σ 30	58.55	5
40	54.84	5
Parachor [P] 20°C		
30		
40		
Sugd.	225.8	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		

+ grams/100 grams solvent

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_2ICH_2I

Mole % Pur.	Ref. 3	Molecular Formula $C_2H_4I_2$	Molecular Weight 281.872

		Ref.
F.P. °C	81.	3
F.P. 100%		
B.P. °C 760 mm	200.	3
100	129.	5
30	98.	5
10	74.	5
1	35.	5
Pressure mm 25°C	0.50	5
t_e	1258.7	5
Density g/ml 20°C	3.325[a]	3
d_4^{t} 25	3.31[a]	3
30		
a	3.3850	5
b	-0.00300	5
Ref. Index n_D 20°C	1.871[a]	3
25	1.871[a]	3
30		
"C"	0.3312	4
MR (Obs.)	38.539	4
MR (Calc.) (nD-d/2)	37.036	5
Dielectric		
A | 98 to	6.98834	5
B | 253 °C	1647.1	5
C	201.	5
A* | 98 to	1.78151	5
B* | 243 °C	1559.7	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	222.60	5

		Ref.
dt/dP		
°C/mm		
25°C	26.86	5
BP	0.0558	5
t_e	0.0376	5
30 mm	0.7850	5
ΔHm cal/g		
ΔHv cal/g		
25°C	46.60	5
30 mm	41.20	5
BP	34.56	5
t_e	33.27	5
t_e (d, e)	33.09	5
ΔHv/T_e	18.91	5
d | 98 to	47.57	5
e | 243 °C	0.0651	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0014	5
30 mm	1.0000	5
BP	0.9309	5
t_e	0.9126	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.		

		Ref.
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	95.20	5
γ 30	91.81	5
40	88.51	5
Parachor [P]		
20°C		
30		
40		
Sugd.	264.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 43

NAME	2, 2-Diiodopropane	STRUCTURAL FORMULA
		$CH_3CI_2CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_3H_6I_2$ — Molecular Weight 295.898

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	173.	3
100	105.	5
30	75.	5
10	53.	5
1	15.	5
Pressure mm 25°C	1.95	5
t_e	1189.3	5
Density g/ml 20°C	2.5755[a]	3
d_4^t 25	2.571[a]	3
30		
a	2.5935	5
b	-0.0_3898	5
Ref. Index n_D 20°C	1.651[a]	3
25	1.649[a]	3
30		
"C"	0.3267	4
MR (Obs.)	41.956	4
MR (Calc.) (nD-d/2)	41.654	5
Dielectric		
A / B / C — 75 to 222 °C	6.92413 / 1532.4 / 206.	5 / 5 / 5
A* / B* / K / c / t_k / t_x — 75 to 212 °C	1.75582 / 1447.4	5 / 5
A' / B' / C' — to °C		
A'* / B'* — to °C		
Ac / Bc / Cc — t_c °C		
Cryos. A° consts. B°		
t_e °C	192.15	5

		Ref.
dt/dP °C/mm		
25°C	7.751	5
BP	0.0536	5
t_e	0.0378	5
30 mm	0.7477	5
ΔHm cal/g		
ΔHv cal/g		
25°C	39.65	5
30 mm	36.35	5
BP	30.58	5
t_e	29.57	5
t_e (d, e)	29.45	5
$\Delta Hv/T_e$	18.80	5
d / e — 75 to 212 °C	40.81 / 0.0591	5 / 5
d' / e' — to °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0043	5
30 mm	1.0000	5
BP	0.9346	5
t_e	0.9187	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v / A^v — to °C		
(B^v) / (A^v) — to °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

		Ref.
f / g / h — to °K		
f' / g' / h' — to °K		
m / n / o — to °K		
m' / n' / o' — to °K		
Surface tension dynes/cm. 20°C	48.89	5
30	48.21	5
40	47.53	5
Parachor [P] 20°C		
30		
40		
Sugd.	303.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE V. HALOALKENES

No. 1

NAME	Chloroethene	STRUCTURAL FORMULA
		CH_2=CHCl

Mole % Pur.	Ref. 3	Molecular Formula C_2H_3Cl	Molecular Weight 62.501

		Ref.
F.P. °C	-153.79	3
F.P. 100%		
B.P. °C		
760 mm	-13.37	3
100	-54.54	5
30	-72.63	5
10	-86.33	5
1	-108.89	5
Pressure mm 25°C	2862.1	5
t_e	692.1	5
Density g/ml 20°C	0.9106[a]	3
d_4^{t} 25	0.9013[a]	3
30		
a	0.9514	5
b	-0.00159	5
Ref. Index n_D 20°C	1.370[a]	3
25	1.366[a]	3
30		
"C"	0.5441	4
MR (Obs.)	15.525	4
MR (Calc.) (nD-d/2)	15.836	5
Dielectric		
A | -73 to	6.88054	5
B | 46 °C	912.5	5
C	242.	5
A* | -73 to	1.20831	5
B* | 36 °C	849.8	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	-15.67	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0118	5
BP	0.0326	5
t_e	0.0351	5
30 mm	0.4524	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.01	5
30 mm	94.18	5
BP	83.22	5
t_e	83.65	5
t_e (d, e)	83.64	5
ΔHv/T_e	20.31	5
d | -73 to	80.74	5
e | 36 °C	0.1849	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9197	5
30 mm	1.0000	5
BP	0.9637	5
t_e	0.9661	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.		

			Ref.
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		15.88	5
σ 30		14.41	5
40		12.97	5
Parachor [P]			
20°C			
30			
40			
Sugd.		138.4	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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 2

NAME	cis-1-Chloro-1-propene	STRUCTURAL FORMULA
		$CHCl{=}CHCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_5Cl	Molecular Weight 76.527

		Ref.
F.P. °C	-134.8	3
F.P. 100%		
B.P. °C		
760 mm	+32.8	3
100	-14.7	5
30	-35.7	5
10	-51.6	5
1	-77.8	5
Pressure		
mm 25°C	573.5	5
t_e	818.3	5
Density		
g/ml 20°C	0.9347	3
d_4^t 25	0.9271	3
30		
a	0.9656	5
b	-0.00144	5
Ref. Index		
n_D 20°C	1.4055	3
25	1.400	3
30		
"C"	0.5780	4
MR (Obs.)	20.089	4
MR (Calc.)	20.454	5
(nD-d/2)		
Dielectric		
A -36 to	6.92478	5
B 65 °C	1074.9	5
C	233.	5
A* -36 to	1.28551	5
B* 55 °C	1005.3	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	34.93	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0469	5
BP	0.0376	5
t_e	0.0354	5
30 mm	0.5243	5
ΔHm cal/g		
ΔHv cal/g		
25°C	82.53	5
30 mm	93.07	5
BP	81.19	5
t_e	80.82	5
t_e (d, e)	80.82	5
$\Delta Hv/T_e$	20.08	5
d -36 to	86.88	5
e 55 °C	0.1736	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9640	5
30 mm	1.0000	5
BP	0.9567	5
t_e	0.9547	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.		

			Ref.
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		21.85	5
γ 30		20.38	5
40		18.94	5
Parachor [P]			
20°C			
30			
40			
Sugd.		177.4	5
Exp. L.1.%/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 V. HALOALKENES

No. 3

NAME	trans-1-Chloro-1-propene	STRUCTURAL FORMULA
		$CHCl{=}CHCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_5Cl	Molecular Weight 76.527

		Ref.
F.P. °C	-99.0	3
F.P. 100%		
B.P. °C		
760 mm	37.4	3
100	-10.8	5
30	-32.0	5
10	-48.1	5
1	-74.7	5
Pressure		
mm 25°C	484.9	5
t_e	831.0	5
Density		
g/ml 20°C	0.935	3
d_4^{t} 25	0.927	3
30		
a	0.9674	5
b	-0.00153	5
Ref. Index		
n_D 20°C	1.4054	3
25	1.400	3
30		
"C"	0.5777	4
MR (Obs.)	20.078	4
MR (Calc.) (nD-d/2)	20.454	5
Dielectric		
A | -32 to	6.92615	5
B | 70 °C	1089.8	5
C	232.	5
A* | -32 to	1.28179	5
B* | 60 °C	1019.6	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	40.01	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0543	5
BP	0.0381	5
t_e	0.0355	5
30 mm	0.5313	5
ΔHm cal/g		
ΔHv cal/g		
25°C	84.67	5
30 mm	94.72	5
BP	82.51	5
t_e	82.06	5
t_e (d, e)	82.06	5
$\Delta Hv/T_e$	20.05	5
d | -32 to	89.09	5
e | 60 °C	0.1759	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9676	5
30 mm	1.0000	5
BP	0.9562	5
t_e	0.9538	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.		

		Ref.
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	21.91	5
30	20.37	5
40	18.88	5
Parachor [P]		
20°C		
30		
40		
Sugd.	177.4	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

No. 4

NAME	2-Chloro-1-propene	STRUCTURAL FORMULA
		$CH_2=CClCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_5Cl	Molecular Weight 76.527

		Ref.
F.P. °C	-137.4	3
F.P. 100%		
B.P. °C		
760 mm	22.65	3
100	-23.49	5
30	-43.82	5
10	-59.23	5
1	-84.64	5
Pressure mm 25°C	826.6	5
t_e	790.9	5
Density g/ml 20°C	0.9017	3
d^t_4 25	0.894[a]	3
30		
a	0.9333	5
b	-0.00143	5
Ref. Index n_D 20°C	1.3973	3
25	1.392[a]	3
30		
"C"	0.5877	4
MR (Obs.)	20.452	4
MR (Calc.) (nD-d/2)	20.454	5
Dielectric		
A | -44 to	6.91824	5
B | 54 °C	1040.2	5
C	235.	5
A* | -44 to	1.28964	5
B* | 44 °C	972.0	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	23.76	5

		Ref.
dt/dP °C/mm		
25°C	0.0341	5
BP	0.0365	5
t_e	0.0353	5
30 mm	0.5086	5
ΔHm cal/g		
ΔHv cal/g		
25°C	77.89	5
30 mm	89.49	5
BP	78.29	5
t_e	78.10	5
t_e (d, e)	78.10	5
$\Delta Hv/T_e$	20.13	5
d | -44 to	82.10	5
e | 44 °C	0.1684	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9562	5
30 mm	1.0000	5
BP	0.9585	5
t_e	0.9574	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.		

		Ref.
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	18.84	5
γ 30	17.48	5
40	16.15	5
Parachor [P]		
20°C		
30		
40		
Sugd.	177.4	5
Exp. L. 1. %/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 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

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TABLE V. HALOALKENES

No. 5

NAME	3-Chloro-1-propene	STRUCTURAL FORMULA
		$CH_2=CHCH_2Cl$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_5Cl	Molecular Weight 76.527

		Ref.
F. P. °C	-134.5	3
F. P. 100%		
B. P. °C 760 mm	44.96	3
100	-4.25	5
30	-25.94	5
10	-42.40	5
1	-69.54	5
Pressure mm 25°C	366.8	5
t_e	851.4	5
Density g/ml 20°C	0.9376	3
d_4^{t} 25	0.9311	3
30		
a	0.9638	5
b	-0.00125	5
Ref. Index n_D 20°C	1.4157	3
25	1.4116	3
30		
"C"	0.5899	4
MR (Obs.)	20.469	4
MR (Calc.) (nD-d/2)	20.454	5
Dielectric		
A | -26 to	6.93053	5
B | 78 °C	1115.5	5
C	231.	5
A* | -26 to	1.27856	5
B* | 68 °C	1044.4	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	48.36	5

		Ref.
dt/dP °C/mm		
25°C	0.0693	5
BP	0.0389	5
t_e	0.0356	5
30 mm	0.5430	5
ΔHm cal/g		
ΔHv cal/g		
25°C	88.20	5
30 mm	97.40	5
BP	84.66	5
t_e	84.07	5
t_e (d, e)	84.06	5
ΔHv/T_e	20.01	5
d | -26 to	92.74	5
e | 68 °C	0.1796	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9727	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9518	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.		

		Ref.
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	22.19	5
σ 30	20.93	5
40	19.69	5
Parachor [P] 20°C		
30		
40		
Sugd.	177.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 6

NAME	Bromoethene	STRUCTURAL FORMULA
		CH_2=CHBr
Mole % Pur.	Ref. 3	Molecular Formula C_2H_3Br — Molecular Weight 106.960

		Ref.
F.P. °C	-137.8	3
F.P. 100%		
B.P. °C		
760 mm	15.80	3
100	-29.39	5
30	-49.28	5
10	-64.36	5
1	-89.21	5
Pressure mm 25°C	1053.8	5
t_e	772.1	5
Density g/ml 20°C	1.4933[a]	3
d^t_4 25	1.4738[a]	3
30		
a	1.5729	5
b	-0.00371	5
Ref. Index		
n_D 20°C	1.441[a]	3
25	1.435[a]	3
30		
"C"	0.3916	4
MR (Obs.)	18.915	4
MR (Calc.) (nD-d/2)	18.734	5
Dielectric		
A | -49 to	6.90776	5
B | 46 °C	1014.0	5
C	236.	5
A* | -49 to	1.43295	5
B* | 36 °C	946.9	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	16.23	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0277	5
BP	0.0357	5
t_e	0.0353	5
30 mm	0.4977	5
ΔHm cal/g		
ΔHv cal/g		
25°C	53.55	5
30 mm	62.35	5
BP	54.63	5
t_e	54.58	5
t_e (d, e)	54.58	5
$\Delta Hv/T_e$	20.17	5
d | -49 to	56.51	5
e | 36 °C	0.1186	5
d' | to		
e' | °C		
d_c g/ml		
v^c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9501	5
30 mm	1.0000	5
BP	0.9594	5
t_e	0.9590	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.		

			Ref.
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		10.34	5
γ 30		9.24	5
40		8.21	5
Parachor [P]			
20°C			
30			
40			
Sugd.		128.9	5
Exp. L.1.%/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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE V. HALOALKENES

No. 7

NAME	cis-1-Bromo-1-propene	STRUCTURAL FORMULA
		$CHBr=CHCH_3$
Mole % Pur.	Ref. 3	Molecular Formula C_3H_5Br — Molecular Weight 120.986

		Ref.
F.P. °C	-113.	3
F.P. 100%		
B.P. °C		
760 mm	57.8	3
100	6.8	5
30	-15.7	5
10	-32.7	5
1	-60.9	5
Pressure mm 25°C	226.4	5
t_e	886.0	5
Density g/ml 20°C	1.4291	3
d_4^t 25	1.4197	3
30		
a	1.4668	5
b	-0.00183	5
Ref. Index n_D 20°C	1.4560	3
25	1.4508	3
30		
"C"	0.4222	4
MR (Obs.)	23.013	4
MR (Calc.) (nD-d/2)	23.352	5
Dielectric		
A | -16 to	6.93827	5
B | 93 °C	1159.6	5
C	228.	5
A* | -16 to	1.47250	5
B* | 83 °C	1086.8	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	62.57	5

		Ref.
dt/dP °C/mm		
25°C	0.1059	5
BP	0.0403	5
t_e	0.0357	5
30 mm	0.5629	5
ΔHm cal/g		
ΔHv cal/g		
25°C	59.65	5
30 mm	64.48	5
BP	55.86	5
t_e	55.31	5
t_e (d, e)	55.29	5
$\Delta Hv/T_e$	19.93	5
d | -16 to	62.64	5
e | 83 °C	0.1174	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9804	5
30 mm	1.0000	5
BP	0.9531	5
t_e	0.9486	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.		

			Ref.
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		15.42	5
γ 30		14.60	5
40		13.79	5
Parachor [P] 20°C			
30			
40			
Sugd.		167.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 8

NAME	trans-1-Bromo-1-propene	STRUCTURAL FORMULA
		$CHBr=CHCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_5Br	Molecular Weight 120.986

		Ref.
F.P. °C	-76.5	3
F.P. 100%		
B.P. °C		
760 mm	63.2	3
100	11.5	5
30	-11.3	5
10	-28.7	5
1	-57.2	5
Pressure		
mm 25°C	184.2	5
t_e	900.4	5
Density		
g/ml 20°C	1.4155	3
d_4^{25}	1.4061	3
a	1.4532	5
b	-0.00184	5
Ref. Index		
n_D 20°C	1.456	3
25	1.451	3
30		
"C"	0.4263	4
MR (Obs.)	23.234	4
MR (Calc.) (nD-d/2)	23.352	5
Dielectric		
A | -11 to	6.94212	5
B | 99 °C	1178.6	5
C	227.	5
A* | -11 to	1.47140	5
B* | 89 °C	1105.2	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	68.56	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1271	5
BP	0.0408	5
t_e	0.0357	5
30 mm	0.5713	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.30	5
30 mm	65.68	5
BP	56.81	5
t_e	56.20	5
t_e (d, e)	56.17	5
$\Delta Hv/T_e$	19.90	5
d | -11 to	64.33	5
e | 89 °C	0.1190	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9832	5
30 mm	1.0000	5
BP	0.9521	5
t_e	0.9471	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.		

		Ref.
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	14.85	5
γ 30	14.05	5
40	13.28	5
Parachor [P]		
20°C		
30		
40		
Sugd.	167.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE V. HALOALKENES

No. 9

NAME	cis-1-Bromo-1-butene	STRUCTURAL FORMULA
		$CHBr{=}CHCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_7Br	Molecular Weight 135.012

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	86.15	3
100	31.26	5
30	7.01	5
10	-11.40	5
1	-41.80	5
Pressure mm 25°C	74.96	5
t_e	962.0	5
Density g/ml 20°C	1.3192	3
d_4^{t} 25	1.3119	3
30		
a	1.3484	5
b	-0.00144	5
Ref. Index n_D 20°C	1.456	3
25	1.453	3
30		
"C"	0.4574	4
MR (Obs.)	27.821	4
MR (Calc.) (nD-d/2)	27.970	5
Dielectric		
A | 7 to	6.96077	5
B | 124 °C	1261.3	5
C	223.	5
A* | 7 to	1.51612	5
B* | 114 °C	1184.8	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	94.11	5

		Ref.
dt/dP °C/mm		
25°C	0.2825	5
BP	0.0433	5
t_e	0.0360	5
30 mm	0.6072	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.35	5
30 mm	63.41	5
BP	54.56	5
t_e	53.71	5
t_e (d, e)	53.67	5
$\Delta Hv/T_e$	19.75	5
d | 7 to	64.19	5
e | 114 °C	0.1118	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9934	5
30 mm	1.0000	5
BP	0.9487	5
t_e	0.9415	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.		

		Ref.
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	16.68	5
σ 30	15.94	5
40	15.22	5
Parachor [P] 20°C		
30		
40		
Sugd.	206.9	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 10

NAME	trans-1-Bromo-1-butene	STRUCTURAL FORMULA
		$CHBr{=}CHCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_7Br	Molecular Weight 135.012

		Ref.
F.P. °C	-100.3	3
F.P. 100%		
B.P. °C		
760 mm	94.7	3
100	38.7	5
30	13.9	5
10	-4.9	5
1	-35.9	5
Pressure		
mm 25°C	53.03	5
t_e	984.8	5
Density		
g/ml 20°C	1.3202	3
d_4^t 25	1.3129	3
d_4 30		
a	1.3494	5
b	-0.00144	5
Ref. Index		
n_D 20°C	1.456	3
25	1.453	3
30		
"C"	0.4571	4
MR (Obs.)	27.799	4
MR (Calc.)	27.970	5
(nD-d/2)		
Dielectric		
A | 14 to	6.95355	5
B | 134 °C	1283.7	5
C	221.	5
A* | 14 to	1.50250	5
B* | 124 °C	1206.7	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	103.65	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3845	5
BP	0.0442	5
t_e	0.0361	5
30 mm	0.6196	5
ΔHm cal/g		
ΔHv cal/g		
25°C	63.91	5
30 mm	65.24	5
BP	55.92	5
t_e	54.94	5
t_e (d, e)	54.88	5
$\Delta Hv/T_e$	19.69	5
d | 14 to	66.84	5
e | 124 °C	0.1153	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9963	5
30 mm	1.0000	5
BP	0.9473	5
t_e	0.9393	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.		

			Ref.
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		16.74	5
γ 30		16.00	5
40		15.28	5
Parachor [P]			
20°C			
30			
40			
Sugd.		206.9	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE V. HALOALKENES

No. 11

NAME	2-Bromo-1-butene	STRUCTURAL FORMULA
		$CH_2=CBrCH_2CH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_7Br	Molecular Weight 135.012

		Ref.
F.P. °C	-133.4	3
F.P. 100%		
B.P. °C 760 mm	81.0	3
100	26.8	5
30	2.9	5
10	-15.3	5
1	-45.3	5
Pressure mm 25°C	92.00	5
t_e	948.2	5
Density g/ml 20°C	1.3136	3
d_4^{t} 25	1.3063	3
30		
a	1.3428	5
b	-0.00143	5
Ref. Index n_D 20°C	1.4537	3
25	1.4507	3
30		
"C"	0.4572	4
MR (Obs.)	27.817	4
MR (Calc.) (nD-d/2)	27.970	5
Dielectric		
A | 3 to	6.95820	5
B | 118 °C	1243.6	5
C	224.	5
A* | 3 to	1.51816	5
B* | 108 °C	1167.7	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	88.36	5

		Ref.
dt/dP		
°C/mm		
25°C	0.2353	5
BP	0.0427	5
t_e	0.0359	5
30 mm	0.5993	5
ΔHm cal/g		
ΔHv cal/g		
25°C	59.88	5
30 mm	62.38	5
BP	53.74	5
t_e	52.96	5
t_e (d, e)	52.92	5
$\Delta Hv/T_e$	19.78	5
d | 3 to	62.69	5
e | 108 °C	0.1106	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9914	5
30 mm	1.0000	5
BP	0.9494	5
t_e	0.9427	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.		

		Ref.
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	16.39	5
σ 30	15.66	5
40	14.94	5
Parachor [P] 20°C		
30		
40		
Sugd.	206.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 12

NAME	2-Bromo-cis-2-butene	STRUCTURAL FORMULA
		$CH_3CBr=CHCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_7Br	Molecular Weight 135.012

		Ref.
F.P. °C	-111.2	3
F.P. 100%		
B.P. °C		
760 mm	85.8	3
100	31.0	5
30	6.7	5
10	-11.7	5
1	-42.0	5
Pressure		
mm 25°C	76.00	5
t_e	961.0	5
Density		
g/ml 20°C	1.3237	3
d_4^t 25	1.3167	3
30		
a	1.3517	5
b	-0.00138	5
Ref. Index		
n_D 20°C	1.4580	3
25	1.4550	3
30		
"C"	0.4577	4
MR (Obs.)	27.831	4
MR (Calc.)	27.970	5
(nD-d/2)		
Dielectric		
A | 7 to	6.95966	5
B | 124 °C	1259.6	5
C	223.	5
A* | 7 to	1.51550	5
B* | 114 °C	1183.1	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	93.71	5

		Ref.
dt/dP		
°C/mm		
25°C	0.2790	5
BP	0.0433	5
t_e	0.0360	5
30 mm	0.6066	5
ΔHm cal/g		
ΔHv cal/g		
25°C	61.25	5
30 mm	63.35	5
BP	54.50	5
t_e	53.66	5
t_e (d, e)	53.62	5
$\Delta Hv/T_e$	19.75	5
d | 7 to	64.10	5
e | 114 °C	0.1119	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9932	5
30 mm	1.0000	5
BP	0.9487	5
t_e	0.9415	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.		

		Ref.
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	16.91	5
γ 30	16.19	5
40	15.49	5
Parachor [P]		
20°C		
30		
40		
Sugd.		
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE V. HALOALKENES

No. 13

NAME	2-Bromo-trans-2-butene	STRUCTURAL FORMULA
		$CH_3CBr{=}CHCH_3$

Mole % Pur.	Ref. 3	Molecular Formula C_4H_7Br	Molecular Weight 135.012

		Ref.
F.P. °C	-115.4	3
F.P. 100%		
B.P. °C		
760 mm	94.8	3
100	38.7	5
30	14.0	5
10	-4.9	5
1	-35.9	5
Pressure		
mm 25°C	52.9	5
t_e	985.1	5
Density		
g/ml 20°C	1.3291	3
d_4^t 25	1.3221	3
30		
a	1.3571	5
b	-0.00138	5
Ref. Index		
n_D 20°C	1.457	3
25	1.455	3
30		
"C"	0.4549	4
MR (Obs.)	27.666	4
MR (Calc.)	27.970	5
(nD-d/2)		
Dielectric		
A | 14 to	6.96061	5
B | 134 °C	1288.4	5
C	221.	5
A* | 14 to	1.50879	5
B* | 124 °C	1211.0	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	103.77	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3858	5
BP	0.0442	5
t_e	0.0361	5
30 mm	0.6203	5
ΔHm cal/g		
ΔHv cal/g		
25°C	63.89	5
30 mm	65.19	5
BP	55.94	5
t_e	54.97	5
t_e (d, e)	54.92	5
$\Delta Hv/T_e$	19.69	5
d | 14 to	66.79	5
e | 124 °C	0.1144	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9963	5
30 mm	1.0000	5
BP	0.9474	5
t_e	0.9394	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.		

		Ref.
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	17.19	5
γ 30	16.47	5
40	15.76	5
Parachor [P]		
20°C		
30		
40		
Sugd.	206.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 14

NAME	cis-1-Bromo-1-heptene trans-1-Bromo-1-heptene	STRUCTURAL FORMULA $CHBr{=}CH(CH_2)_4CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{13}Br$ — Molecular Weight 177.090

		Ref.
F.P. °C	-98.	3
F.P. 100%		
B.P. °C 760 mm	163.	3
100	98.	5
30	69.	5
10	47.	5
1	10.	5
Pressure mm 25°C	2.79	5
t_e	1163.9	5
Density g/ml 20°C	1.1532	3
d_4^{t} 25	1.147	3
30		
a	1.1780	5
b	-0.00124	5
Ref. Index n_D 20°C	1.461	3
25	1.458	3
30		
"C"	0.5286	4
MR (Obs.)	42.138	4
MR (Calc.) (nD-d/2)	41.824	5
Dielectric		
A | 69 to	6.99161	5
B | 210 °C	1525.1	5
C	208.	5
A* | 69 to	1.60633	5
B* | 200 °C	1440.8	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	180.49	5

		Ref.
dt/dP		
°C/mm		
25°C	5.535	5
BP	0.0516	5
t_e	0.0369	5
30 mm	0.7260	5
ΔHm cal/g		
ΔHv cal/g		
25°C	64.85	5
30 mm	60.15	5
BP	50.74	5
t_e	49.13	5
t_e (d, e)	49.00	5
$\Delta Hv/T_e$	19.18	5
d | 69 to	66.97	5
e | 200 °C	0.0996	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0051	5
30 mm	1.0000	5
BP	0.9368	5
t_e	0.9221	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.		

			Ref.
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		19.79	5
γ 30		18.95	5
40		18.14	5
Parachor [P]			
20°C			
30			
40			
Sugd.		323.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE V. HALOALKENES

No. 15

NAME	3-Iodo-1-propene	STRUCTURAL FORMULA
		$CH_2=CHCH_2I$

Mole % Pur.	Ref. 3	Molecular Formula C_3H_5I	Molecular Weight 167.980

		Ref.
F. P. °C	-99.3	3
F. P. 100%		
B. P. °C		
760 mm	102.	3
100	45.	5
30	20.	5
10	1.	5
1	-31.	5
Pressure		
mm 25°C	39.43	5
t_e	1004.1	5
Density		
g/ml 20°C	1.8494	3
d_4^{t} 25	1.8394	3
30		
a	1.8894	5
b	-0.00199	5
Ref. Index		
n_D 20°C	1.5530	3
25	1.550	3
30		
"C"	0.3909	4
MR (Obs.)	29.066	4
MR (Calc.) (nD-d/2)	28.387	5
Dielectric		
A | 20 to	6.96930	5
B | 142 °C	1316.5	5
C	220.	5
A* | 20 to	1.60612	5
B* | 132 °C	1238.1	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	111.82	5

		Ref.
dt/dP		
°C/mm		
25°C	0.5022	5
BP	0.0450	5
t_e	0.0362	5
30 mm	0.6318	5
ΔHm cal/g		
ΔHv cal/g		
25°C	53.01	5
30 mm	53.52	5
BP	45.90	5
t_e	45.05	5
t_e (d, e)	44.99	5
$\Delta Hv/T_e$	19.66	5
d | 20 to	55.34	5
e | 132 °C	0.0926	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9983	5
30 mm	1.0000	5
BP	0.9462	5
t_e	0.9375	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.		

			Ref.
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		19.50	5
γ 30		18.66	5
40		17.85	5
Parachor [P]			
20°C			
30			
40			
Sugd.		190.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 1

NAME	Aminomethane Methylamine	STRUCTURAL FORMULA CH_3NH_2
Mole % Pur.	Ref. 3	Molecular Formula CH_5N — Molecular Weight 31.058

		Ref.
F.P. °C	-92.5	3
F.P. 100%		
B.P. °C		
760 mm	-6.45	3
100	-43.91	5
30	-60.96	5
10	-74.13	5
1	-96.28	5
Pressure		
mm 25°C	2680.2	5
t_e	715.9	5
Density		
g/ml 20°C	0.6624[a]	3
d_4^t 25	0.6562[a]	3
30		
a	0.6883	5
b	-0.00109	5
Ref. Index		
n_D 20°C	1.3527[a]	3
25	1.3491[a]	3
30		
"C"	0.7147	4
MR (Obs.)	10.159	4
MR (Calc.) (nD-d/2)	10.368	5
Dielectric		
A | -61 to	7.4969	3
B | 38 °C	1079.15	3
C	240.23	3
A* | -61 to	1.5015	5
B* | 28 °C	1013.55	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	-7.76	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0106	5
BP	0.0289	5
t_e	0.0304	5
30 mm	0.4311	5
ΔHm cal/g		
ΔHv cal/g		
25°C	186.51	5
30 mm	222.72	5
BP	199.95	5
t_e	200.50	5
t_e (d, e)	200.49	5
$\Delta Hv/T_e$	23.46	5
d | -61 to	197.25	5
e | 28 °C	0.4178	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9352	5
30 mm	1.0000	5
BP	0.9684	5
t_e	0.9696	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. •		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | •		
h |		
f' | to		
g' | •		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	100.59	5
σ 30	92.25	5
40	83.97	5
Parachor [P]		
20°C		
30		
40		
Sugd.	149.4	5
Exp. L.1.%/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 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

No. 2

NAME	Aminoethane Ethylamine	STRUCTURAL FORMULA $CH_3(CH_2)NH_2$
Mole % Pur.	Ref. 3	Molecular Formula C_2H_7N	Molecular Weight 45.084

		Ref.			Ref.			Ref.
F.P. °C	-81.0	3	dt/dP °C/mm			f | | to		
F.P. 100%			25°C	0.0245	5	g | _ _ °K		
B.P. °C			BP	0.0320	5	h		
760 mm	16.58	3	t_e	0.0314	5	f' | | to		
100	-24.70	5	30 mm	0.4715	5	g' | _ _ °K		
30	-43.38	5	ΔHm cal/g			h'		
10	-57.76	5	ΔHv cal/g			m | | to		
1	-81.87	5	25°C	143.56	5	n | _ _ °K		
Pressure mm 25°C	1062.2	5	30 mm	164.48	5	o		
t_e	778.1	5	BP	146.15	5	m' | | to		
Density g/ml 20°C	0.6829[a]	3	t_e	145.97	5	n' | _ _ °K		
d_4^t 25	0.6769[a]	3	t_e (d, e)	145.98	5	o'		
30			ΔHv/T_e	22.67	5	Surface tension		
a	0.7073	5	d | -43 to	151.22	5	dynes/cm. 20°C	65.46	5
b	-0.00111	5	e | 37 °C	0.3057	5	γ 30	60.58	5
Ref. Index			d' | to			40	55.77	5
n_D 20°C	1.3663[a]	3	e' | °C			Parachor [P]		
25	1.3627[a]	3	d_c g/ml			20°C		
30			v_c ml/g			30		
"C"	0.7186	4	t_c °C			40		
MR (Obs.)	14.799	4	P_c mm			Sugd.	188.4	5
MR (Calc.) (nD-d/2)	14.986	5	PV/RT			Exp. L.		
Dielectric			25°C	0.9558	5	1.%		
A | -43 to	7.3862	3	30 mm	1.0000	5	/wt. u.		
B | 47 °C	1137.30	3	BP	0.9639	5	Dispersion		
C	235.85	3	t_e	0.9633	5	Flash Point °C		
A* | -43 to	1.5274	5	t_c			Fire Point		
B* | 37 °C	1068.66	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						Acetone		
B' | °C						Carbon tet.		
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_p vap. °K			Water in		
Cryos. A° consts. B°			c_v vap.					
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 Propylamine	STRUCTURAL FORMULA $CH_3(CH_2)_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula C_3H_9N — Molecular Weight 59.110

		Ref.
F.P. °C	-83.0	3
F.P. 100%		
B.P. °C 760 mm	47.8	3
100	1.4	5
30	-19.5	5
10	-35.5	5
1	-62.3	5
Pressure mm 25°C	307.9	5
t_e	861.6	5
Density g/ml 20°C	0.7173	3
d_4^t 25	0.7123	3
30		
a	0.7374	5
b	-0.03963	5
Ref. Index n_D 20°C	1.3879	3
25	1.3848	3
30		
"C"	0.7223	4
MR (Obs.)	19.441	4
MR (Calc.) (nD-d/2)	19.604	5
Dielectric		
A | -20 to	7.2672	3
B | 81 °C	1218.1	3
C	229.9	3
A* | -20 to	1.4954	5
B* | 71 °C	1145.7	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	51.29	5

		Ref.
dt/dP °C/mm		
25°C	0.0752	5
BP	0.0362	5
t_e	0.0327	5
30 mm	0.5260	5
ΔHm cal/g		
ΔHv cal/g		
25°C	125.87	5
30 mm	137.03	5
BP	120.22	5
t_e	119.36	5
t_e (d, e)	119.34	5
$\Delta Hv/T_e$	21.75	5
d | -20 to	132.15	5
e | 71 °C	0.2497	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9770	5
30 mm	1.0000	5
BP	0.9577	5
t_e	0.9545	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	57.72	5
σ 30	54.43	5
40	51.19	5
Parachor [P] 20°C		
30		
40		
Sugd.	227.4	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

No. 4

NAME	1-Aminobutane Butylamine	STRUCTURAL FORMULA $CH_3(CH_2)_3NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_4H_{11}N$ — Molecular Weight 73.136

		Ref.
F.P. °C	-49.1	3
F.P. 100%		
B.P. °C		
760 mm	77.8	3
100	26.8	5
30	3.9	5
10	-13.6	5
1	-42.8	5
Pressure mm 25°C	91.75	5
t_e	941.6	5
Density g/ml 20°C	0.7414	3
d^t_4 25	0.7369	3
30		
a	0.7594	5
b	-0.0_3885	5
Ref. Index		
n_D 20°C	1.4031	3
25	1.4004	3
30		
"C"	0.7246	4
MR (Obs.)	24.078	4
MR (Calc.) (nD-d/2)	24.222	5
Dielectric		
A | 4 to	7.213	3
B | 114 °C	1308.4	3
C	224.2	3
A* | 4 to	1.507	5
B* | 104 °C	1232.4	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	84.45	5

		Ref.
dt/dP °C/mm		
25°C	0.2247	5
BP	0.0398	5
t_e	0.0336	5
30 mm	0.5757	5
ΔHm cal/g		
ΔHv cal/g		
25°C	116.13	5
30 mm	120.74	5
BP	104.93	5
t_e	103.50	5
t_e (d, e)	103.50	5
$\Delta Hv/T_e$	21.17	5
d | 4 to	121.58	5
e | 104 °C	0.2140	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9916	5
30 mm	1.0000	5
BP	0.9530	5
t_e	0.9464	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.		

			Ref.
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		53.11	5
γ 30		50.52	5
40		48.00	5
Parachor [P]			
20°C			
30			
40			
Sugd.		266.4	5
Exp. L. 1. %/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

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TABLE VI. AMINOALKANES

No. 5

NAME	1-Aminopentane Pentylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_5H_{13}N$ — Molecular Weight 87.162

		Ref.
F.P. °C	-55.	3
F.P. 100%		
B.P. °C		
760 mm	104.4	3
100	49.2	5
30	24.7	5
10	5.9	5
1	-25.4	5
Pressure		
mm 25°C	30.53	5
t_e	1011.3	5
Density		
g/ml 20°C	0.7547	3
d_4^{t} 25	0.7505	3
30		
a	0.7715	5
b	-0.03833	5
Ref. Index		
n_D 20°C	1.4118	3
25	1.4091	3
30		
"C"	0.7263	4
MR (Obs.)	28.725	4
MR (Calc.) (nD-d/2)	28.840	5
Dielectric		
A 25 to	7.198	3
B 144 °C	1396.9	3
C	219.5	3
A* 25 to	1.545	5
B* 134 °C	1317.8	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	113.64	5

		Ref.
dt/dP		
°C/mm		
25°C	0.6088	5
BP	0.0428	5
t_e	0.0341	5
30 mm	0.6179	5
ΔHm cal/g		
ΔHv cal/g		
25°C	109.02	5
30 mm	109.08	5
BP	93.26	5
t_e	92.36	5
t_e (d, e)	91.43	5
$\Delta Hv/T_e$	20.81	5
d 25 to	113.97	5
e 134 °C	0.1984	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9999	5
30 mm	1.0000	5
BP	0.9382	5
t_e	0.9397	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°		
h			
f'	to		
g'	°		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension			
dynes/cm. 20°C		48.87	5
σ 30		46.71	5
40		44.60	5
Parachor [P]			
20°C			
30			
40			
Sugd.		305.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 6

NAME	1-Aminohexane Hexylamine	STRUCTURAL FORMULA $CH_3(CH_2)_5NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{15}N$ — Molecular Weight 101.188

		Ref.			Ref.			Ref.
F.P. °C	-22.9	3	dt/dP °C/mm 25°C BP t_e 30 mm	 1.884 0.0462 0.0348 0.6638	 5 5 5 5	f | | to g | _ _ °K h |		
F.P. 100%								
B.P. °C 760 mm 100 30 10 1	 132.7 73.7 47.3 27.1 -6.5	 3 5 5 5 5	ΔHm cal/g			f' | | to g' | _ _ °K h' |		
Pressure mm 25°C t_e	 8.85 1086.2	 5 5	ΔHv cal/g 25°C 30 mm BP t_e t_e (d, e) $\Delta Hv/T_e$	 105.25 101.21 86.50 84.46 84.27 20.40	 5 5 5 5 5 5	m | | to n | _ _ °K o |		
Density g/ml 20°C d_4^t 25 30	 0.7660 0.7620	 3 3				m' | | to n' | _ _ °K o' |		
a b	0.7820 -0.0_3798	5 5	d | 47 to e | 166 °C d' | to e' | °C	109.35 0.1722	5 5	Surface tension dynes/cm. 20°C γ 30 40	 46.19 44.29 42.43	 5 5 5
Ref. Index n_D 20°C 25 30	 1.4190 1.4165	 3 3	d_c g/ml v_c ml/g t_c °C P_c mm			Parachor [P] 20°C 30 40 Sugd.	 344.4	 5
"C"	0.7274	4	PV/RT 25°C 30 mm BP t_e t_c	 1.0047 1.0000 0.9426 0.9322	 5 5 5 5	Exp. L.1.%/wt. u. Dispersion		
MR (Obs.) MR (Calc.) (nD-d/2)	33.360 33.458	4 5				Flash Point °C Fire Point		
Dielectric			ΔHc kcal/m ΔHf ΔFf			M Spec. Ultra V. X-Ray Dif. Infrared		
A | 47 to B | 176 °C C	7.170 1486.1 213.8	3 3 3	Viscosity centistokes η °C			Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in		
A* | 47 to B* | 166 °C K c t_k | to t_x | °C	1.561 1404.3	5 5						
A' | to B' | °C C'			B^v | to A^v | °C (B^v) | to (A^v) | °C					
A'* to B'* °C								
Ac | to Bc | t_c °C Cc			c_p liq. °K c_p vap. °K c_v vap.					
Cryos. A* consts. 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 7

NAME	1-Aminoheptane Heptylamine	STRUCTURAL FORMULA $CH_3(CH_2)_6NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{17}N$ — Molecular Weight 115.214

		Ref.
F.P. °C	-18.	3
F.P. 100%		
B.P. °C 760 mm	156.9	3
100	94.7	5
30	66.9	5
10	45.6	5
1	10.1	5
Pressure mm 25°C	2.87	5
t_e	1149.3	5
Density g/ml 20°C	0.7754	3
d_4^t 25	0.7716	3
30		
a	0.7906	5
b	-0.0_3759	5
Ref. Index n_D 20°C	1.4251	3
25	1.4227	3
30		
"C"	0.7285	4
MR (Obs.)	38.001	4
MR (Calc.) (nD-d/2)	38.076	5
Dielectric		
A | 67 to	7.184	3
B | 203 °C	1575.4	3
C	209.2	3
A* | 67 to	1.614	5
B* | 193 °C	1491.3	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	172.85	5

			Ref.
dt/dP			
°C/mm			
25°C		5.276	5
BP		0.0486	5
t_e		0.0350	5
30 mm		0.7003	5
ΔHm cal/g			
ΔHv cal/g			
25°C		102.00	5
30 mm		94.89	5
BP		80.70	5
t_e		78.36	5
t_e (d, e)		78.19	5
ΔHv/T_e		20.24	5
d | 67 to		105.43	5
e | 193 °C		0.1576	5
d' | to			
e' | °C			
d_c g/ml			
v_c ml/g			
t_c °C			
P_c mm			
PV/RT			
25°C		1.0059	5
30 mm		1.0000	5
BP		0.9396	5
t_e		0.9262	5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes			
η °C			
B^v | to			
A^v | °C			
(B^v) |			
(A^v) |			
c_p liq. °			
c_p vap. °K			
c_v vap.			

			Ref.
f | to			
g | °			
h |			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		44.33	5
σ 30		42.61	5
40		40.94	5
Parachor [P] 20°C			
30			
40			
Sugd.		383.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 8

NAME	1-Aminooctane Octylamine	STRUCTURAL FORMULA $CH_3(CH_2)_7NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{19}N$ — Molecular Weight 129.240

		Ref.
F.P. °C	0.0	3
F.P. 100%		
B.P. °C		
760 mm	179.6	3
100	114.7	5
30	85.5	5
10	63.2	5
1	26.1	5
Pressure mm 25°C	0.93	5
t_e	1208.1	5
Density g/ml 20°C	0.7826	3
d_4^t 25	0.7790	3
30		
a	0.7970	5
b	-0.0_3720	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.) (nD-d/2)	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		
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	198.35	5

		Ref.
dt/dP		
°C/mm		
25°C	14.88	5
BP	0.0507	5
t_e	0.0351	5
30 mm	0.7329	5
ΔHm cal/g		
ΔHv cal/g		
25°C	99.71	5
30 mm	89.95	5
BP	76.19	5
t_e	73.61	5
t_e (d, e)	73.44	5
$\Delta Hv/T_e$	20.18	5
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	1.0050	5
30 mm	1.0000	5
BP	0.9368	5
t_e	0.9209	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.		

		Ref.
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	42.80	5
γ 30	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 9

NAME	1-Aminononane Nonylamine	STRUCTURAL FORMULA $CH_3(CH_2)_8NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{21}N$ — Molecular Weight 143.266

		Ref.
F.P. °C	-1.	3
F.P. 100%		
B.P. °C 760 mm	202.2	3
100	134.5	5
30	104.1	5
10	80.8	5
1	41.9	5
Pressure mm 25°C	0.29	5
t_e	1265.3	5
Density g/ml 20°C	0.7886	3
d_4^{t} 25	0.7853	3
30		
a	0.8018	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4336	3
25	1.4316	3
30		
"C"	0.7298	4
MR (Obs.)	47.273	4
MR (Calc.) (nD-d/2)	47.312	5
Dielectric		
A | 104 to	7.241	3
B | 254 °C	1756.1	3
C	200.6	3
A* | 104 to	1.738	5
B* | 244 °C	1668.4	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	223.70	5

		Ref.
dt/dP °C/mm		
25°C	43.96	5
BP	0.0528	5
t_e	0.0352	5
30 mm	0.7652	5
ΔHm cal/g		
ΔHv cal/g		
25°C	98.24	5
30 mm	85.96	5
BP	72.36	5
t_e	69.70	5
t_e (d, e)	69.38	5
$\Delta Hv/T_e$	20.10	5
d | 104 to	100.38	5
e | 244 °C	0.1386	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0028	5
30 mm	1.0000	5
BP	0.9317	5
t_e	0.9153	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f	to °		
g			
h			
f'	to °		
g'			
h'			
m	to °K		
n			
o			
m'	to °K		
n'			
o'			
Surface tension dynes/cm. 20°C		41.61	5
σ 30		40.23	5
40		38.89	5
Parachor [P] 20°C			
30			
40			
Sugd.		461.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 10

NAME	1-Aminodecane Decylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{23}N$
	Molecular Weight 157.292	$CH_3(CH_2)_9NH_2$

		Ref.
F.P. °C	16.1	3
F.P. 100%		
B.P. °C		
760 mm	220.5	3
100	151.1	5
30	119.8	5
10	95.8	5
1	55.7	5
Pressure		
mm 25°C	0.10	5
t_e	1312.0	5
Density		
g/ml 20°C	0.7936	3
d_4^{t} 25	0.7905	3
30		
a	0.8060	5
b	-0.0_3620	5
Ref. Index		
n_D 20°C	1.4369	3
25	1.4350	3
30		
"C"	0.7304	4
MR (Obs.)	51.916	4
MR (Calc.) (nD-d/2)	51.930	5
Dielectric		
A | 120 to	7.298	3
B | 274 °C	1844.7	3
C	197.1	3
A* | 120 to	1.824	5
B* | 264 °C	1755.7	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	244.21	5

		Ref.
dt/dP		
°C/mm		
25°C	118.2	5
BP	0.0540	5
t_e	0.0349	5
30 mm	0.7882	5
ΔHm cal/g		
ΔHv cal/g		
25°C	96.70	5
30 mm	82.49	5
BP	69.36	5
t_e	66.50	5
t_e (d, e)	66.27	5
$\Delta Hv/T_e$	20.22	5
d | 120 to	98.11	5
e | 264 °C	0.1304	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9999	5
30 mm	1.0000	5
BP	0.9308	5
t_e	0.9115	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.		

		Ref.
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	40.63	5
γ 30	39.38	5
40	38.15	5
Parachor [P]		
20°C		
30		
40		
Sugd.	500.4	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 11

NAME	1-Aminoundecane Undecylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{11}H_{25}N$ — Molecular Weight 171.318

$(CH_3)(CH_2)_{10}NH_2$

		Ref.
F.P. °C	15.5	3
F.P. 100%		
B.P. °C		
760 mm	241.7	3
100	169.7	5
30	137.3	5
10	112.3	5
1	70.6	5
Pressure		
mm 25°C	0.03	5
t_e	1365.0	5
Density		
g/ml 20°C	0.7979	3
d_4^{t} 25	0.7948	3
30		
a	0.8103	5
b	-0.03620	5
Ref. Index		
n_D 20°C	1.4398	3
25	1.4378	3
30		
"C"	0.7310	4
MR (Obs.)	56.565	4
MR (Calc.) (nD-d/2)	56.548	5
Dielectric		
A | 137 to	7.324	3
B | 298 °C	1931.6	3
C	193.1	3
A* | 137 to	1.876	5
B* | 288 °C	1841.3	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	268.03	5

		Ref.
dt/dP		
°C/mm		
25°C	364.5	5
BP	0.0559	5
t_e	0.0350	5
30 mm	0.8180	5
ΔHm cal/g		
ΔHv cal/g		
25°C	95.99	5
30 mm	79.60	5
BP	66.54	5
t_e	63.65	5
t_e (d, e)	63.25	5
$\Delta Hv/T_e$	20.15	5
d | 137 to	96.76	5
e | 288 °C	0.1250	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9956	5
30 mm	1.0000	5
BP	0.9258	5
t_e	0.9066	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity, centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq.		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	39.83	5
30	38.61	5
40	37.41	5
Parachor [P]		
20°C		
30		
40		
Sugd.	539.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 12

NAME	1-Aminododecane Dodecylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{11}NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{12}H_{27}N$ — Molecular Weight 185.344

		Ref.
F.P. °C	28.26	3
F.P. 100%		
B.P. °C		
760 mm	259.2	3
100	185.5	5
30	152.1	5
10	126.5	5
1	83.6	5
Pressure mm 25°C	0.01	5
t_e	1408.5	5
Density g/ml 20°C	0.8015[b]	3
d_4^t 25 30	0.7986[b]	3
a	0.8131	5
b	-0.0_3580	5
Ref. Index n_D 20°C	1.4421[b]	3
25	1.4403[b]	3
30		
"C"	0.7313	4
MR (Obs.)	61.198	4
MR (Calc.) (nD-d/2)	61.166	5
Dielectric		
A | 152 to	7.367	3
B | 318 °C	2014.0	3
C	189.8	3
A* | 152 to	1.945	5
B* | 308 °C	1922.8	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	287.65	5

		Ref.
dt/dP °C/mm		
25°C	1016.	5
BP	0.0572	5
t_e	0.0349	5
30 mm	0.8404	5
ΔHm cal/g		
ΔHv cal/g		
25°C	95.01	5
30 mm	76.89	5
BP	64.11	5
t_e	61.12	5
t_e (d, e)	60.71	5
$\Delta Hv/T_e$	20.20	5
d | 152 to	95.06	5
e | 308 °C	0.1194	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9918	5
30 mm	1.0000	5
BP	0.9234	5
t_e	0.9027	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.		

			Ref.
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		39.14	5
γ 30		38.02	5
40		36.92	5
Parachor [P] 20°C			
30			
40			
Sugd.		578.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 13

NAME	1-Aminotridecane Tridecylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{13}H_{29}N$	Molecular Weight 199.370	$CH_3(CH_2)_{12}NH_2$

		Ref.			Ref.			Ref.
F.P. °C	27.4	3	dt/dP °C/mm			f | to		
F.P. 100%			25°C	2844.	5	g | °		
B.P. °C			BP	0.0583	5	h |		
760 mm	275.8	3	t_e	0.0348	5	f' | to		
100	200.5	5	30 mm	0.8612	5	g' | °		
30	166.4	5	ΔHm cal/g			h'		
10	140.1	5	ΔHv cal/g			m | to		
1	96.0	5	25°C	94.33	5	n | °K		
Pressure mm 25°C			30 mm	74.50	5	o		
t_e	1449.0	5	BP	61.94	5	m' | to		
Density g/ml 20°C	0.8049[b]	3	t_e	58.86	5	n' | °K		
d_4^t 25	0.8019[b]	3	t_e (d, e)	58.45	5	o'		
30			ΔHv/T_e	20.25	5	Surface tension		
a	0.8169	5	d | 166 to	93.58	5	dynes/cm. 20°C	38.60	5
b	-0.03600	5	e | 326 °C	0.1147	5	σ 30	37.46	5
Ref. Index			d' | to			40	36.35	5
n_D 20°C	1.4443[b]	3	e' | °C			Parachor [P]		
25	1.4425[b]	3	d_c g/ml			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	5
MR (Calc.) (nD-d/2)	65.784	5	PV/RT			Exp. L.1.%/wt. u.		
Dielectric			25°C	0.9886	5	Dispersion		
A | 166 to	7.410	3	30 mm	1.0000	5	Flash Point °C		
B | 336 °C	2094.0	3	BP	0.9210	5	Fire Point		
C	186.6	3	t_e	0.8989	5	M. Spec.		
A* | 166 to	2.012	5	t_c			Ultra V.		
B* | 326 °C	2002.3	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						Benzene		
B' | °C			B^v | to			Ether		
C'			A^v | °C			n-Heptane		
A'* to			(B^v) |			Ethanol		
B'* °C			(A^v) |			Water		
Ac | to			c_p liq. °			Water in		
Bc | t_c °C			c_p vap. °K					
Cc			c_v vap.					
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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 14

NAME	1-Aminotetradecane Tetradecylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{13}NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{14}H_{31}N$ — Molecular Weight 213.396

		Ref.
F.P. °C	38.19	3
F.P. 100%		
B.P. °C 760 mm	291.3	3
100	214.5	5
30	179.7	5
10	152.8	5
1	107.6	5
Pressure mm 25°C t_e	1487.3	5
Density g/ml 20°C	0.8079[b]	3
d_4^t 25	0.8049[b]	3
30		
a	0.8199	5
b	-0.0_3600	5
Ref. Index n_D 20°C	1.4463[b]	3
25	1.4444[b]	3
30		
"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		
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	323.61	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0594	5
t_e	0.0346	5
30 mm	0.8805	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	72.26	5
BP	59.96	5
t_e	56.80	5
t_e (d, e)	56.41	5
$\Delta Hv/T_e$	20.31	5
d | 180 to	92.04	5
e | 344 °C	0.1101	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	0.9194	5
t_e	0.8957	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.		

		Ref.
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	38.14	5
γ 30	37.02	5
40	35.92	5
Parachor [P] 20°C		
30		
40		
Sugd.	656.4	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 15

NAME	1-Aminopentadecane Pentadecylamine	STRUCTURAL FORMULA
		$CH_3(CH_2)_{14}NH_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_{15}H_{33}N$	Molecular Weight 227.422

		Ref.
F.P. °C	37.3	3
F.P. 100%		
B.P. °C		
760 mm	307.6	3
100	229.1	5
30	193.4	5
10	165.8	5
1	119.5	5
Pressure mm 25°C		
t_e	1526.4	5
Density g/ml 20°C	0.8104[b]	3
d_4^{t} 25	0.8072[b]	3
30		
a	0.8232	5
b	-0.0_3640	5
Ref. Index		
n_D 20°C	1.4480[b]	3
25	1.4459[b]	3
30		
"C"	0.7323	4
MR (Obs.)	75.126	4
MR (Calc.) (nD-d/2)	75.020	5
Dielectric		
A | 193 to	7.477	3
B | 372 °C	2243.9	3
C	180.6	3
A* | 193 to	2.123	5
B* | 362 °C	2151.4	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	342.05	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0607	5
t_e		0.0346	5
30 mm		0.9024	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		70.23	5
BP		58.16	5
t_e		54.83	5
t_e (d, e)		54.52	5
$\Delta Hv/T_e$		20.27	5
d | 193 to		90.68	5
e | 362 °C		0.1057	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		0.9181	5
t_e		0.8918	5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes			
η °C			
B^v | to			
A^v | °C			
(B^v) |			
(A^v) |			
c_p liq. °			
c_p vap. °K			
c_v vap.			

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	37.71	5
σ 30	36.53	5
40	35.38	5
Parachor [P]		
20°C		
30		
40		
Sugd.	695.4	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 16

NAME	1-Aminohexadecane Hexadecylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{15}NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{35}N$ — Molecular Weight 241.448

		Ref.			Ref.			Ref.
F.P. °C	46.77	3	dt/dP °C/mm 25°C			f | | to		
F.P. 100%			BP	0.0618	5	g | __ °K		
B.P. °C			t_e	0.0346	5	h |		
760 mm	322.5	3	30 mm	0.9213	5	f' | | to		
100	242.5	5	ΔHm cal/g			g' | __ °K		
30	206.0	5	ΔHv cal/g 25°C			h' |		
10	177.9	5	30 mm	68.36	5	m | | to		
1	130.5	5	BP	56.43	5	n | __ °K		
Pressure mm 25°C			t_e	53.09	5	o |		
t_e	1562.2	5	t_e (d, e)	52.72	5	m' | | to		
Density g/ml 20°C	0.8129[b]	3	ΔHv/T_e	20.29	5	n' | __ °K		
d_4^t 25	0.8099[b]	3	d | 206 to	89.45	5	o' |		
30			e | 379 °C	0.1024	5	Surface tension dynes/cm. 20°C	37.38	5
a	0.8249	5	d' | to			γ 30	36.28	5
b	-0.0_3600	5	e' | °C			40	35.22	5
Ref. Index			d_c g/ml			Parachor [P] 20°C		
n_D 20°C	1.4496[b]	3	v_c ml/g			30		
25	1.4477[b]	3	t_c °C			40		
30			P_c mm			Sugd.	734.4	5
"C"	0.7325	4	PV/RT 25°C			Exp. L.1.%/wt. u.		
MR (Obs.)	79.760	4	30 mm	1.0000	5	Dispersion		
MR (Calc.) (nD-d/2)	79.638	5	BP	0.9153	5	Flash Point °C		
Dielectric			t_e	0.8885	5	Fire Point		
A | 206 to	7.507	3	t_c			M Spec.		
B | 389 °C	2313.9	3	ΔHc kcal/m			Ultra V.		
C	177.7	3	ΔHf			X-Ray Dif.		
A* | 206 to	2.173	5	ΔFf			Infrared		
B* | 379 °C	2221.1	5	Viscosity centistokes			Solubility in [+]		
K			η °C			Acetone		
c						Carbon tet.		
t_k | to						Benzene		
t_x | °C			B^v | to			Ether		
A' | to			A^v | °C			n-Heptane		
B' | °C			(B^v) | to			Ethanol		
C'			(A^v) | °C			Water		
A'* to			c_p liq. °K			Water in		
B'* °C			c_p vap. °K					
Ac | to			c_v vap.					
Bc | t_c °C								
Cc								
Cryos. A° consts. 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 17

NAME	1-Aminoheptadecane Heptadecylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{14}NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{17}H_{37}N$ — Molecular Weight 255.474

		Ref.
F.P. °C	46.	3
F.P. 100%		
B.P. °C 760 mm	335.9	3
100	254.6	5
30	217.5	5
10	188.9	5
1	140.6	5
Pressure mm 25°C t_e	1594.3	5
Density g/ml 20°C	0.8150[b]	3
d_4^t 25	0.8119[b]	3
30		
a	0.8274	5
b	-0.0_3620	5
Ref. Index n_D 20°C	1.4510[b]	3
25	1.4490[b]	3
30		
"C"	0.7328	4
MR (Obs.)	84.402	4
MR (Calc.) (nD-d/2)	84.256	5
Dielectric		
A 218 to	7.539	3
B 404 °C	2380.7	3
C	175.2	3
A* 218 to	2.224	5
B* 394 °C	2287.8	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	373.80	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0627	5
t_e	0.0345	5
30 mm	0.9379	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	66.54	5
BP	54.82	5
t_e	51.42	5
t_e (d, e)	51.07	5
$\Delta Hv/T_e$	20.31	5
d 218 to	88.07	5
e 394 °C	0.0990	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	0.9136	5
t_e	0.8857	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B_v to		
A_v °C		
(B^v)		
(A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f to		
g °		
h		
f' to		
g' °		
h'		
m to		
n °K		
o		
m' to		
n' °K		
o'		
Surface tension dynes/cm. 20°C	37.06	5
γ 30	35.94	5
40	34.85	5
Parachor [P] 20°C		
30		
40		
Sugd.	773.4	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 18

NAME	1-Aminooctadecane Octadecylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{15}NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{39}N$ — Molecular Weight 269.500

		Ref.
F.P. °C	52.86	3
F.P. 100%		
B.P. °C 760 mm	348.8	3
100	266.3	5
30	228.6	5
10	199.5	5
1	150.3	5
Pressure mm 25°C t_e	1624.8	5
Density g/ml 20°C	0.8168[b]	3
d_4^t 25	0.8138[b]	3
30		
a	0.8288	5
b	-0.0_3600	5
Ref. Index n_D 20°C	1.4522[b]	3
25	1.4503[b]	3
30		
"C"	0.7330	4
MR (Obs.)	89.044	4
MR (Calc.) (nD-d/2)	88.874	5
Dielectric		
A | 229 to	7.569	3
B | 418 °C	2444.9	3
C	172.7	3
A* | 229 to	2.273	5
B* | 408 °C	2352.0	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	388.29	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0636	5
t_e		0.0344	5
30 mm		0.9537	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		64.87	5
BP		53.36	5
t_e		49.90	5
t_e (d, e)		49.57	5
$\Delta Hv/T_e$		20.33	5
d | 229 to		86.77	5
e | 408 °C		0.0958	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		0.9123	5
t_e		0.8829	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.			

		Ref.
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	36.75	5
γ 30	35.69	5
40	34.64	5
Parachor [P] 20°C		
30		
40		
Sugd.	812.4	5
Exp. L.1.%/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. 19

NAME	1-Aminononadecane Nonadecylamine	STRUCTURAL FORMULA $CH_3(CH_2)NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{19}H_{41}N$ — Molecular Weight 283.526

		Ref.			Ref.			Ref.
F.P. °C	53.	3	dt/dP °C/mm 25°C			f | to		
F.P. 100%			BP	0.0642	5	g | °		
B.P. °C			t_e	0.0343	5	h |		
760 mm	360.3	3	30 mm	0.9667	5	f' | to		
100	276.8	5	ΔHm cal/g			g' | °		
30	238.7	5	ΔHv cal/g 25°C			h' |		
10	209.1	5	30 mm	63.28	5	m | to		
1	159.2	5	BP	51.90	5	n | °K		
Pressure mm 25°C			t_e	48.48	5	o |		
t_e	1651.1	5	t_e (d, e)	48.09	5	m' | to		
Density g/ml 20°C	0.8185[b]	3	ΔHv/T_e	20.39	5	n' | °K		
d_4^t 25	0.8156[b]	3	d | 239 to	85.61	5	o' |		
30			e | 421 °C	0.0936	5	Surface tension		
a	0.8301	5	d' | to			dynes/cm. 20°C	36.50	5
b	-0.0_3580	5	e' | °C			γ 30	35.47	5
Ref. Index			d_c g/ml			40	34.47	5
n_D 20°C	1.4533[b]	3	v_c ml/g			Parachor [P]		
25	1.4514[b]	3	t_c °C			20°C		
30			P_c mm			30		
"C"	0.7331	4	PV/RT 25°C			40		
MR (Obs.)	93.680	4	30 mm	1.0000	5	Sugd.	851.4	5
MR (Calc.) (nD-d/2)	93.492	5	BP	0.9094	5	Exp. L. l. %/wt. u.		
Dielectric			t_e	0.8803	5	Dispersion		
A | 239 to	7.604	3	t_c			Flash Point °C		
B | 431 °C	2506.8	3	ΔHc kcal/m			Fire Point		
C	170.5	3	ΔHf			M. Spec.		
A* | 239 to	2.326	5	ΔFf			Ultra V.		
B* | 421 °C	2414.2	5	Viscosity centistokes			X-Ray Dif.		
K			η °C			Infrared		
c						Solubility in [+]		
t_k | to						Acetone		
t_x | °C						Carbon tet.		
A' | to						Benzene		
B' | °C			B^v | to			Ether		
C'			A^v | °C			n-Heptane		
A'* to			(B^v) |			Ethanol		
B'* °C			(A^v) |			Water		
Ac | to			c_p liq.			Water in		
Bc | t_c °C			c_p vap. °K					
Cc			c_v vap.					
Cryos. A° consts. 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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 20

NAME	1-Aminoeicosane Eicosylamine	STRUCTURAL FORMULA $CH_3(CH_2)NH_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{43}N$	Molecular Weight 297.552

		Ref.
F.P. °C	60.	3
F. P. 100%		
B.P. °C 760 mm	372.4	3
100	287.8	5
30	249.0	5
10	219.0	5
1	168.2	5
Pressure mm 25°C t_e	1679.7	5
Density g/ml 20°C	0.8201[b]	3
d_4^t 25	0.8170[b]	3
30		
a	0.8325	5
b	-0.03620	5
Ref. Index n_D 20°C	1.4543[b]	3
25	1.4524[b]	3
30		
"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		
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	414.63	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0651	5
t_e	0.0342	5
30 mm	0.9819	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	61.78	5
BP	50.57	5
t_e	47.10	5
t_e (d, e)	46.73	5
$\Delta Hv/T_e$	20.38	5
d 249 to	84.41	5
e 435 °C	0.0909	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	0.9079	5
t_e	0.8778	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.		

			Ref.
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	36.27	5
γ	30	35.19	5
	40	34.13	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	890.4	5
Exp. L. 1. %/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

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TABLE VI. AMINOALKANES

No. 21

NAME	1-Aminoheneicosane Heneicosylamine	STRUCTURAL FORMULA
		$CH_3(CH_2)_{19}CH_2NH_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_{21}H_{45}N$	Molecular Weight 311.578

		Ref.
F.P. °C	59.	3
F.P. 100%		
B.P. °C		
760 mm	384.	3
100	294.	5
30	254.	5
10	223.	5
1	170.	5
Pressure mm 25°C		
t_e	1706.9	5
Density g/ml 20°C	0.8215[a]	3
d_4^{t} 25 30	0.8185[a]	3
a	0.8335	5
b	-0.03600	5
Ref. Index n_D 20°C	1.4553[a]	3
25	1.4534[a]	3
30		
"C"	0.7335	4
MR (Obs.)	102.964	4
MR (Calc.) (nD-d/2)	102.728	5
Dielectric		
A | 254 to	7.40524	5
B | 460 °C	2488.4	5
C	166.	5
A* | 254 to	2.15898	5
B* | 450 °C	2394.8	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	430.31	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0695	5
t_e	0.0364	5
30 mm	1.0251	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	57.56	5
BP	46.74	5
t_e	43.26	5
t_e (d, e)	42.89	5
$\Delta Hv/T_e$	19.16	5
d | 254 to	78.64	5
e | 450 °C	0.0831	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	0.9056	5
t_e	0.8721	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq.		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °/		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	29.35	5
σ 30	28.50	5
40	27.67	5
Parachor [P] 20°C		
30		
40		
Sugd.	882.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 22

NAME	1-Aminodocosane Docosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{20}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{47}N$ — Molecular Weight 325.604

		Ref.
F.P. °C	66.	3
F.P. 100%		
B.P. °C 760 mm	395.	3
100	304.	5
30	263.	5
10	231.	5
1	178.	5
Pressure mm 25°C t_e	1732.2	5
Density g/ml 20°C	0.8229[a]	3
d_4^t 25	0.8198[a]	3
30		
a	0.8353	5
b	-0.03620	5
Ref. Index n_D 20°C	1.4562[a]	3
25	1.4543[a]	3
30		
"C"	0.7336	4
MR (Obs.)	107.599	4
MR (Calc.) (nD-d/2)	107.346	5
Dielectric		
A | 263 to	7.41079	5
B | 473 °C	2532.3	5
C	164.	5
A* | 263 to	2.18015	5
B* | 463 °C	2438.7	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	442.94	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0705	5
t_e	0.0365	5
30 mm	1.0412	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	56.09	5
BP	45.44	5
t_e	41.92	5
t_e (d, e)	41.57	5
$\Delta Hv/T_e$	19.06	5
d | 263 to	77.27	5
e | 463 °C	0.0806	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	0.9039	5
t_e	0.8694	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.		

		Ref.
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	29.33	5
γ 30	28.45	5
40	27.60	5
Parachor [P] 20°C		
30		
40		
Sugd.	920.8	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 23

NAME	1-Aminotricosane Triacosylamine	STRUCTURAL FORMULA
		$CH_3(CH_2)_{21}CH_2NH_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_{23}H_{49}N$	Molecular Weight 339.630

		Ref.
F.P. °C	64.	3
F.P. 100%		
B.P. °C 760 mm	405.	3
100	313.	5
30	271.	5
10	239.	5
1	185.	5
Pressure mm 25°C t_e	1754.6	5
Density g/ml 20°C	0.8241[a]	3
d_4^t 25	0.8211[a]	3
30		
a	0.8361	5
b	-0.03600	5
Ref. Index n_D 20°C	1.4570[a]	3
25	1.4551[a]	3
30		
"C"	0.7337	4
MR (Obs.)	112.241	4
MR (Calc.) (nD-d/2)	111.964	5
Dielectric		
A | 271 to	7.41418	5
B | 484 °C	2570.4	5
C	162.	5
A* | 271 to	2.19920	5
B* | 474 °C	2477.2	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	454.41	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0715	5
t_e	0.0366	5
30 mm	1.0557	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	54.67	5
BP	44.18	5
t_e	40.66	5
t_e (d, e)	40.31	5
$\Delta Hv/T_e$	18.98	5
d | 271 to	75.88	5
e | 474 °C	0.0783	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	0.9021	5
t_e	0.8668	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B_v^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq.		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension dynes/cm. 20°C	29.42	5
γ 30	28.57	5
40	27.74	5
Parachor [P] 20°C		
30		
40		
Sugd.	959.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 24

NAME	1-Aminotetracosane Tetracosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{22}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{51}N$ — Molecular Weight 353.656

		Ref.
F.P. °C	70.	3
F.P. 100%		
B.P. °C 760 mm	415.	3
100	322.	5
30	279.	5
10	246.	5
1	192.	5
Pressure mm 25°C t_e	1777.5	5
Density g/ml 20°C	0.8252[a]	3
d_4^t 25	0.8222[a]	3
30		
a	0.8372	5
b	-0.0_3600	5
Ref. Index n_D 20°C	1.4577[a]	3
25	1.4558[a]	3
30		
"C"	0.7338	4
MR (Obs.)	116.874	4
MR (Calc.) (nD-d/2)	116.582	5
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		
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	465.91	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0724	5
t_e		0.0367	5
30 mm		1.0701	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		53.36	5
BP		43.02	5
t_e		39.49	5
t_e (d, e)		39.14	5
$\Delta Hv/T_e$		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		1.0000	5
BP		0.9007	5
t_e		0.8645	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.			

		Ref.
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	29.50	5
γ 30	28.65	5
40	27.82	5
Parachor [P] 20°C		
30		
40		
Sugd.	998.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 25

NAME	1-Aminopentacosane Pentacosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{23}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{25}H_{53}N$ — Molecular Weight 367.682

		Ref.
F.P. °C	69.	3
F.P. 100%		
B.P. °C 760 mm	425.	3
100	330.	5
30	287.	5
10	254.	5
1	199.	5
Pressure mm 25°C t_e	1800.3	5
Density g/ml 20°C	0.8262[a]	3
d_4^t 25	0.8232[a]	3
30		
a	0.8382	5
b	-0.0_3600	5
Ref. Index n_D 20°C	1.4584[a]	3
25	1.4565[a]	3
30		
"C"	0.7340	4
MR (Obs.)	121.523	4
MR (Calc.) (nD-d/2)	121.200	5
Dielectric		
A | 287 to	7.42070	5
B | 507 °C	2646.8	5
C	158.	5
A* | 287 to	2.23413	5
B* | 497 °C	2553.9	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	477.42	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0734	5
t_e	0.0368	5
30 mm	1.0846	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	52.15	5
BP	41.95	5
t_e	38.41	5
t_e (d, e)	38.06	5
$\Delta Hv/T_e$	18.81	5
d | 287 to	73.44	5
e | 497 °C	0.0741	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	0.8992	5
t_e	0.8621	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °			
h |			
f' | to			
g' | °			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension dynes/cm.	20°C	29.57	5
γ	30	28.72	5
	40	27.89	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	1037.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 26

NAME	1-Aminohexacosane Hexacosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{24}CH_2NH_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_{26}H_{55}N$	Molecular Weight 381.708

		Ref.
F.P. °C	75.	3
F.P. 100%		
B.P. °C 760 mm	434.	3
100	338.	5
30	295.	5
10	261.	5
1	205.	5
Pressure mm 25°C t_e	1820.5	5
Density g/ml 20°C	0.8272[a]	3
d_4^t 25	0.8241[a]	3
30		
a	0.8396	5
b	-0.0_3620	5
Ref. Index n_D 20°C	1.4591[a]	3
25	1.4571[a]	3
30		
"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		
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	487.77	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0742	5
t_e	0.0369	5
30 mm	1.0983	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	50.91	5
BP	40.89	5
t_e	37.33	5
t_e (d, e)	37.02	5
$\Delta Hv/T_e$	18.73	5
d 295 to	72.11	5
e 508 °C	0.0719	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	0.8978	5
t_e	0.8599	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.		

		Ref.
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	29.65	5
γ 30	28.77	5
40	27.91	5
Parachor [P] 20°C		
30		
40		
Sugd.	1076.8	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 27

NAME	1-Aminoheptacosane Heptacosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{25}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{27}H_{57}N$ — Molecular Weight 395.734

		Ref.			Ref.			Ref.
F.P. °C	73.	3	dt/dP °C/mm 25°C			f | to		
F.P. 100%			BP	0.0751	5	g | °		
B.P. °C			t_e	0.0370	5	h |		
760 mm	443.	3	30 mm	1.1112	5	f' | to		
100	346.	5	ΔHm cal/g			g' | °		
30	302.	5	ΔHv cal/g 25°C			h' |		
10	268.	5	30 mm	49.81	5	m | to		
1	211.	5	BP	39.91	5	n | °K		
Pressure mm 25°C			t_e	36.35	5	o |		
t_e	1841.0	5	t_e (d, e)	36.04	5	m' | to		
Density g/ml 20°C	0.8282[a]	3	ΔHv/T_e	18.65	5	n' | °K		
d_4^t 25	0.8251[a]	3	d | 302 to	71.01	5	o' |		
30			e | 518 °C	0.0702	5	Surface tension		
a	0.8406	5	d' | to			dynes/cm. 20°C	29.74	5
b	-0.03620	5	e' | °C			σ 30	28.85	5
Ref. Index			d_c g/ml			40	27.99	5
n_D 20°C	1.4597[a]	3	v_c ml/g			Parachor [P]		
25	1.4578[a]	3	t_c °C			20°C		
30			P_c mm			30		
"C"	0.7341	4	PV/RT 25°C			40		
MR (Obs.)	130.797	4	30 mm	1.0000	5	Sugd.	1115.8	5
MR (Calc.) (nD-d/2)	130.436	5	BP	0.8965	5	Exp. L. l. %/wt. u.		
Dielectric			t_e	0.8579	5	Dispersion		
A | 302 to	7.43104	5	t_c			Flash Point °C		
B | 528 °C	2721.0	5	ΔHc kcal/m			Fire Point		
C	155.	5	ΔHf			M. Spec.		
A* | 302 to	2.27105	5	ΔFf			Ultra V.		
B* | 518 °C	2628.4	5	Viscosity centistokes			X-Ray Dif.		
K			η °C			Infrared		
c						Solubility in [+]		
t_k | to			B^v | to		Acetone		
t_x | °C			A^v | °C		Carbon tet.		
A' | to			(B^v)		Benzene		
B' | °C			(A^v)		Ether		
C'			c_p liq. °		n-Heptane			
A'* to			c_p vap. °K		Ethanol			
B'* °C			c_v vap.		Water			
Ac | to					Water in			
Bc | t_c °C								
Cc								
Cryos. A° consts. B°								
t_e °C	498.15	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

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No. 28

NAME	1-Aminooctacosane Octacosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{26}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{59}N$ — Molecular Weight 409.760

		Ref.
F.P. °C	78.	3
F.P. 100%		
B.P. °C 760 mm	452.	3
100	354.	5
30	309.	5
10	275.	5
1	217.	5
Pressure mm 25°C t_e	1860.7	5
Density g/ml 20°C	0.8290[a]	3
d_4^t 25	0.8259[a]	3
30		
a	0.8414	5
b	-0.03620	5
Ref. Index n_D 20°C	1.4602[a]	3
25	1.4583[a]	3
30		
"C"	0.7342	4
MR (Obs.)	135.429	4
MR (Calc.) (nD-d/2)	135.540	5
Dielectric		
A |309 to	7.43211	5
B |539 °C	2753.5	5
C	153.	5
A* |309 to	2.28519	5
B* |529 °C	2661.4	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	508.52	5

		Ref.
dt/dP °C/mm 25°C BP	0.0760	5
t_e	0.0371	5
30 mm	1.1241	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	48.78	5
BP	38.99	5
t_e	35.41	5
t_e (d, e)	35.11	5
$\Delta Hv/T_e$	18.56	5
d | 309 to	70.02	5
e | 529 °C	0.0686	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	0.8951	5
t_e	0.8556	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.		

		Ref.
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	29.79	5
γ 30	28.91	5
40	28.05	5
Parachor [P] 20°C		
30		
40		
Sugd.	1154.8	5
Exp. L. 1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 29

NAME	1-Aminononacosane Nonacosylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{27}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{29}H_{61}N$ — Molecular Weight 423.786

		Ref.
F.P. °C	77.	3
F.P. 100%		
B.P. °C 760 mm	460.	3
100	361.	5
30	316.	5
10	281.	5
1	223.	5
Pressure mm 25°C t_e	1878.6	5
Density g/ml 20°C	0.8298[a]	3
d_4^t 25	0.8267[a]	3
30		
a	0.8422	5
b	-0.0_3620	5
Ref. Index n_D 20°C	1.4608[a]	3
25	1.4588[a]	3
30		
"C"	0.7344	4
MR (Obs.)	140.087	4
MR (Calc.) (nD-d/2)	139.672	5
Dielectric		
A 316 to	7.43908	5
B 548 °C	2789.7	5
C	152.	5
A* 316 to	2.30446	5
B* 538 °C	2697.6	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	517.75	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0767	5
t_e	0.0372	5
30 mm	1.1361	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	47.71	5
BP	38.08	5
t_e	34.51	5
t_e (d, e)	34.23	5
ΔHv/T_e	18.49	5
d 316 to	68.82	5
e 538 °C	0.0668	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	0.8939	5
t_e	0.8537	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f to		
g °C		
h		
f' to		
g' °C		
h'		
m to		
n °K		
o		
m' to		
n' °K		
o'		
Surface tension dynes/cm. 20°C	29.86	5
γ 30	28.97	5
40	28.11	5
Parachor [P] 20°C		
30		
40		
Sugd.	1193.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 30

NAME	1-Aminotriacontane Triacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{28}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{63}N$ — Molecular Weight 437.812

		Ref.
F.P. °C	82.	3
F.P. 100%		
B.P. °C 760 mm	469.	3
100	369.	5
30	323.	5
10	288.	5
1	229.	5
Pressure mm 25°C t_e	1898.1	5
Density g/ml 20°C	0.8305[a]	3
d_4^t 25	0.8275[a]	3
30		
a	0.8425	5
b	-0.0_3600	5
Ref. Index n_D 20°C	1.4612[a]	3
25	1.4593[a]	3
30		
"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		
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	528.12	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0776	5
t_e		0.0373	5
30 mm		1.1490	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		46.82	5
BP		37.29	5
t_e		33.71	5
t_e (d, e)		33.42	5
$\Delta Hv/T_e$		18.42	5
d | 323 to		67.96	5
e | 548 °C		0.0654	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.			

			Ref.
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		29.91	5
γ 30		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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 31

NAME	1-Aminohentriacontane Hentriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{29}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{31}H_{65}N$ — Molecular Weight 451.838

		Ref.
F.P. °C	80.	3
F.P. 100%		
B.P. °C 760 mm	476.	3
100	375.	5
30	329.	5
10	294.	5
1	234.	5
Pressure mm 25°C t_e	1913.8	5
Density g/ml 20°C	0.8312[a]	3
d_4^{t} 25	0.8282[a]	3
30		
a	0.8432	5
b	-0.0_3600	5
Ref. Index n_D 20°C	1.4617[a]	3
25	1.4598[a]	3
30		
"C"	0.7345	4
MR (Obs.)	149.359	4
MR (Calc.) (nD-d/2)	148.908	5
Dielectric		
A | 329 to	7.44500	5
B | 566 °C	2852.6	5
C	149.	5
A* | 329 to	2.33422	5
B* | 556 °C	2761.3	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	536.21	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0783	5
t_e	0.0374	5
30 mm	1.1595	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	45.82	5
BP	36.44	5
t_e	32.88	5
t_e (d, e)	32.60	5
ΔHv/T_e	18.35	5
d | 329 to	66.80	5
e | 556 °C	0.0638	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	0.8914	5
t_e	0.8499	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	29.96	5
σ 30	29.11	5
40	28.27	5
Parachor [P] 20°C		
30		
40		
Sugd.	1271.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 32

NAME	1-Aminodotriacontane Dotriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{30}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{67}N$ — Molecular Weight 465.864

		Ref.
F.P. °C	85.	3
F.P. 100%		
B.P. °C		
760 mm	484.	3
100	382.	5
30	336.	5
10	300.	5
1	240.	5
Pressure mm 25°C		
t_e	1931.2	5
Density g/ml 20°C	0.8319[a]	3
d_4^t 25	0.8288[a]	3
30		
a	0.8443	5
b	-0.03620	5
Ref. Index		
n_D 20°C	1.4622[a]	3
25	1.4602[a]	3
30		
"C"	0.7346	4
MR (Obs.)	154.010	4
MR (Calc.) (nD-d/2)	153.526	5
Dielectric		
A | 336 to	7.44411	5
B | 575 °C	2879.4	5
C	147.	5
A* | 336 to	2.34491	5
B* | 565 °C	2788.7	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	545.46	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0790	5
t_e	0.0374	5
30 mm	1.1707	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	44.98	5
BP	35.68	5
t_e	32.08	5
t_e (d, e)	31.83	5
$\Delta Hv/T_e$	18.26	5
d | 336 to	65.99	5
e | 565 °C	0.0626	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	0.8902	5
t_e	0.8479	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.		

		Ref.
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	30.02	5
γ 30	29.13	5
40	28.27	5
Parachor [P] 20°C		
30		
40		
Sugd.	1310.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 33

NAME	1-Aminotritriacontane Tritriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{31}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{33}H_{69}N$ — Molecular Weight 479.890

		Ref.			Ref.			Ref.
F.P. °C	83.	3	dt/dP °C/mm 25°C			f | to		
F.P. 100%			BP	0.0797	5	g | °		
B.P. °C 760 mm	491.	3	t_e	0.0375	5	h |		
100	388.	5	30 mm	1.1812	5	f' | to		
30	341.	5	ΔHm cal/g			g' | °		
10	305.	5				h' |		
1	245.	5	ΔHv cal/g 25°C			m | to		
Pressure mm 25°C t_e	1946.8	5	30 mm	44.09	5	n | °K		
Density g/ml 20°C	0.8325[a]	3	BP	34.93	5	o |		
d_4^t 25	0.8294[a]	3	t_e	31.33	5	m' | to		
30			t_e (d, e)	31.10	5	n' | °K		
a	0.8449	5	ΔHv/T_e	18.19	5	o' |		
b	-0.0_3620	5	d | 341 to	64.96	5	Surface tension dynes/cm. 20°C	30.06	5
Ref. Index n_D 20°C	1.4626[a]	3	e | 574 °C	0.0612	5	σ 30	29.18	5
25	1.4606[a]	3	d' | to			40	28.31	5
30			e' | °C			Parachor [P] 20°C		
"C"	0.7347	4	d_c g/ml			30		
MR (Obs.)	158.650	4	v_c ml/g			40		
MR (Calc.) (nD-d/2)	158.144	5	t_c °C			Sugd.	1349.8	5
Dielectric			P_c mm			Exp. L. 1. %/wt. u.		
A | 341 to	7.44894	5	PV/RT 25°C			Dispersion		
B | 584 °C	2909.9	5	30 mm	1.0000	5	Flash Point °C		
C	146.	5	BP	0.8892	5	Fire Point		
A* | 341 to	2.36065	5	t_e	0.8464	5	M. Spec.		
B* | 574 °C	2819.2	5	t_c			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 °C			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 | t_c °C			c_p liq. °/			Water in		
Cc			c_p vap. °K					
Cryos. A° consts. 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 34

NAME	1-Aminotetratriacontane Tetratriacontylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{71}N$	Molecular Weight 493.916	$CH_3(CH_2)_{32}CH_2NH_2$

		Ref.			Ref.			Ref.
F.P. °C	87.	3	dt/dP °C/mm 25°C			f | | to		
F.P. 100%			BP	0.0805	5	g | _ _ °K		
B.P. °C			t_e	0.0376	5	h |		
760 mm	499.	3	30 mm	1.1925	5	f' | | to		
100	395.	5	ΔHm cal/g			g' | _ _ °K		
30	348.	5	ΔHv cal/g 25°C			h' |		
10	311.	5	30 mm	43.34	5	m | | to		
1	250.	5	BP	34.27	5	n | _ _ °K		
Pressure mm 25°C			t_e	30.68	5	o |		
t_e	1964.1	5	t_e (d, e)	30.44	5	m' | | to		
Density g/ml 20°C	0.8331[a]	3	ΔHv/T_e	18.13	5	n' | _ _ °K		
d_4^{t} 25	0.8301[a]	3	d | 348 to	64.23	5	o' |		
30			e | 583 °C	0.0600	5	Surface tension		
a	0.8451	5	d' | to			dynes/cm. 20°C	30.11	5
b	-0.0_3600	5	e' | °C			γ 30	29.25	5
Ref. Index			d_c g/ml			40	28.41	5
n_D 20°C	1.4630[a]	3	v_c ml/g			Parachor [P]		
25	1.4610[a]	3	t_c °C			20°C		
30			P_c mm			30		
"C"	0.7347	4	PV/RT 25°C			40		
MR (Obs.)	163.291	4	30 mm	1.0000	5	Sugd.	1388.8	5
MR (Calc.)	162.762	5	BP	0.8880	5	Exp. L. 1. %/wt. u.		
(nD-d/2)			t_e	0.8444	5	Dispersion		
Dielectric			t_c			Flash Point °C		
A | 348 to	7.44804	5	ΔHc kcal/m			Fire Point		
B | 593 °C	2936.7	5	ΔHf			M Spec.		
C	144.	5	ΔFf			Ultra V.		
A* | 348 to	2.37063	5	Viscosity centistokes			X-Ray Dif.		
B* | 583 °C	2846.7	5	η °C			Infrared		
K						Solubility in +		
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						Water in		
Ac | to			c_p liq. °K					
Bc | t_c °C			c_p vap. °K					
Cc			c_v vap.					
Cryos. A* consts. B*								
t_e °C	562.81	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

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TABLE VI. AMINOALKANES

No. 35

NAME	1-Aminopentatriacontane Pentatriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{33}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{35}H_{73}N$ — Molecular Weight 507.942

		Ref.
F.P. °C	86.	3
F.P. 100%		
B.P. °C 760 mm	506.	3
100	401.	5
30	354.	5
10	317.	5
1	255.	5
Pressure mm 25°C t_e	1978.8	5
Density g/ml 20°C	0.8337[a]	3
d_4^{t} 25 30	0.8306[a]	3
a	0.8461	5
b	-0.0_3620	5
Ref. Index n_D 20°C	1.4634[a]	3
25	1.4614[a]	3
30		
"C"	0.7348	4
MR (Obs.)	167.932	4
MR (Calc.) (nD-d/2)	167.380	5
Dielectric		
A 354 to	7.45275	5
B 601 °C	2967.2	5
C	143.	5
A* 354 to	2.38613	5
B* 591 °C	2877.6	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	570.89	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0811	5
t_e	0.0377	5
30 mm	1.2029	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	42.55	5
BP	33.58	5
t_e	29.96	5
t_e (d, e)	29.76	5
$\Delta Hv/T_e$	18.03	5
d 354 to	63.36	5
e 591 °C	0.0589	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	0.8868	5
t_e	0.8426	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °		
c_p vap. °K		
c_v vap.		

			Ref.
f to			
g °			
h			
f' to			
g' °			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension dynes/cm. 20°C		30.16	5
σ 30		29.27	5
40		28.41	5
Parachor [P] 20°C			
30			
40			
Sugd.		1427.8	5
Exp. L.1.%/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

No. 36

NAME	1-Aminohexatriacontane Hexatriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{34}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{75}N$ — Molecular Weight 521.968

		Ref.
F.P. °C	90.	3
F.P. 100%		
B.P. °C 760 mm	512.	3
100	406.	5
30	358.	5
10	321.	5
1	259.	5
Pressure mm 25°C t_e	1991.5	5
Density g/ml 20°C	0.8342[a]	3
d_4^{t} 25 30	0.8311[a]	3
a	0.8466	5
b	-0.03620	5
Ref. Index n_D 20°C	1.4637[a]	3
25	1.4617[a]	3
30		
"C"	0.7348	4
MR (Obs.)	172.562	4
MR (Calc.) (nD-d/2)	171.998	5
Dielectric		
A 358 to	7.45569	5
B 608 °C	2992.0	5
C	142.	5
A* 358 to	2.39967	5
B* 598 °C	2902.7	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	577.83	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0817	5
t_e	0.0378	5
30 mm	1.2118	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	41.75	5
BP	32.90	5
t_e	29.29	5
t_e (d, e)	29.10	5
$\Delta Hv/T_e$	17.97	5
d 358 to	62.42	5
e 598 °C	0.0577	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	0.8858	5
t_e	0.8411	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.		

		Ref.
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	30.20	5
γ 30	29.31	5
40	28.44	5
Parachor [P] 20°C		
30		
40		
Sugd.	1466.8	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 37

NAME	1-Aminoheptatriacontane Heptatriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{35}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{77}N$	Molecular Weight 535.994

		Ref.
F.P. °C	88.	3
F.P. 100%		
B.P. °C 760 mm	519.	3
100	413.	5
30	364.	5
10	327.	5
1	264.	5
Pressure mm 25°C t_e	2006.6	5
Density g/ml 20°C	0.8347[a]	3
d_4^t 25	0.8316[a]	3
30		
a	0.8471	5
b	-0.0_3620	5
Ref. Index n_D 20°C	1.4640[a]	3
25	1.4621[a]	3
30		
"C"	0.7348	4
MR (Obs.)	177.191	4
MR (Calc.) (nD-d/2)	176.616	5
Dielectric		
A | 364 to	7.45306	5
B | 616 °C	3013.1	5
C	140.	5
A* | 364 to	2.40714	5
B* | 606 °C	2924.5	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	585.95	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0824	5
t_e	0.0379	5
30 mm	1.2214	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	41.08	5
BP	32.29	5
t_e	28.67	5
t_e (d, e)	28.50	5
$\Delta Hv/T_e$	17.89	5
d | 364 to	61.74	5
e | 606 °C	0.0567	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	0.8848	5
t_e	0.8395	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	30.24	5
σ 30	29.35	5
40	28.48	5
Parachor [P] 20°C		
30		
40		
Sugd.	1505.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 38

NAME	1-Aminooctatriacontane Octatriacontylamine	STRUCTURAL FORMULA $CH_3(CH_2)_{36}CH_2NH_2$
Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{79}N$ — Molecular Weight 550.020

		Ref.
F.P. °C	92.	3
F.P. 100%		
B.P. °C 760 mm	525.	3
100	418.	5
30	369.	5
10	332.	5
1	268.	5
Pressure mm 25°C t_e	2019.3	5
Density g/ml 20°C	0.8352[a]	3
d_4^{t} 25	0.8321[a]	3
30		
a	0.8476	5
b	-0.03620	5
Ref. Index n_D 20°C	1.4643[a]	3
25	1.4624[a]	3
30		
"C"	0.7348	4
MR (Obs.)	181.820	4
MR (Calc.) (nD-d/2)	181.234	5
Dielectric		
A | 369 to	7.45595	5
B | 623 °C	3037.9	5
C	139.	5
A* | 369 to	2.42007	5
B* | 613 °C	2949.7	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	592.89	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0829	5
t_e	0.0379	5
30 mm	1.2303	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.35	5
BP	31.68	5
t_e	28.06	5
t_e (d, e)	27.90	5
$\Delta Hv/T_e$	17.82	5
d | 369 to	60.89	5
e | 613 °C	0.0556	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	0.8839	5
t_e	0.8380	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.		

		Ref.
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	5
γ 30	29.39	5
40	28.52	5
Parachor [P] 20°C		
30		
40		
Sugd.	1544.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 39

NAME	1-Aminononatriacontane Nonatriacontylamine	STRUCTURAL FORMULA
		$CH_3(CH_2)_{37}CH_2NH_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_{39}H_{81}N$	Molecular Weight 564.046

		Ref.
F.P. °C	90.	3
F.P. 100%		
B.P. °C 760 mm	532.	3
100	424.	5
30	375.	5
10	337.	5
1	273.	5
Pressure mm 25°C t_e	2034.5	5
Density g/ml 20°C	0.8356[a]	3
d_4^t 25	0.8326[a]	3
30		
a	0.8476	5
b	-0.03600	5
Ref. Index n_D 20°C	1.4646[a]	3
25	1.4626[a]	3
30		
"C"	0.7349	4
MR (Obs.)	186.471	4
MR (Calc.) (nD-d/2)	185.852	5
Dielectric		
A | 375 to	7.46046	5
B | 631 °C	3068.4	5
C	138.	5
A* | 375 to	2.43377	5
B* | 621 °C	2980.4	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	601.01	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0836	5
t_e	0.0380	5
30 mm	1.2407	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.71	5
BP	31.15	5
t_e	27.55	5
t_e (d, e)	27.39	5
$\Delta Hv/T_e$	17.77	5
d | 375 to	60.14	5
e | 621 °C	0.0545	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	0.8829	5
t_e	0.8365	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq.		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	30.31	5
30	29.45	5
40	28.60	5
Parachor [P] 20°C		
30		
40		
Sugd.	1583.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 40

NAME	1-Aminotetracontane Tetracontylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{83}N$
		Molecular Weight 578.072

		Ref.
F.P. °C	94.	3
F. P. 100%		
B. P. °C 760 mm	538.	3
100	429.	5
30	380.	5
10	342.	5
1	277.	5
Pressure mm 25°C t_e	2047.0	5
Density g/ml 20°C	0.8360[a]	3
d_4^t 25	0.8329[a]	3
30		
a	0.8484	5
b	-0.03620	5
Ref. Index n_D 20°C	1.4649[a]	3
25	1.4629[a]	3
30		
"C"	0.7350	4
MR (Obs.)	191.123	4
MR (Calc.) (nD-d/2)	190.470	5
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		
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	607.95	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0842	5
t_e	0.0381	5
30 mm	1.2496	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	39.06	5
BP	30.58	5
t_e	26.95	5
t_e (d, e)	26.83	5
$\Delta Hv/T_e$	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	1.0000	5
BP	0.8820	5
t_e	0.8350	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.		

		Ref.
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	30.34	5
γ 30	29.45	5
40	28.58	5
Parachor [P] 20°C		
30		
40		
Sugd.	1622.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 41

NAME	2-Aminopropane Isopropylamine	STRUCTURAL FORMULA $CH_3CH(NH_2)CH_3$
Mole % Pur.	Ref. 3	Molecular Formula C_3H_9N — Molecular Weight 59.110

		Ref.
F.P. °C	-95.2	3
F.P. 100%		
B.P. °C		
760 mm	32.4	3
100	-13.4	5
30	-33.8	5
10	-49.3	5
1	-75.2	5
Pressure		
mm 25°C	574.9	5
t_e	818.9	5
Density		
g/ml 20°C	0.6889	3
d_4^{t} 25	0.6839	3
30		
a	0.7092	5
b	-0.03936	5
Ref. Index		
n_D 20°C	1.3742	3
25	1.3711	3
30		
"C"	0.7269	4
MR (Obs.)	19.604	4
MR (Calc.) (nD-d/2)	19.604	5
Dielectric		
A | -34 to	7.10666	5
B | 64 °C	1121.5	5
C	233.	5
A* | -34 to	1.35243	5
B* | 54 °C	1051.4	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	34.45	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0448	5
BP	0.0359	5
t_e	0.0338	5
30 mm	0.5123	5
ΔHm cal/g		
ΔHv cal/g		
25°C	111.65	
30 mm	125.32	5
BP	109.94	5
t_e	109.46	5
t_e (d, e)	109.46	5
$\Delta Hv/T_e$	21.03	5
d | -34 to	117.47	5
e | 54 °C	0.2325	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9656	5
30 mm	1.0000	5
BP	0.9588	5
t_e	0.9569	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °		
h |		
f' | to		
g' | °		
h'		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	19.53	5
γ 30	18.34	5
40	17.16	5
Parachor [P]		
20°C		
30		
40		
Sugd.	180.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 42

NAME	2-Aminobutane sec-Butylamine	STRUCTURAL FORMULA $CH_3CH(NH_2)CH_2CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_4H_{11}N$ — Molecular Weight 73.136

		Ref.
F.P. °C	-104.5	3
F.P. 100%		
B.P. °C 760 mm	63.	3
100	13.	5
30	-9.	5
10	-26.	5
1	-54.	5
Pressure mm 25°C	172.6	5
t_e	901.8	5
Density g/ml 20°C	0.7246	3
d_4^{t} 25	0.7201	3
30		
a	0.7426	5
b	-0.0_3873	5
Ref. Index n_D 20°C	1.3934	3
25	1.3907	3
30		
"C"	0.7246	4
MR (Obs.)	24.111	4
MR (Calc.) (nD-d/2)	24.222	5
Dielectric		
A | -9 to	7.15069	5
B | 98 °C	1238.3	5
C	227.	5
A* | -9 to	1.45818	5
B* | 88 °C	1164.2	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	68.13	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1291	5
BP	0.0388	5
t_e	0.0339	5
30 mm	0.5569	5
ΔHm cal/g		
ΔHv cal/g		
25°C	106.68	5
30 mm	113.68	5
BP	98.94	5
t_e	97.91	5
t_e (d, e)	97.88	5
$\Delta Hv/T_e$	20.98	5
d | -9 to	111.88	5
e | 88 °C	0.2055	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9847	5
30 mm	1.0000	5
BP	0.9544	5
t_e	0.9497	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.		

			Ref.
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	22.42	5
γ	30	21.29	5
	40	20.17	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	219.8	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 43

NAME	1-Amino-2-methylpropane iso-Butylamine	STRUCTURAL FORMULA $NH_2CH_2CH(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_{11}N$	Molecular Weight 73.136

		Ref.
F.P. °C	-86.7	3
F.P. 100%		
B.P. °C		
760 mm	68.	3
100	18.	5
30	-5.	5
10	-22.	5
1	-50.	5
Pressure mm 25°C	140.7	5
t_e	915.0	5
Density g/ml 20°C	0.7346	3
d_4^{t} 25	0.7296	3
30		
a	0.7546	5
b	-0.03978	5
Ref. Index n_D 20°C	1.3972	3
25	1.3945	3
30		
"C"	0.7212	4
MR (Obs.)	23.986	4
MR (Calc.) (nD-d/2)	24.222	5
Dielectric		
A | -5 to	7.15696	5
B | 104 °C	1257.2	5
C	226.	5
A* | -5 to	1.46023	5
B* | 94 °C	1182.6	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	73.65	5

			Ref.
dt/dP			
°C/mm			
25°C		0.1547	5
BP		0.0393	5
t_e		0.0339	5
30 mm		0.5641	5
ΔHm cal/g			
ΔHv cal/g			
25°C		109.46	5
30 mm		115.72	5
BP		100.57	5
t_e		99.43	5
t_e (d, e)		99.39	5
$\Delta Hv/T_e$		20.97	5
d | -5 to		114.74	5
e | 94 °C		0.2085	5
d' | to			
e' | °C			
d_c g/ml			
v_c ml/g			
t_c °C			
P_c mm			
PV/RT			
25°C		0.9870	5
30 mm		1.0000	5
BP		0.9534	5
t_e		0.9483	5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes			
η °C			
B^v | to			
A^v | °C			
(B^v) |			
(A^v) |			
c_p liq.			
c_p vap. °K			
c_v vap.			

			Ref.
f | to			
g | °			
h |			
f' | to			
g' | °			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		23.70	5
ϑ 30		22.40	5
40		21.13	5
Parachor [P] 20°C			
30			
40			
Sugd.		219.8	5
Exp. L.1.%/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

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In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 44

NAME	2-Amino-2-methylpropane tert-Butylamine	STRUCTURAL FORMULA $CH_3CNH_2(CH_3)_2$

Mole % Pur.	Ref. 3	Molecular Formula $C_4H_{11}N$	Molecular Weight 73.136

		Ref.
F.P. °C	-67.5	3
F.P. 100%		
B.P. °C		
760 mm	44.4	3
100	-2.9	5
30	-24.0	5
10	-40.1	5
1	-66.9	5
Pressure mm 25°C	362.1	5
t_e	851.4	5
Density g/ml 20°C	0.6958	3
d_4^{t} 25	0.6908	3
30		
a	0.7160	5
b	-0.0_3948	5
Ref. Index n_D 20°C	1.3784	3
25	1.3760	3
30		
"C"	0.7273	4
MR (Obs.)	24.256	4
MR (Calc.) (nD-d/2)	24.222	5
Dielectric		
A | -24 to	7.13044	5
B | 78 °C	1170.4	5
C	231.	5
A* | -24 to	1.45590	5
B* | 68 °C	1098.5	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	47.63	5

		Ref.
dt/dP °C/mm		
25°C	0.0672	5
BP	0.0370	5
t_e	0.0338	5
30 mm	0.5301	5
ΔHm cal/g		
ΔHv cal/g		
25°C	96.52	5
30 mm	106.06	5
BP	92.76	5
t_e	92.13	5
t_e (d, e)	92.13	5
$\Delta Hv/T_e$	21.01	5
d | -24 to	101.39	5
e | 68 °C	0.1945	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9739	5
30 mm	1.0000	5
BP	0.9570	5
t_e	0.9540	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.		

		Ref.
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	18.99	5
γ 30	17.86	5
40	16.74	5
Parachor [P] 20°C		
30		
40		
Sugd.	219.8	5
Exp. L. 1. %/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. 45

NAME	Methyl-n-hexylamine	STRUCTURAL FORMULA
		$CH_3NHCH_2(CH_2)_3CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{17}N$	Molecular Weight 115.214

		Ref.
F.P. °C	-31.	3
F.P. 100%		
B.P. °C 760 mm	142.	3
100	83.	5
30	56.	5
10	35.	5
1	1.	5
Pressure mm 25°C	5.33	5
t_e	1110.9	5
Density g/ml 20°C	0.7601	3
d_4^t 25	0.7651	3
30		
a	0.7401	5
b	-0.00100	5
Ref. Index n_D 20°C	1.4257	3
25	1.4237	3
30		
"C"	0.7441	4
MR (Obs.)	38.814	4
MR (Calc.) (nD-d/2)	38.076	5
Dielectric		
A | 56 to	7.24486	5
B | 186 °C	1544.9	5
C	212.	5
A* | 56 to	1.68504	5
B* | 176 °C	1462.1	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	155.90	5

		Ref.
dt/dP		
°C/mm		
25°C	2.965	5
BP	0.0464	5
t_e	0.0343	5
30 mm	0.6723	5
ΔHm cal/g		
ΔHv cal/g		
25°C	97.66	5
30 mm	92.55	5
BP	79.20	5
t_e	77.21	5
t_e (d, e)	77.05	5
ΔHv/T_e	20.73	5
d | 56 to	101.20	5
e | 176 °C	0.1550	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0058	5
30 mm	1.0000	5
BP	0.9424	5
t_e	0.9306	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		24.37	5
σ 30		25.68	5
40		27.03	5
Parachor [P]			
20°C			
30			
40			
Sugd.		336.8	5
Exp. L.1.%/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

No. 46

NAME	Methyl-n-octylamine		STRUCTURAL FORMULA
			$CH_3NHCH_2(CH_2)_6CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{21}N$	Molecular Weight 143.266

		Ref.
F.P. °C	-11.	3
F.P. 100%		
B.P. °C		
760 mm	186.	3
100	121.	5
30	92.	5
10	69.	5
1	32.	5
Pressure		
mm 25°C	0.60	5
t_e	1224.8	5
Density		
g/ml 20°C	0.7764	3
d_4^t 25	0.7726	3
30		
a	0.7916	5
b	-0.0_3760	5
Ref. Index		
n_D 20°C	1.429	3
25	1.427	3
30		
"C"	0.7338	4
MR (Obs.)	47.571	4
MR (Calc.)	47.312	5
(nD-d/2)		
Dielectric		
A | 92 to	7.28925	5
B | 235 °C	1719.3	5
C	204.	5
A* | 92 to	1.79450	5
B* | 225 °C	1632.4	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	205.24	5

		Ref.
dt/dP		
°C/mm		
25°C	21.91	5
BP	0.0506	5
t_e	0.0345	5
30 mm	0.7368	5
ΔHm cal/g		
ΔHv cal/g		
25°C	93.54	5
30 mm	83.56	5
BP	70.79	5
t_e	68.35	5
t_e (d, e)	68.18	5
$\Delta Hv/T_e$	20.47	5
d | 92 to	96.02	5
e | 225 °C	0.1357	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0049	5
30 mm	1.0000	5
BP	0.9359	5
t_e	0.9202	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.		

			Ref.
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		25.53	5
γ 30		24.55	5
40		23.59	5
Parachor [P]			
20°C			
30			
40			
Sugd.		414.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 47

NAME	Dimethylamine	STRUCTURAL FORMULA
		$(CH_3)_2NH$

Mole % Pur.	Ref. 3	Molecular Formula C_2H_7N	Molecular Weight 45.084

		Ref.
F.P. °C	-92.19	3
F.P. 100%		
B.P. °C 760 mm	6.88	3
100	-35.71	5
30	-54.65	5
10	-69.07	5
1	-92.99	5
Pressure mm 25°C	1475.8	5
t_e	749.2	5
Density g/ml 20°C	0.6556[a]	3
d_4^{t} 25	0.6496[a]	3
30		
a	0.6805	5
b	-0.00109	5
Ref. Index n_D 20°C	1.358[a]	3
25	1.354[a]	3
30		
"C"	0.7324	4
MR (Obs.)	15.101	4
MR (Calc.) (nD-d/2)	15.186	5
Dielectric		
A | -55 to	7.06396	5
B | 37 °C	1024.4	5
C	238.	5
A* | -55 to	1.22081	5
B* | 27 °C	957.9	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	6.52	5

		Ref.
dt/dP °C/mm		
25°C	0.0199	5
BP	0.0335	5
t_e	0.0338	5
30 mm	0.4751	5
ΔHm cal/g		
ΔHv cal/g		
25°C	125.37	5
30 mm	147.63	5
BP	130.46	5
t_e	130.57	5
t_e (d, e)	130.56	5
$\Delta Hv/T_e$	21.05	5
d | -55 to	132.38	5
e | 27 °C	0.2790	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9438	5
30 mm	1.0000	5
BP	0.9625	5
t_e	0.9629	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. •		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	•		
h			
f'	to		
g'	•		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm.	20°C	17.73	5
σ	30	16.33	5
	40	14.95	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	141.8	5
Exp. L.1.%/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 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

No. 48

NAME	Diethylamine			STRUCTURAL FORMULA
				$(C_2H_5)_2NH$
Mole % Pur.	Ref. 3	Molecular Formula $C_4H_{11}N$	Molecular Weight 73.136	

		Ref.
F.P. °C	-50.0	3
F.P. 100%		
B.P. °C 760 mm	55.5	3
100	6.8	5
30	-14.9	5
10	-31.5	5
1	-59.1	5
Pressure mm 25°C	233.5	5
t_e	881.4	5
Density g/ml 20°C	0.6993	3
d_4^t 25	0.6926	3
30		
a	0.7262	5
b	-0.00131	5
Ref. Index n_D 20°C	1.3823	3
25	1.3783	3
30		
"C"	0.7307	4
MR (Obs.)	24.356	4
MR (Calc.) (nD-d/2)	24.422	5
Dielectric		
A | -15 to	7.14099	5
B | 90 °C	1209.9	5
C	229.	5
A* | -15 to	1.45594	5
B* | 80 °C	1136.8	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	59.85	5

		Ref.
dt/dP °C/mm		
25°C	0.0988	5
BP	0.0381	5
t_e	0.0339	5
30 mm	0.5460	5
ΔHm cal/g		
ΔHv cal/g		
25°C	102.54	5
30 mm	110.63	5
BP	96.42	5
t_e	95.55	5
t_e (d, e)	95.54	5
$\Delta Hv/T_e$	20.99	5
d | -15 to	107.62	5
e | 80 °C	0.2019	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9806	5
30 mm	1.0000	5
BP	0.9553	5
t_e	0.9513	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.		

		Ref.
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	8.89	5
γ 30	8.21	5
40	7.55	5
Parachor [P] 20°C		
30		
40		
Sugd.	180.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 49

NAME	Di-n-propylamine	STRUCTURAL FORMULA
		$(C_3H_7)_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{15}N$	Molecular Weight 101.188

		Ref.
F.P. °C	-63.	3
F.P. 100%		
B.P. °C 760 mm	109.2	3
100	53.9	5
30	29.0	5
10	10.1	5
1	-21.6	5
Pressure mm 25°C	24.09	5
t_e	1024.9	5
Density g/ml 20°C	0.7375	3
d_4^{t} 25	0.7326	3
30		
a	0.7571	5
b	-0.03974	5
Ref. Index n_D 20°C	1.4051	3
25	1.4021	3
30		
"C"	0.7319	4
MR (Obs.)	33.636	4
MR (Calc.) (nD-d/2)	33.658	5
Dielectric		
A | 29 to	7.20663	5
B | 149 °C	1415.4	5
C	218.	5
A* | 29 to	1.61517	5
B* | 139 °C	1336.0	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	119.33	5

		Ref.
dt/dP		
°C/mm		
25°C	0.7520	5
BP	0.0432	5
t_e	0.0341	5
30 mm	0.6242	5
ΔHm cal/g		
ΔHv cal/g		
25°C	96.45	5
30 mm	95.75	5
BP	82.37	5
t_e	80.75	5
t_e (d, e)	80.68	5
$\Delta Hv/T_e$	20.82	5
d | 29 to	100.60	5
e | 139 °C	0.1669	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0012	5
30 mm	1.0000	5
BP	0.9475	5
t_e	0.9386	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	6.58	5
γ 30	6.24	5
40	5.90	5
Parachor [P] 20°C		
30		
40		
Sugd.	219.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

NAME	Di-n-butylamine		STRUCTURAL FORMULA
			$(C_4H_9)_2NH$
Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{19}N$	Molecular Weight 129.240

		Ref.
F.P. °C	-62.	3
F.P. 100%		
B.P. °C		
760 mm	159.6	3
100	98.0	5
30	70.2	5
10	49.0	5
1	13.5	5
Pressure		
mm 25°C	2.28	5
t_e	1156.7	5
Density		
g/ml 20°C	0.7619	3
d_4^t 25	0.7577	3
30		
a	0.7787	5
b	-0.03839	5
Ref. Index		
n_D 20°C	1.4199	3
25	1.4173	3
30		
"C"	0.7328	4
MR (Obs.)	42.918	4
MR (Calc.) (nD-d/2)	42.894	5
Dielectric		
A | 70 to	7.26603	5
B | 206 °C	1616.4	5
C	209.	5
A* | 70 to	1.74363	5
B* | 196 °C	1531.8	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	175.60	5

		Ref.
dt/dP		
°C/mm		
25°C	6.446	5
BP	0.0480	5
t_e	0.0344	5
30 mm	0.6983	5
ΔHm cal/g		
ΔHv cal/g		
25°C	93.50	5
30 mm	86.52	5
BP	73.68	5
t_e	71.52	5
t_e (d, e)	71.39	5
$\Delta Hv/T_e$	20.60	5
d | 70 to	96.61	5
e | 196 °C	0.1437	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0064	5
30 mm	1.0000	5
BP	0.9398	5
t_e	0.9264	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.		

			Ref.
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		5.42	5
γ 30		5.18	5
40		4.95	5
Parachor [P]			
20°C			
30			
40			
Sugd.		258.8	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			

+ grams/100 grams solvent

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
		$(C_5H_{11})_2NH$
Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{23}N$ — Molecular Weight 157.292

		Ref.
F.P. °C	-33.	3
F.P. 100%		
B.P. °C 760 mm	203.	3
100	136.	5
30	106.	5
10	83.	5
1	44.	5
Pressure mm 25°C	0.25	5
t_e	1267.9	5
Density g/ml 20°C	0.7780	3
d_4^t 25	0.7741	3
30		
a	0.7936	5
b	-0.0_3780	5
Ref. Index n_D 20°C	1.4297	3
25	1.4273	3
30		
"C"	0.7334	4
MR (Obs.)	52.195	4
MR (Calc.) (nD-d/2)	52.130	5
Dielectric		
A | 106 to	7.29982	5
B | 254 °C	1783.1	5
C	201.	5
A* | 106 to	1.83597	5
B* | 244 °C	1695.1	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	224.37	5

		Ref.
dt/dP		
°C/mm		
25°C	50.15	5
BP	0.0522	5
t_e	0.0347	5
30 mm	0.7613	5
ΔHm cal/g		
ΔHv cal/g		
25°C	90.94	5
30 mm	79.38	5
BP	66.95	5
t_e	64.40	5
t_e (d, e)	64.21	5
$\Delta Hv/T_e$	20.36	5
d | 106 to	92.90	5
e | 244 °C	0.1278	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0029	5
30 mm	1.0000	5
BP	0.9332	5
t_e	0.9159	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		4.71	5
σ 30		4.52	5
40		4.34	5
Parachor [P]			
20°C			
30			
40			
Sugd.		297.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 52

NAME	Di-n-hexylamine	STRUCTURAL FORMULA
		$(C_6H_{13})_2NH$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{12}H_{27}N$	185.344

		Ref.
F.P. °C	-13.06	3
F.P. 100%		
B.P. °C		
760 mm	239.8	3
100	167.9	5
30	135.3	5
10	110.2	5
1	68.0	5
Pressure mm 25°C	0.04	5
t_e	1362.0	5
Density g/ml 20°C	0.7889	3
d^t_4 25	0.7853	3
30		
a	0.8033	5
b	-0.0_3720	5
Ref. Index n_D 20°C	1.4364	3
25	1.4341	3
30		
"C"	0.7339	4
MR (Obs.)	61.478	4
MR (Calc.) (nD-d/2)	61.366	5
Dielectric		
A 135 to	7.43353	5
B 296 °C	2018.2	5
C	204.	5
A* 135 to	2.01290	5
B* 286 °C	1922.5	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	265.92	5

		Ref.
dt/dP °C/mm		
25°C	281.5	5
BP	0.0556	5
t_e	0.0348	5
30 mm	0.8235	5
ΔHm cal/g		
ΔHv cal/g		
25°C	84.89	5
30 mm	72.39	5
BP	61.46	5
t_e	58.85	5
t_e (d, e)	58.72	5
$\Delta Hv/T_e$	20.23	5
d 135 to	86.56	5
e 286 °C	0.1047	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0007	5
30 mm	1.0000	5
BP	0.9283	5
t_e	0.9081	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.		

			Ref.
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	4.22	5
γ	30	4.07	5
	40	3.92	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	336.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 53

NAME	Di-n-heptylamine		STRUCTURAL FORMULA
			$(C_7H_{15})_2NH$
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		
F.P. 100%			25°C	1986.	5	g | °C		
B.P. °C			BP	0.0588	5	h |		
760 mm	272.	3	t_e	0.0353	5	f' | to		
100	196.	5	30 mm	0.8616	5	g' | °C		
30	162.	5	ΔHm cal/g			h' |		
10	136.	5	ΔHv cal/g			m | to		
1	92.	5	25°C	85.82	5	n | °K		
Pressure mm 25°C			30 mm	68.25	5	o |		
t_e	1440.0	5	BP	56.68	5	m' | to		
Density			t_e	53.73	5	n' | °K		
g/ml 20°C	0.7974	3	t_e (d, e)	53.48	5	o' |		
d_4^t 25	0.7937	3	ΔHv/T_e	19.92	5	Surface tension		
30			d | 162 to	85.33	5	dynes/cm. 20°C	3.89	5
a	0.8122	5	e | 322 °C	0.1053	5	γ 30	3.75	5
b	-0.03740	5	d' | to			40	3.61	5
Ref. Index			e' | °C			Parachor [P]		
n_D 20°C	1.4416	3	d_c g/ml			20°C		
25	1.4393	3	v_c ml/g			30		
30			t_c °C			40		
"C"	0.7342	4	P_c mm			Sugd.	375.8	5
MR (Obs.)	70.753	4	PV/RT			Exp. L. l. %/wt. u.		
MR (Calc.) (nD-d/2)	70.602	5	25°C	0.9878	5	Dispersion		
Dielectric			30 mm	1.0000	5	Flash Point °C		
A | 162 to	7.34382	5	BP	0.9227	5	Fire Point		
B | 332 °C	2048.5	5	t_e	0.8992	5	M. Spec.		
C	187.	5	t_c			Ultra V.		
A* | 162 to	1.97702	5	ΔHc kcal/m			X-Ray Dif.		
B* | 322 °C	1956.9	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) |			Ethanol		
A'* to			(A^v) |			Water		
B'* °C			c_p liq. °C			Water in		
Ac | to			c_p vap. °K					
Bc | t_c °C			c_v vap.					
Cc								
Cryos. A°								
consts. 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 54

NAME	Di-n-octylamine	STRUCTURAL FORMULA
		$(C_8H_{17})_2NH$
Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{35}N$ — Molecular Weight 241.448

		Ref.
F.P. °C	14.62	3
F.P. 100%		
B.P. °C 760 mm	302.	3
100	223.	5
30	187.	5
10	159.	5
1	113.	5
Pressure mm 25°C t_e	1513.0	5
Density g/ml 20°C	0.8038	3
d_4^t 25	0.8003	3
30		
a	0.8178	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4456	3
25	1.4433	3
30		
"C"	0.7346	4
MR (Obs.)	80.040	4
MR (Calc.)	79.838	5
(nD-d/2)		
Dielectric		
A | 187 to	7.36840	5
B | 367 °C	2172.0	5
C	182.	5
A* | 187 to	2.04164	5
B* | 357 °C	2079.1	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	336.55	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0616	5
t_e	0.0355	5
30 mm	0.9059	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	64.01	5
BP	52.87	5
t_e	49.80	5
t_e (d, e)	49.53	5
$\Delta Hv/T_e$	19.72	5
d | 187 to	82.04	5
e | 357 °C	0.0966	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	0.9181	5
t_e	0.8919	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.		

		Ref.
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	3.64	5
γ 30	3.51	5
40	3.39	5
Parachor [P] 20°C		
30		
40		
Sugd.	414.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

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.
F.P. °C	25.	3
F.P. 100%		
B.P. °C 760 mm	334.	3
100	251.	5
30	213.	5
10	184.	5
1	135.	5
Pressure mm 25°C t_e	1589.7	5
Density g/ml 20°C	0.8089	3
d_4^t 25	0.8055	3
30		
a	0.8225	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4487	3
25	1.4465	3
30		
"C"	0.7347	4
MR (Obs.)	89.311	4
MR (Calc.) (nD-d/2)	89.074	5
Dielectric		
A | 213 to	7.38608	5
B | 403 °C	2297.7	5
C	176.	5
A* | 213 to	2.09423	5
B* | 393 °C	2204.0	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	373.06	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0647	5
t_e	0.0358	5
30 mm	0.9526	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	60.92	5
BP	49.98	5
t_e	46.75	5
t_e (d, e)	46.46	5
$\Delta Hv/T_e$	19.50	5
d | 213 to	80.13	5
e | 393 °C	0.0902	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	0.9132	5
t_e	0.8842	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	3.44	5
30	3.33	5
40	3.22	5
Parachor [P] 20°C		
30		
40		
Sugd.	453.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 56

NAME	Di-n-decylamine			STRUCTURAL FORMULA
				$(C_{10}H_{21})_2NH$
Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{43}N$	Molecular Weight 297.552	

		Ref.			Ref.			Ref.
F.P. °C	34.	3	dt/dP °C/mm 25°C			f | | to		
F.P. 100%			BP	0.0671	5	g | __ °K		
B.P. °C			t_e	0.0361	5	h |		
760 mm	359.	3	30 mm	0.9889	5	f' | to		
100	272.	5	ΔHm cal/g			g' | __ °K		
30	233.	5				h' |		
10	203.	5	ΔHv cal/g 25°C			m | to		
1	153.	5	30 mm	57.72	5	n | __ °K		
Pressure mm 25°C			BP	47.08	5	o |		
t_e	1648.4	5	t_e	43.76	5	m' | to		
Density g/ml 20°C	0.8130[b]	3	t_e (d, e)	43.47	5	n' | __ °K		
d^t_4 25	0.8096[b]	3	ΔHv/T_e	19.30	5	o' |		
30			d | 233 to	77.47	5	Surface tension		
a	0.8266	5	e | 422 °C	0.0847	5	dynes/cm. 20°C	3.29	5
b	-0.0_3680	5	d' | to			γ 30	3.18	5
Ref. Index			e' | °C			40	3.07	5
n_D 20°C	1.4513[b]	3	d_c g/ml			Parachor [P]		
25	1.4491[b]	3	v_c ml/g			20°C		
30			t_c °C			30		
"C"	0.7350	4	P_c mm			40		
MR (Obs.)	98.602	4	PV/RT 25°C			Sugd.	492.8	5
MR (Calc.) (nD-d/2)	98.310	5	30 mm	1.0000	5	Exp. L. l. %/wt. u.		
Dielectric			BP	0.9092	5	Dispersion		
A | 233 to	7.39600	5	t_e	0.8780	5	Flash Point °C		
B | 432 °C	2393.1	5	t_c			Fire Point		
C	171.	5	ΔHc kcal/m			M Spec.		
A* | 233 to	2.13837	5	ΔHf			Ultra V.		
B* | 422 °C	2299.4	5	ΔFf			X-Ray Dif.		
K			Viscosity centistokes			Infrared		
c			η °C			Solubility in [+]		
t_k | to						Acetone		
t_x | °C						Carbon tet.		
A' | to						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_v vap.					
Cryos. A° consts. B°								
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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 57

NAME	Di-n-undecylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{47}N$	Molecular Weight 325.604	$(C_{11}H_{23})_2NH$

		Ref.
F.P. °C	42.	3
F.P. 100%		
B.P. °C 760 mm	382.	3
100	293.	5
30	252.	5
10	221.	5
1	169.	5
Pressure mm 25°C t_e	1702.2	5
Density g/ml 20°C	0.8165[b]	3
d_4^t 25	0.8131[b]	3
30		
a	0.8301	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4534[b]	3
25	1.4513[b]	3
30		
"C"	0.7351	4
MR (Obs.)	107.868	4
MR (Calc.) (nD-d/2)	107.546	5
Dielectric		
A | 252 to	7.40538	5
B | 458 °C	2481.7	5
C	167.	5
A* | 252 to	2.17896	5
B* | 448 °C	2388.0	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	428.01	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0693	5
t_e	0.0363	5
30 mm	1.0223	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	54.89	5
BP	44.54	5
t_e	41.16	5
t_e (d, e)	40.87	5
$\Delta Hv/T_e$	19.11	5
d | 252 to	74.98	5
e | 448 °C	0.0797	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	0.9058	5
t_e	0.8725	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h		
f' | to		
g' | °C		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension dynes/cm. 20°C	3.16	5
30	3.06	5
40	2.96	5
Parachor [P] 20°C		
30		
40		
Sugd.	531.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 58

NAME	Di-n-dodecylamine	STRUCTURAL FORMULA
		$(C_{12}H_{25})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{51}N$	Molecular Weight 353.656

		Ref.
F.P. °C	51.	3
F.P. 100%		
B.P. °C 760 mm	403.	3
100	311.	5
30	269.	5
10	237.	5
1	183.	5
Pressure mm 25°C t_e	1750.5	5
Density g/ml 20°C	0.8194[b]	3
d_4^t 25	0.8161[b]	3
30		
a	0.8326	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4552[b]	3
25	1.4531[b]	3
30		
"C"	0.7352	4
MR (Obs.)	117.147	4
MR (Calc.) (nD-d/2)	116.782	5
Dielectric		
A | 269 to	7.41435	5
B | 482 °C	2563.7	5
C	163.	5
A* | 269 to	2.21710	5
B* | 472 °C	2470.2	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	452.13	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0713	5
t_e	0.0366	5
30 mm	1.0528	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	52.32	5
BP	42.26	5
t_e	38.85	5
t_e (d, e)	38.57	5
$\Delta Hv/T_e$	18.94	5
d | 269 to	72.59	5
e | 472 °C	0.0752	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	0.9026	5
t_e	0.8675	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.		

		Ref.
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	3.06	5
γ 30	2.96	5
40	2.87	5
Parachor [P] 20°C		
30		
40		
Sugd.	570.8	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		

[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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 59

NAME	Di-n-tridecylamine	STRUCTURAL FORMULA
		$(C_{13}H_{27})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{26}H_{55}N$	Molecular Weight 381.708

		Ref.
F.P. °C	56.5	3
F.P. 100%		
B.P. °C 760 mm	422.	3
100	328.	5
30	285.	5
10	252.	5
1	197.	5
Pressure mm 25°C t_e	1793.7	5
Density g/ml 20°C	0.8220[b]	3
d_4^t 25	0.8185[b]	3
30		
a	0.8360	5
b	-0.03700	5
Ref. Index n_D 20°C	1.4568[b]	3
25	1.4546[b]	3
30		
"C"	0.7353	4
MR (Obs.)	126.421	4
MR (Calc.) (nD-d/2)	126.018	5
Dielectric		
A 285 to	7.42300	5
B 504 °C	2639.0	5
C	159.	5
A* 285 to	2.25326	5
B* 494 °C	2545.8	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	473.97	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0731	5
t_e	0.0368	5
30 mm	1.0806	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	49.97	5
BP	40.18	5
t_e	36.70	5
t_e (d, e)	36.47	5
$\Delta Hv/T_e$	18.75	5
d 285 to	70.32	5
e 494 °C	0.0714	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	0.8997	5
t_e	0.8629	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f to		
g °C		
h		
f' to		
g' °C		
h'		
m to		
n °K		
o		
m' to		
n' °K		
o'		
Surface tension dynes/cm. 20°C	2.97	5
γ 30	2.87	5
40	2.78	5
Parachor [P] 20°C		
30		
40		
Sugd.	609.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 60

NAME	Di-n-tetradecylamine	STRUCTURAL FORMULA
		$(C_{14}H_{29})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{59}N$	Molecular Weight 409.760

		Ref.
F.P. °C	60.62	3
F.P. 100%		
B.P. °C		
760 mm	440.	3
100	343.	5
30	300.	5
10	266.	5
1	209.	5
Pressure mm 25°C		
t_e	1834.3	5
Density g/ml 20°C	0.8241[b]	3
d_4^t 25	0.8207[b]	3
30		
a	0.8377	5
b	-0.0_3680	5
Ref. Index		
n_D 20°C	1.4582[b]	3
25	1.4560[b]	3
30		
"C"	0.7355	4
MR (Obs.)	135.724	4
MR (Calc.) (nD-d/2)	135.254	5
Dielectric		
A 300 to	7.42537	5
B 525 °C	2704.0	5
C	155.	5
A* 300 to	2.28154	5
B* 515 °C	2611.5	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	494.70	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0748	5
t_e	0.0370	5
30 mm	1.1063	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	47.91	5
BP	38.34	5
t_e	34.84	5
t_e (d, e)	34.61	5
$\Delta Hv/T_e$	18.59	5
d 300 to	68.32	5
e 515 °C	0.0681	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	0.8970	5
t_e	0.8586	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.		

			Ref.
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		2.90	5
γ 30		2.80	5
40		2.71	5
Parachor [P]			
20°C			
30			
40			
Sugd.		648.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 61

NAME	Di-n-pentadecylamine	STRUCTURAL FORMULA
		$(C_{15}H_{31})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{63}N$	Molecular Weight 437.812

		Ref.
F. P. °C	63.3	3
F. P. 100%		
B. P. °C 760 mm	457.	3
100	358.	5
30	313.	5
10	279.	5
1	221.	5
Pressure mm 25°C t_e	1871.9	5
Density g/ml 20°C	0.8260[b]	3
d_4^t 25	0.8227[b]	3
30		
a	0.8392	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4593[b]	3
25	1.4572[b]	3
30		
"C"	0.7355	4
MR (Obs.)	144.981	4
MR (Calc.) (nD-d/2)	144.490	5
Dielectric		
A | 313 to	7.43357	5
B | 544 °C	2772.6	5
C	152.	5
A* | 313 to	2.31406	5
B* | 534 °C	2680.7	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	514.29	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0764	5
t_e	0.0371	5
30 mm	1.1313	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	46.00	5
BP	36.68	5
t_e	33.18	5
t_e (d, e)	32.96	5
$\Delta Hv/T_e$	18.45	5
d | 313 to	66.36	5
e | 534 °C	0.0649	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	0.8943	5
t_e	0.8544	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension dynes/cm. 20°C		2.84	5
γ 30		2.75	5
40		2.66	5
Parachor [P] 20°C			
30			
40			
Sugd.		687.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 62

NAME	Di-n-hexadecylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{67}N$ — Molecular Weight 465.864

$(C_{16}H_{33})_2NH$

		Ref.
F.P. °C	67.03	3
F.P. 100%		
B.P. °C 760 mm	473.	3
100	372.	5
30	327.	5
10	291.	5
1	232.	5
Pressure mm 25°C t_e	1907.2	5
Density g/ml 20°C	0.8277[b]	3
d_4^t 25	0.8244[b]	3
30		
a	0.8409	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4604[b]	3
25	1.4583[b]	3
30		
"C"	0.7356	4
MR (Obs.)	154.272	4
MR (Calc.) (nD-d/2)	153.726	5
Dielectric		
A 327 to	7.43962	5
B 563 °C	2835.6	5
C	149.	5
A* 327 to	2.34304	5
B* 553 °C	2744.3	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	532.76	5

			Ref.
dt/dP °C/mm 25°C			
BP	0.0780		5
t_e	0.0373		5
30 mm	1.1546		5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm	44.26		5
BP	35.16		5
t_e	31.64		5
t_e (d, e)	31.45		5
$\Delta Hv/T_e$	18.29		5
d 327 to	64.57		5
e 553 °C	0.0622		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	0.8919		5
t_e	0.8506		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.			

			Ref.
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		2.78	5
γ 30		2.69	5
40		2.61	5
Parachor [P] 20°C			
30			
40			
Sugd.		726.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 63

NAME	Di-n-heptadecylamine	STRUCTURAL FORMULA
		$(C_{17}H_{35})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{71}N$	Molecular Weight 493.916

		Ref.
F.P. °C	71.	3
F.P. 100%		
B.P. °C 760 mm	487.	3
100	385.	5
30	338.	5
10	302.	5
1	242.	5
Pressure mm 25°C t_e	1937.7	5
Density g/ml 20°C	0.8292[b]	3
d_4^{t} 25	0.8259[b]	3
30		
a	0.8424	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4613[b]	3
25	1.4592[b]	3
30		
"C"	0.7357	4
MR (Obs.)	163.540	4
MR (Calc.) (nD-d/2)	162.962	5
Dielectric		
A | 338 to	7.44566	5
B | 579 °C	2891.8	5
C	147.	5
A* | 338 to	2.37117	5
B* | 569 °C	2801.2	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	548.92	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0793	5
t_e	0.0375	5
30 mm	1.1752	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	42.60	5
BP	33.72	5
t_e	30.19	5
t_e (d, e)	30.03	5
$\Delta Hv/T_e$	18.14	5
d | 338 to	62.74	5
e | 569 °C	0.0596	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	0.8897	5
t_e	0.8472	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm. 20°C		2.73	5
γ 30		2.65	5
40		2.56	5
Parachor [P] 20°C			
30			
40			
Sugd.		765.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 64

NAME	Di-n-octadecylamine		STRUCTURAL FORMULA
			$(C_{18}H_{37})_2NH$
Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{75}N$	Molecular Weight 521.968

		Ref.
F.P. °C	72.3	3
F.P. 100%		
B.P. °C		
760 mm	501.	3
100	397.	5
30	349.	5
10	313.	5
1	252.	5
Pressure mm 25°C		
t_e	1967.9	5
Density g/ml 20°C	0.8305[b]	3
d_4^t 25	0.8272[b]	3
30		
a	0.8437	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4621[b]	3
25	1.4600[b]	3
30		
"C"	0.7357	4
MR (Obs.)	172.816	4
MR (Calc.) (nD-d/2)	172.798	5
Dielectric		
A | 349 to	7.45150	5
B | 595 °C	2948.1	5
C	144.	5
A* | 349 to	2.39786	5
B* | 585 °C	2858.2	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	565.10	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0806	5
t_e	0.0376	5
30 mm	1.1957	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	41.12	5
BP	32.44	5
t_e	28.89	5
t_e (d, e)	28.76	5
$\Delta Hv/T_e$	17.99	5
d | 349 to	61.13	5
e | 585 °C	0.0573	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	0.8875	5
t_e	0.8438	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.		

		Ref.
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	2.69	5
γ 30	2.60	5
40	2.52	5
Parachor [P] 20°C		
30		
40		
Sugd.	804.8	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		

[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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 65

NAME	Di-n-nonadecylamine	STRUCTURAL FORMULA
		$(C_{19}H_{39})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{79}N$	Molecular Weight 550.020

		Ref.
F.P. °C	78.	3
F.P. 100%		
B.P. °C		
760 mm	514.	3
100	408.	5
30	360.	5
10	323.	5
1	261.	5
Pressure mm 25°C t_e	1995.9	5
Density g/ml 20°C	0.8317[b]	3
d_4^{t} 25 30	0.8284[b]	3
a	0.8449	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4629[b]	3
25	1.4608[b]	3
30		
"C"	0.7358	4
MR (Obs.)	182.112	4
MR (Calc.) (nD-d/2)	181.434	5
Dielectric		
A 360 to	7.45182	5
B 610 °C	2994.0	5
C	141.	5
A* 360 to	2.41823	5
B* 600 °C	2905.1	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	580.15	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0819	5
t_e	0.0378	5
30 mm	1.2142	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	39.75	5
BP	31.24	5
t_e	27.67	5
t_e (d, e)	27.58	5
$\Delta Hv/T_e$	17.84	5
d 360 to	59.67	5
e 600 °C	0.0553	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	0.8856	5
t_e	0.8407	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension			
dynes/cm. 20°C		2.65	5
γ 30		2.57	5
40		2.49	5
Parachor [P]			
20°C			
30			
40			
Sugd.		843.8	5
Exp. L. 1, %/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

No. 66

NAME	Di-n-eicosylamine	STRUCTURAL FORMULA
		$(C_{20}H_{41})_2NH$

Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{83}N$	Molecular Weight 578.072

		Ref.
F.P. °C	80.	3
F.P. 100%		
B.P. °C		
760 mm	526.	3
100	419.	5
30	370.	5
10	332.	5
1	269.	5
Pressure mm 25°C t_e	2021.9	5
Density g/ml 20°C	0.8327[b]	3
d_4^t 25	0.8294[b]	3
30		
a	0.8459	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4635[b]	3
25	1.4615[b]	3
30		
"C"	0.7358	4
MR (Obs.)	191.383	4
MR (Calc.)	190.670	5
(nD-d/2)		
Dielectric		
A | 370 to	7.45762	5
B | 624 °C	3043.6	5
C	139.	5
A* | 370 to	2.44274	5
B* | 614 °C	2955.2	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	594.06	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0830	5
t_e	0.0379	5
30 mm	1.2319	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.44	5
BP	30.12	5
t_e	26.55	5
t_e (d, e)	26.50	5
$\Delta Hv/T_e$	17.70	5
d | 370 to	58.14	5
e | 614 °C	0.0533	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	0.8839	5
t_e	0.8380	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.		

		Ref.
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	2.62	5
γ 30	2.53	5
40	2.45	5
Parachor [P] 20°C		
30		
40		
Sugd.	882.8	5
Exp. L.1.%/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

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In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 67

NAME	Dimethyl-n-octylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{23}N$	Molecular Weight 157.292	$(CH_3)_2N\text{-}CH_2(CH_2)_6CH_3$

		Ref.
F.P. °C	-75.	3
F.P. 100%		
B.P. °C		
760 mm	194.	3
100	128.	5
30	98.	5
10	76.	5
1	38.	5
Pressure		
mm 25°C	0.40	5
t_e	1245.1	5
Density		
g/ml 20°C	0.7661	3
d_4^{t} 25	0.7623	3
30		
a	0.7813	5
b	-0.0_3760	5
Ref. Index		
n_D 20°C	1.4247	3
25	1.4224	3
30		
"C"	0.7367	4
MR (Obs.)	52.466	4
MR (Calc.) (nD-d/2)	52.480	5
Dielectric		
A | 98 to	7.29022	5
B | 244 °C	1746.1	5
C	202.	5
A* | 98 to	1.83165	5
B* | 234 °C	1658.9	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	214.24	5

		Ref.
dt/dP		
°C/mm		
25°C	32.34	5
BP	0.0513	5
t_e	0.0346	5
30 mm	0.7480	5
ΔHm cal/g		
ΔHv cal/g		
25°C	87.97	5
30 mm	77.69	5
BP	65.61	5
t_e	63.22	5
t_e (d, e)	63.05	5
ΔHv/T_e	20.40	5
d | 98 to	90.11	5
e | 234 °C	0.1263	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0039	5
30 mm	1.0000	5
BP	0.9347	5
t_e	0.9182	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h		
f' | to		
g' | °C		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	11.22	5
σ 30	10.78	5
40	10.36	5
Parachor [P]		
20°C		
30		
40		
Sugd.	375.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 68

NAME	Dimethyl-n-decylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_8CH_3$

Mole % Pur.	Ref.	Molecular Formula	Molecular Weight
	3	$C_{12}H_{27}N$	185.344

		Ref.
F.P. °C	-44.	3
F.P. 100%		
B.P. °C 760 mm	235.	3
100	164.	5
30	132.	5
10	107.	5
1	66.	5
Pressure mm 25°C	0.04	5
t_e	1348.4	5
Density g/ml 20°C	0.7785	3
d_4^t 25	0.7750	3
30		
a	0.7925	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4320	3
25	1.4297	3
30		
"C"	0.7367	4
MR (Obs.)	61.751	4
MR (Calc.) (nD-d/2)	61.716	5
Dielectric		
A 132 to	7.32434	5
B 291 °C	1908.5	5
C	195.	5
A* 132 to	1.91417	5
B* 281 °C	1818.5	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	260.50	5

		Ref.
dt/dP °C/mm		
25°C	257.3	5
BP	0.0552	5
t_e	0.0349	5
30 mm	0.8081	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.69	5
30 mm	72.54	5
BP	60.76	5
t_e	58.06	5
t_e (d, e)	57.84	5
$\Delta Hv/T_e$	20.16	5
d 132 to	87.61	5
e 281 °C	0.1143	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9972	5
30 mm	1.0000	5
BP	0.9283	5
t_e	0.9082	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.		

		Ref.
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	13.20	5
γ 30	12.73	5
40	12.28	5
Parachor [P] 20°C		
30		
40		
Sugd.	453.8	5
Exp. L.1.%/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. 69

NAME	Dimethyl-n-dodecylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{14}H_{31}N$	Molecular Weight 213.396	$(CH_3)_2NCH_2(CH_2)_{10}CH_3$

		Ref.
F. P. °C	-20.30	3
F. P. 100%		
B. P. °C 760 mm	271.	3
100	196.	5
30	162.	5
10	135.	5
1	92.	5
Pressure mm 25°C t_e	1436.8	5
Density g/ml 20°C	0.7882	3
d_4^{t} 25	0.7846	3
30		
a	0.8026	5
b	-0.03720	5
Ref. Index n_D 20°C	1.4377	3
25	1.4354	3
30		
"C"	0.7366	4
MR (Obs.)	71.029	4
MR (Calc.) (nD-d/2)	70.952	5
Dielectric		
A | 162 to	7.31086	5
B | 331 °C	2015.7	5
C	184.	5
A* | 162 to	1.94719	5
B* | 321 °C	1925.9	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	301.30	5

		Ref.
dt/dP		
°C/mm		
25°C	2028.	5
BP	0.0587	5
t_e	0.0353	5
30 mm	0.8574	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.76	5
30 mm	68.38	5
BP	56.53	5
t_e	53.54	5
t_e (d, e)	53.26	5
ΔHv/T_e	19.89	5
d | 162 to	85.85	5
e | 321 °C	0.1082	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9863	5
30 mm	1.0000	5
BP	0.9225	5
t_e	0.8990	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm. 20°C		14.89	5
σ 30		14.35	5
40		13.83	5
Parachor [P] 20°C			
30			
40			
Sugd.		531.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 70

NAME	Dimethyl-n-tetradecylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{12}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{35}N$	Molecular Weight 241.448

		Ref.
F.P. °C	-3.	3
F.P. 100%		
B.P. °C 760 mm	302.	3
100	223.	5
30	187.	5
10	159.	5
1	113.	5
Pressure mm 25°C t_e	1513.0	5
Density g/ml 20°C	0.7956	3
d^t_4 25	0.7921	3
30		
a	0.8096	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4420	3
25	1.4399	3
30		
"C"	0.7365	4
MR (Obs.)	80.298	4
MR (Calc.) (nD-d/2)	80.188	5
Dielectric		
A | 187 to	7.36840	5
B | 367 °C	2172.0	5
C	182.	5
A* | 187 to	2.04164	5
B* | 357 °C	2079.1	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	336.55	5

			Ref.
dt/dP °C/mm 25°C			
BP		0.0616	5
t_e		0.0355	5
30 mm		0.9059	5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm		64.01	5
BP		52.86	5
t_e		49.78	5
t_e (d, e)		49.52	5
$\Delta Hv/T_e$		19.72	5
d | 187 to		82.05	5
e | 357 °C		0.0967	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		0.9181	5
t_e		0.8919	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.			

			Ref.
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		16.30	5
γ 30		15.74	5
40		15.18	5
Parachor [P] 20°C			
30			
40			
Sugd.		609.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 71

NAME	Dimethyl-n-hexadecylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{14}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{39}N$	Molecular Weight 269.500

		Ref.
F.P. °C	12.	3
F.P. 100%		
B.P. °C		
760 mm	330.	3
100	247.	5
30	210.	5
10	181.	5
1	132.	5
Pressure mm 25°C t_e	1579.8	5
Density g/ml 20°C	0.8014	3
d_4^{t} 25 30	0.7980	3
a	0.8150	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4455	3
25	1.4433	3
30		
"C"	0.7366	4
MR (Obs.)	89.590	4
MR (Calc.) (nD-d/2)	89.424	5
Dielectric		
A | 210 to	7.37703	5
B | 398 °C	2275.1	5
C	176.	5
A* | 210 to	2.08744	5
B* | 388 °C	2182.0	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	368.48	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0643	5
t_e	0.0358	5
30 mm	0.9462	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	60.52	5
BP	49.63	5
t_e	46.44	5
t_e (d, e)	46.15	5
$\Delta Hv/T_e$	19.50	5
d | 210 to	79.47	5
e | 388 °C	0.0904	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	0.9136	5
t_e	0.8849	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	17.50	5
γ 30	16.91	5
40	16.34	5
Parachor [P] 20°C		
30		
40		
Sugd.	687.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 72

NAME	Dimethyl-n-octadecylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{16}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{43}N$	Molecular Weight 297.552

		Ref.
F.P. °C	22.89	3
F.P. 100%		
B.P. °C 760 mm	356.	3
100	270.	5
30	231.	5
10	201.	5
1	151.	5
Pressure mm 25°C t_e	1641.3	5
Density g/ml 20°C	0.8062	3
d_4^t 25	0.8028	3
30		
a	0.8198	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4483	3
25	1.4461	3
30		
"C"	0.7366	4
MR (Obs.)	98.861	4
MR (Calc.)	98.660	5
(nD-d/2)		
Dielectric		
A | 231 to	7.38951	5
B | 428 °C	2376.1	5
C	171.	5
A* | 231 to	2.13321	5
B* | 418 °C	2282.7	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	398.22	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0668	5
t_e	0.0361	5
30 mm	0.9840	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	57.45	5
BP	46.85	5
t_e	43.56	5
t_e (d, e)	43.27	5
$\Delta Hv/T_e$	19.31	5
d | 231 to	77.01	5
e | 418 °C	0.0847	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	0.9097	5
t_e	0.8787	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.		

			Ref.
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		18.53	5
γ 30		17.92	5
40		17.32	5
Parachor [P] 20°C			
30			
40			
Sugd.		765.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 73

NAME	Dimethyl-n-nonadecylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{17}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{21}H_{45}N$	Molecular Weight 311.578

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	368.	3
100	280.	5
30	241.	5
10	210.	5
1	159.	5
Pressure mm 25°C		
t_e	1669.8	5
Density g/ml 20°C	0.8083[b]	3
d_4^t 25	0.8050[b]	3
30		
a	0.8215	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4496[b]	3
25	1.4474[b]	3
30		
"C"	0.7367	4
MR (Obs.)	103.512	4
MR (Calc.) (nD-d/2)	103.278	5
Dielectric		
A 241 to	7.39765	5
B 442 °C	2425.5	5
C	169.	5
A* 241 to	2.15675	5
B* 432 °C	2331.8	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	411.97	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0679	5
t_e	0.0362	5
30 mm	1.0017	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	56.01	5
BP	45.58	5
t_e	42.27	5
t_e (d, e)	41.98	5
$\Delta Hv/T_e$	19.22	5
d 241 to	75.72	5
e 432 °C	0.0819	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	0.9080	5
t_e	0.8760	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension			
dynes/cm. 20°C		27.51	5
σ 30		26.62	5
40		25.76	5
Parachor [P] 20°C			
30			
40			
Sugd.		882.8	5
Exp. L.1.%/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 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

No. 74

NAME	Dimethyl-n-eicosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{18}CH_3$
Mole % Pur.	Ref. 3	Molecular Formula $C_{22}H_{47}N$ — Molecular Weight 325.604

		Ref.
F.P. °C	33.	3
F.P. 100%		
B.P. °C 760 mm	379.	3
100	290.	5
30	250.	5
10	219.	5
1	167.	5
Pressure mm 25°C t_e	1695.3	5
Density g/ml 20°C	0.8102[a]	3
d_4^t 25	0.8069[a]	3
30		
a	0.8234	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4507[a]	3
25	1.4486[a]	3
30		
"C"	0.7366	4
MR (Obs.)	108.146	4
MR (Calc.) (nD-d/2)	107.896	5
Dielectric		
A | 250 to	7.40344	5
B | 455 °C	2469.4	5
C	167.	5
A* | 250 to	2.17798	5
B* | 445 °C	2375.7	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	424.57	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0690	5
t_e	0.0363	5
30 mm	1.0178	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	54.61	5
BP	44.34	5
t_e	41.00	5
t_e (d, e)	40.72	5
$\Delta Hv/T_e$	19.13	5
d | 250 to	74.45	5
e | 445 °C	0.0794	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	0.9063	5
t_e	0.8733	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.		

		Ref.
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	27.68	5
γ 30	26.79	5
40	25.92	5
Parachor [P] 20°C		
30		
40		
Sugd.	921.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 75

NAME	Dimethyl-n-heneicosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{19}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{23}H_{49}N$	Molecular Weight 339.630

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	390.	3
100	300.	5
30	259.	5
10	227.	5
1	174.	5
Pressure mm 25°C		
t_e	1720.6	5
Density g/ml 20°C	0.8120[a]	3
d_4^t 25	0.8087[a]	3
30		
a	0.8252	5
b	-0.0_3660	5
Ref. Index		
n_D 20°C	1.4517[a]	3
25	1.4496[a]	3
30		
"C"	0.7365	4
MR (Obs.)	112.771	4
MR (Calc.) (nD-d/2)	112.514	5
Dielectric		
A | 259 to	7.40906	5
B | 467 °C	2513.2	5
C	165.	5
A* | 259 to	2.19835	5
B* | 457 °C	2419.5	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	437.19	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0700	5
t_e	0.0364	5
30 mm	1.0339	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	53.33	5
BP	43.19	5
t_e	39.83	5
t_e (d, e)	39.55	5
$\Delta Hv/T_e$	19.04	5
d | 259 to	73.29	5
e | 457 °C	0.0772	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	0.9046	5
t_e	0.8706	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	27.84	5
σ 30	26.95	5
40	26.08	5
Parachor [P] 20°C		
30		
40		
Sugd.	960.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 76

NAME	Dimethyl-n-docosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{20}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{24}H_{51}N$	Molecular Weight 353.656

		Ref.
F.P. °C	44.	3
F.P. 100%		
B.P. °C 760 mm	400.	3
100	308.	5
30	267.	5
10	235.	5
1	181.	5
Pressure mm 25°C t_e	1743.7	5
Density g/ml 20°C	0.8136[a]	3
d_4^t 25 30	0.8103[a]	3
a	0.8268	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4527[a]	3
25	1.4506[a]	3
30		
"C"	0.7366	4
MR (Obs.)	117.422	4
MR (Calc.) (nD-d/2)	117.132	5
Dielectric		
A | 267 to	7.41250	5
B | 479 °C	2551.3	5
C	163.	5
A* | 267 to	2.21615	5
B* | 469 °C	2457.8	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	448.68	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0710	5
t_e	0.0365	5
30 mm	1.0484	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	52.07	5
BP	42.08	5
t_e	38.69	5
t_e (d, e)	38.42	5
$\Delta Hv/T_e$	18.96	5
d | 267 to	72.10	5
e | 469 °C	0.0751	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	0.9031	5
t_e	0.8683	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.		

		Ref.
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	27.99	5
γ 30	27.09	5
40	26.22	5
Parachor [P] 20°C		
30		
40		
Sugd.	999.8	5
Exp. L.1.%/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VI. AMINOALKANES

No. 77

NAME	Dimethyl-n-tricosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{21}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{25}H_{53}N$	Molecular Weight 367.682

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	410.	3
100	317.	5
30	275.	5
10	243.	5
1	188.	5
Pressure mm 25°C		
t_e	1766.1	5
Density g/ml 20°C	0.8151[a]	3
d_4^t 25 30	0.8118[a]	3
a	0.8283	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4536[a]	3
25	1.4515[a]	3
30		
"C"	0.7366	4
MR (Obs.)	122.063	4
MR (Calc.) (nD-d/2)	121.750	5
Dielectric		
A, B, C (275 to 490 °C)	7.41585; 2589.5; 161.	5; 5; 5
A*, B*, K (275 to 480 °C)	2.23378; 2496.3	5; 5
c		
t_k, t_x to °C		
A', B', C' to °C		
A'* B'* to °C		
Ac, Bc, Cc t_c °C		
Cryos. A° consts. B°		
t_e °C	460.16	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0719	5
t_e	0.0366	5
30 mm	1.0629	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	50.91	5
BP	41.03	5
t_e	37.62	5
t_e (d, e)	37.36	5
ΔHv/T_e	18.86	5
d, e (275 to 480 °C)	71.04; 0.0732	5; 5
d', e' to °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	0.9014	5
t_e	0.8656	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v, A^v to °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f, g, h	to °C		
f', g', h'	to °C		
m, n, o	to °K		
m', n', o'	to °K		
Surface tension dynes/cm.	20°C	28.12	5
γ	30	27.22	5
	40	26.35	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	1038.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 78

NAME	Dimethyl-n-tetracosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{22}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{26}H_{55}N$	Molecular Weight 381.708

		Ref.
F.P. °C	49.	3
F.P. 100%		
B.P. °C 760 mm	420.	3
100	326.	5
30	283.	5
10	250.	5
1	195.	5
Pressure mm 25°C t_e	1788.9	5
Density g/ml 20°C	0.8165[a]	3
d_4^{t} 25	0.8131[a]	3
30		
a	0.8301	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4545[a]	3
25	1.4523[a]	3
30		
"C"	0.7367	4
MR (Obs.)	126.719	4
MR (Calc.) (nD-d/2)	126.368	5
Dielectric		
A | 283 to	7.41911	5
B | 502 °C	2627.7	5
C	159.	5
A* | 283 to	2.25027	5
B* | 492 °C	2534.7	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	471.66	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0729	5
t_e	0.0367	5
30 mm	1.0774	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	49.83	5
BP	40.06	5
t_e	36.62	5
t_e (d, e)	36.37	5
$\Delta Hv/T_e$	18.77	5
d | 283 to	70.07	5
e | 492 °C	0.0714	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	0.8999	5
t_e	0.8633	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.		

		Ref.
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	28.25	5
γ 30	27.32	5
40	26.42	5
Parachor [P] 20°C		
30		
40		
Sugd.	1077.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 79

NAME	Dimethyl-n-pentacosylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{27}H_{57}N$	Molecular Weight 395.734	$(CH_3)_2NCH_2(CH_2)_{23}CH_3$

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	429.	3
100	334.	5
30	291.	5
10	257.	5
1	201.	5
Pressure mm 25°C t_e	1809.1	5
Density g/ml 20°C	0.8179[a]	3
d_4^t 25	0.8145[a]	3
30		
a	0.8315	5
b	-0.03680	5
Ref. Index n_D 20°C	1.4553[a]	3
25	1.4531[a]	3
30		
"C"	0.7367	4
MR (Obs.)	131.350	4
MR (Calc.) (nD-d/2)	130.986	5
Dielectric		
A | 291 to	7.42438	5
B | 512 °C	2664.8	5
C	158.	5
A* | 291 to	2.26873	5
B* | 502 °C	2572.0	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	482.01	5

			Ref.
dt/dP °C/mm 25°C			
BP	0.0738		5
t_e	0.0368		5
30 mm	1.0907		5
ΔHm cal/g			
ΔHv cal/g 25°C			
30 mm	48.74		5
BP	39.11		5
t_e	35.65		5
t_e (d, e)	35.42		5
$\Delta Hv/T_e$	18.68		5
d | 291 to	68.97		5
e | 502 °C	0.0696		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	0.8985		5
t_e	0.8610		5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes η °C			
B^v | to			
A^v | °C			
(B^v) |			
(A^v) |			
c_p liq. °C			
c_p vap. °K			
c_v vap.			

			Ref.
f | to			
g | °C			
h			
f' | to			
g' | °C			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm. 20°C		28.39	5
γ 30		27.45	5
40		26.54	5
Parachor [P] 20°C			
30			
40			
Sugd.		1116.8	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

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In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 80

NAME	Dimethyl-n-hexacosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{24}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{28}H_{59}N$	Molecular Weight 409.760

		Ref.
F.P. °C	55.	3
F.P. 100%		
B.P. °C 760 mm	438.	3
100	342.	5
30	298.	5
10	264.	5
1	208.	5
Pressure mm 25°C t_e	1829.7	5
Density g/ml 20°C	0.8190[a]	3
d_4^t 25	0.8157[a]	3
30		
a	0.8322	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4560[a]	3
25	1.4537[a]	3
30		
"C"	0.7368	4
MR (Obs.)	136.003	4
MR (Calc.) (nD-d/2)	135.604	5
Dielectric		
A | 298 to	7.42954	5
B | 522 °C	2701.9	5
C	156.	5
A* | 298 to	2.28608	5
B* | 512 °C	2609.2	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	492.39	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0746	5
t_e	0.0369	5
30 mm	1.1040	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	47.73	5
BP	38.24	5
t_e	34.78	5
t_e (d, e)	34.55	5
$\Delta Hv/T_e$	18.62	5
d | 298 to	67.92	5
e | 512 °C	0.0678	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	0.8973	5
t_e	0.8591	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.		

		Ref.
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	28.48	5
γ 30	27.57	5
40	26.69	5
Parachor [P] 20°C		
30		
40		
Sugd.	1155.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 81

NAME	Dimethyl-n-heptacosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{25}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{29}H_{61}N$	Molecular Weight 423.786

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	446.	3
100	349.	5
30	304.	5
10	270.	5
1	213.	5
Pressure mm 25°C		
t_e	1847.5	5
Density g/ml 20°C	0.8202[a]	3
d_4^{t} 25	0.8168[a]	3
30		
a	0.8338	5
b	-0.0_3680	5
Ref. Index n_D 20°C	1.4567[a]	3
25	1.4544[a]	3
30		
"C"	0.7368	4
MR (Obs.)	140.639	4
MR (Calc.) (nD-d/2)	140.222	5
Dielectric		
A | 304 to	7.42877	5
B | 532 °C	2728.8	5
C	154.	5
A* | 304 to	2.29800	5
B* | 522 °C	2636.5	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	501.61	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0754	5
t_e	0.0370	5
30 mm	1.1152	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	46.74	5
BP	37.35	5
t_e	33.86	5
t_e (d, e)	33.65	5
$\Delta Hv/T_e$	18.52	5
d | 304 to	66.96	5
e | 522 °C	0.0664	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	0.8960	5
t_e	0.8571	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		28.59	5
σ 30		27.66	5
40		26.74	5
Parachor [P] 20°C			
30			
40			
Sugd.		1194.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 82

NAME	Dimethyl-n-octacosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{26}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{63}N$	Molecular Weight 437.812

		Ref.
F.P. °C	60.	3
F.P. 100%		
B.P. °C		
760 mm	454.	3
100	356.	5
30	311.	5
10	277.	5
1	219.	5
Pressure mm 25°C		
t_e	1865.4	5
Density g/ml 20°C	0.8212[a]	3
d_4^t 25	0.8179[a]	3
30		
a	0.8344	5
b	-0.0_3660	5
Ref. Index		
n_D 20°C	1.4573[a]	3
25	1.4551[a]	3
30		
"C"	0.7368	4
MR (Obs.)	145.281	4
MR (Calc.) (nD-d/2)	144.840	5
Dielectric		
A 311 to	7.43582	5
B 541 °C	2764.9	5
C	153.	5
A* 311 to	2.31683	5
B* 531 °C	2672.6	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	510.83	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0761	5
t_e	0.0371	5
30 mm	1.1273	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	45.77	5
BP	36.53	5
t_e	33.06	5
t_e (d, e)	32.86	5
$\Delta Hv/T_e$	18.46	5
d 311 to	65.88	5
e 531 °C	0.0646	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	0.8948	5
t_e	0.8552	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.		

		Ref.
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	28.68	5
γ 30	27.77	5
40	26.88	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1233.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 83

NAME	Dimethyl-n-nonacosylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{27}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{31}H_{65}N$	Molecular Weight 451.838

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	462.	3
100	363.	5
30	318.	5
10	283.	5
1	224.	5
Pressure mm 25°C		
t_e	1883.1	5
Density g/ml 20°C	0.8222[a]	3
d_4^t 25 30	0.8189[a]	3
a	0.8354	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4579[a]	3
25	1.4557[a]	3
30		
"C"	0.7368	4
MR (Obs.)	149.922	4
MR (Calc.) (nD-d/2)	149.458	5
Dielectric		
A | 318 to	7.43500	5
B | 550 °C	2791.7	5
C	151.	5
A* | 318 to	2.32787	5
B* | 540 °C	2700.0	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	520.06	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0769	5
t_e	0.0372	5
30 mm	1.1385	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	44.91	5
BP	35.75	5
t_e	32.26	5
t_e (d, e)	32.07	5
$\Delta Hv/T_e$	18.38	5
d | 318 to	65.04	5
e | 540 °C	0.0634	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	0.8936	5
t_e	0.8533	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm. 20°C		28.78	5
γ 30		27.86	5
40		26.97	5
Parachor [P] 20°C			
30			
40			
Sugd.		1272.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 84

NAME	Dimethyl-n-triacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{28}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{32}H_{67}N$	Molecular Weight 465.864

		Ref.
F.P. °C	65.	3
F.P. 100%		
B.P. °C		
760 mm	470.	3
100	370.	5
30	324.	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
30		
a	0.8359	5
b	-0.0_3640	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.) (nD-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_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	529.29	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0777	5
t_e	0.0373	5
30 mm	1.1506	5
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
$\Delta Hv/T_e$	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.		

			Ref.
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	28.86	5
γ	30	27.97	5
	40	27.10	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	1311.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 85

NAME	Dimethyl-n-hentriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{29}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{33}H_{69}N$	Molecular Weight 479.890

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	477.	3
100	376.	5
30	330.	5
10	294.	5
1	235.	5
Pressure mm 25°C t_e	1915.6	5
Density g/ml 20°C	0.8240[a]	3
d_4^t 25	0.8207[a]	3
30		
a	0.8372	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4589[a]	3
25	1.4568[a]	3
30		
"C"	0.7367	4
MR (Obs.)	159.182	4
MR (Calc.) (nD-d/2)	158.694	5
Dielectric		
A | 330 to	7.43920	5
B | 567 °C	2849.0	5
C	148.	5
A* | 330 to	2.35489	5
B* | 557 °C	2758.1	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	537.37	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0783	5
t_e	0.0374	5
30 mm	1.1603	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	43.23	5
BP	34.28	5
t_e	30.77	5
t_e (d, e)	30.61	5
$\Delta Hv/T_e$	18.22	5
d | 330 to	63.30	5
e | 557 °C	0.0608	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	0.8912	5
t_e	0.8495	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C	28.94	5
σ 30	28.02	5
40	27.13	5
Parachor [P] 20°C		
30		
40		
Sugd.	1350.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 86

NAME	Dimethyl-n-dotriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{30}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{34}H_{71}N$	Molecular Weight 493.916

		Ref.
F.P. °C	69.	3
F.P. 100%		
B.P. °C		
760 mm	485.	3
100	383.	5
30	336.	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^t 25	0.8216[a]	3
30		
a	0.8381	5
b	-0.0_3660	5
Ref. Index		
n_D 20°C	1.4594[a]	3
25	1.4573[a]	3
30		
"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		
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	546.60	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0791	5
t_e	0.0375	5
30 mm	1.1723	5
ΔHm cal/g		
ΔHv 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
$\Delta Hv/T_e$	18.14	5
d | 336 to	62.48	5
e | 567 °C	0.0595	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	0.8900	5
t_e	0.8476	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.		

		Ref.
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	29.03	5
γ 30	28.11	5
40	27.21	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1389.8	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 87

NAME	Dimethyl-n-tritriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{31}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{35}H_{73}N$	Molecular Weight 507.942

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	492.	3
100	389.	5
30	342.	5
10	306.	5
1	245.	5
Pressure mm 25°C		
t_e	1948.7	5
Density g/ml 20°C	0.8257[a]	3
d_4^t 25	0.8224[a]	3
30		
a	0.8389	5
b	-0.0_3660	5
Ref. Index		
n_D 20°C	1.4599[a]	3
25	1.4578[a]	3
30		
"C"	0.7367	4
MR (Obs.)	168.456	4
MR (Calc.) (nD-d/2)	167.930	5
Dielectric		
A | 342 to	7.45069	5
B | 585 °C	2915.6	5
C	146.	5
A* | 342 to	2.38695	5
B* | 575 °C	2825.0	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	554.70	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0798	5
t_e	0.0375	5
30 mm	1.1828	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	41.70	5
BP	32.98	5
t_e	29.46	5
t_e (d, e)	29.33	5
ΔHv/T_e	18.07	5
d | 342 to	61.62	5
e | 575 °C	0.0582	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	0.8890	5
t_e	0.8461	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		29.10	5
30		28.18	5
40		27.28	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1428.8	5
Exp. L.1.%/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

No. 88

NAME	Dimethyl-n-tetratriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{32}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{75}N$	Molecular Weight 521.968

		Ref.
F.P. °C	73.	3
F.P. 100%		
B.P. °C		
760 mm	498.	3
100	394.	5
30	347.	5
10	311.	5
1	250.	5
Pressure mm 25°C t_e	1961.4	5
Density g/ml 20°C	0.8264[a]	3
d_4^t 25	0.8231[a]	3
30		
a	0.8396	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4603[a]	3
25	1.4582[a]	3
30		
"C"	0.7366	4
MR (Obs.)	173.090	4
MR (Calc.) (nD-d/2)	172.548	5
Dielectric		
A |347 to	7.44630	5
B |592 °C	2931.0	5
C	144.	5
A* |347 to	2.39352	5
B* |582 °C	2841.2	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	561.64	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0804	5
t_e	0.0376	5
30 mm	1.1908	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.96	5
BP	32.31	5
t_e	28.78	5
t_e (d, e)	28.66	5
$\Delta Hv/T_e$	18.00	5
d |347 to	60.85	5
e |582 °C	0.0573	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	0.8445	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.		

		Ref.
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	29.16	5
γ 30	28.24	5
40	27.35	5
Parachor [P] 20°C		
30		
40		
Sugd.	1467.8	5
Exp. L. 1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 89

NAME	Dimethyl-n-pentatriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{33}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{37}H_{77}N$	Molecular Weight 535.994

		Ref.
F. P. °C		
F. P. 100%		
B. P. °C		
760 mm	505.	3
100	400.	5
30	353.	5
10	316.	5
1	254.	5
Pressure mm 25°C		
t_e	1976.9	5
Density g/ml 20°C	0.8272[a]	3
d_4^t 25	0.8239[a]	3
30		
a	0.8404	5
b	-0.0_3660	5
Ref. Index		
n_D 20°C	1.4608[a]	3
25	1.4587[a]	3
30		
"C"	0.7367	4
MR (Obs.)	177.736	4
MR (Calc.) (nD-d/2)	177.166	5
Dielectric		
A | 353 to	7.45103	5
B | 600 °C	2961.5	5
C	143.	5
A* | 353 to	2.40787	5
B* | 590 °C	2871.8	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	569.75	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0810	5
t_e	0.0377	5
30 mm	1.2013	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	40.27	5
BP	31.72	5
t_e	28.19	5
t_e (d, e)	28.09	5
$\Delta Hv/T_e$	17.92	5
d | 353 to	60.08	5
e | 590 °C	0.0561	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	0.8870	5
t_e	0.8430	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq: °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h		
f' | to		
g' | °C		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	29.24	5
γ 30	28.32	5
40	27.42	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1506.8	5
Exp. L.1.%/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

No. 90

NAME	Dimethyl-n-hexatriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{34}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{38}H_{79}N$	Molecular Weight 550.020

		Ref.
F.P. °C	76.	3
F.P. 100%		
B.P. °C		
760 mm	511.	3
100	406.	5
30	358.	5
10	321.	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
30		
a	0.8410	5
b	-0.0_3660	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.)	181.784	5
(nD-d/2)		
Dielectric		
A | 358 to	7.45399	5
B | 607 °C	2986.3	5
C	142.	5
A* | 358 to	2.42080	5
B* | 597 °C	2897.0	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	576.68	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.0816	5
t_e	0.0378	5
30 mm	1.2102	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	39.57	5
BP	31.12	5
t_e	27.59	5
t_e (d, e)	27.51	5
$\Delta Hv/T_e$	17.85	5
d | 358 to	59.27	5
e | 597 °C	0.0551	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	0.8861	5
t_e	0.8415	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.		

			Ref.
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		29.30	5
γ 30		28.37	5
40		27.47	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1545.8	5
Exp. L. 1. %/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

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TABLE VI. AMINOALKANES

No. 91

NAME	Dimethyl-n-heptatriacontylamine	STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{39}H_{81}N$ — Molecular Weight 564.046

$(CH_3)_2NCH_2(CH_2)_{35}CH_3$

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	518.	3
100	412.	5
30	363.	5
10	326.	5
1	263.	5
Pressure mm 25°C t_e	2004.9	5
Density g/ml 20°C	0.8285[a]	3
d_4^{t} 25	0.8252[a]	3
30		
a	0.8417	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4616[a]	3
25	1.4595[a]	3
30		
"C"	0.7367	4
MR (Obs.)	187.023	4
MR (Calc.) (nD-d/2)	186.402	5
Dielectric		
A | 363 to	7.45859	5
B | 615 °C	3016.8	5
C	141.	5
A* | 363 to	2.43452	5
B* | 605 °C	2927.7	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	584.79	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0823	5
t_e	0.0378	5
30 mm	1.2206	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.95	5
BP	30.59	5
t_e	27.04	5
t_e (d, e)	26.99	5
$\Delta Hv/T_e$	17.78	5
d | 363 to	58.58	5
e | 605 °C	0.0540	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	0.8851	5
t_e	0.8399	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension dynes/cm.	20°C	29.36	5
σ	30	28.44	5
	40	27.54	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	1584.8	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 92

NAME	Dimethyl-n-octatriacontylamine	STRUCTURAL FORMULA
		$(CH_3)_2NCH_2(CH_2)_{36}CH_3$

Mole % Pur.	Ref. 3	Molecular Formula $C_{40}H_{83}N$	Molecular Weight 578.072

		Ref.
F.P. °C	79.	3
F.P. 100%		
B.P. °C 760 mm	524.	3
100	417.	5
30	368.	5
10	331.	5
1	268.	5
Pressure mm 25°C t_e	2017.5	5
Density g/ml 20°C	0.8290[a]	3
d_4^t 25	0.8258[a]	3
30		
a	0.8418	5
b	-0.0_3640	5
Ref. Index n_D 20°C	1.4620[a]	3
25	1.4598[a]	3
30		
"C"	0.7369	4
MR (Obs.)	191.701	4
MR (Calc.) (nD-d/2)	191.020	5
Dielectric		
A | 368 to	7.45786	5
B | 622 °C	3036.9	5
C	140.	5
A* | 368 to	2.44347	5
B* | 612 °C	2948.4	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	591.74	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0828	5
t_e	0.0379	5
30 mm	1.2291	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.33	5
BP	30.06	5
t_e	26.53	5
t_e (d, e)	26.46	5
$\Delta Hv/T_e$	17.73	5
d | 368 to	57.89	5
e | 612 °C	0.0531	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	0.8841	5
t_e	0.8384	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.		

		Ref.
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	29.40	5
γ 30	28.51	5
40	27.63	5
Parachor [P] 20°C		
30		
40		
Sugd.	1623.8	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

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TABLE VI. AMINOALKANES

No. 93

NAME	Trimethylamine	STRUCTURAL FORMULA
		$(CH_3)_3N$

Mole % Pur.	Ref. 3	Molecular Formula C_5H_9N	Molecular Weight 59.110

		Ref.
F.P. °C	-117.3	3
F.P. 100%		
B.P. °C		
760 mm	2.87	3
100	-39.11	5
30	-57.66	5
10	-71.75	5
1	-95.03	5
Pressure		
mm 25°C	1699.2	5
t_e	737.5	5
Density		
g/ml 20°C	0.6331[a]	3
d_4^t 25	0.6270[a]	3
30		
a	0.6590	5
b	-0.00105	5
Ref. Index		
n_D 20°C	1.3476[a]	3
25	1.3443[a]	3
30		
"C"	0.7375	4
MR (Obs.)	19.966	4
MR (Calc.) (nD-d/2)	20.154	5
Dielectric		
A | -58 to	6.97038	5
B | 32 °C	968.7	5
C	234.	5
A* | -58 to	1.25840	5
B* | 22 °C	906.0	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	2.12	5

		Ref.
dt/dP		
°C/mm		
25°C	0.0177	5
BP	0.0331	5
t_e	0.0339	5
30 mm	0.4647	5
ΔHm cal/g		
ΔHv cal/g		
25°C	92.39	5
30 mm	111.96	5
BP	97.57	5
t_e	97.75	5
t_e (d, e)	97.75	5
$\Delta Hv/T_e$	20.99	5
d | -58 to	98.25	5
e | 22 °C	0.2377	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9384	5
30 mm	1.0000	5
BP	0.9622	5
t_e	0.9630	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		13.63	5
σ 30		12.45	5
40		11.28	5
Parachor [P]			
20°C			
30			
40			
Sugd.		180.8	5
Exp. L. 1. %/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 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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 94

NAME	Triethylamine			STRUCTURAL FORMULA
				$(C_2H_5)_3N$
Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{15}N$	Molecular Weight 101.188	

		Ref.
F.P. °C	-114.7	3
F.P. 100%		
B.P. °C		
760 mm	89.5	3
100	36.6	5
30	12.9	5
10	-5.2	5
1	-35.4	5
Pressure		
mm 25°C	57.07	5
t_e	972.6	5
Density		
g/ml 20°C	0.7280	3
d_4^t 25	0.7235	3
30		
a	0.7460	5
b	-0.0_3887	5
Ref. Index		
n_D 20°C	1.4010	3
25	1.3980	3
30		
"C"	0.7343	4
MR (Obs.)	33.770	4
MR (Calc.)	34.008	5
(nD-d/2)		
Dielectric		
A | 13 to	7.18658	5
B | 127 °C	1341.3	5
C	222.	5
A* | 13 to	1.61128	5
B* | 117 °C	1264.0	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	97.45	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3461	5
BP	0.0413	5
t_e	0.0340	5
30 mm	0.5956	5
ΔHm cal/g		
ΔHv cal/g		
25°C	87.96	5
30 mm	89.92	5
BP	77.70	5
t_e	76.47	5
t_e (d, e)	76.43	5
$\Delta Hv/T_e$	20.88	5
d | 13 to	91.98	5
e | 117 °C	0.1595	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9957	5
30 mm	1.0000	5
BP	0.9503	5
t_e	0.9433	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.		

		Ref.
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	21.04	5
γ 30	20.00	5
40	18.99	5
Parachor [P]		
20°C		
30		
40		
Sugd.	297.8	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		

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VI. AMINOALKANES

No. 95

NAME	Tri-n-propylamine		STRUCTURAL FORMULA
			$(C_3H_7)_3N$
Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{21}N$	Molecular Weight 153.266

		Ref.
F.P. °C	-93.5	3
F.P. 100%		
B.P. °C 760 mm	156.5	3
100	95.3	5
30	67.7	5
10	46.6	5
1	11.4	5
Pressure mm 25°C	2.64	5
t_e	1148.6	5
Density g/ml 20°C	0.7567	3
d_4^t 25	0.7523	3
30		
a	0.7743	5
b	-0.0_3879	5
Ref. Index n_D 20°C	1.4171	3
25	1.4151	3
30		
"C"	0.7332	4
MR (Obs.)	50.946	4
MR (Calc.) (nD-d/2)	47.862	5
Dielectric		
A | 68 to	7.25583	5
B | 202 °C	1599.1	5
C	209.	5
A* | 68 to	1.81012	5
B* | 192 °C	1515.0	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	172.12	5

		Ref.
dt/dP °C/mm		
25°C	5.625	5
BP	0.0477	5
t_e	0.0343	5
30 mm	0.6932	5
ΔHm cal/g		
ΔHv cal/g		
25°C	77.99	5
30 mm	72.42	5
BP	61.57	5
t_e	59.75	5
t_e (d, e)	59.66	5
$\Delta Hv/T_e$	20.56	5
d | 68 to	80.69	5
e | 192 °C	0.1222	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0063	5
30 mm	1.0000	5
BP	0.9402	5
t_e	0.9271	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B_v | to		
A_v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm. 20°C		17.59	5
γ 30		16.78	5
40		16.00	5
Parachor [P] 20°C			
30			
40			
Sugd.		414.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 96

NAME	Tri-n-octylamine			STRUCTURAL FORMULA
				$(CH_3(CH_2)_6CH_2)_3N$
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 25°C			f | | to		
F.P. 100%			BP	0.0669	5	g | __ °K		
B.P. °C			t_e	0.0361	5	h |		
760 mm	357.	3	30 mm	0.9856	5	f' | | to		
100	271.	5	ΔHm cal/g			g' | __ °K		
30	232.	5	ΔHv cal/g 25°C			h' |		
10	202.	5	30 mm	48.41	5	m | | to		
1	151.	5	BP	39.41	5	n | __ °K		
Pressure mm 25°C			t_e	36.56	5	o |		
t_e	1644.1	5	t_e (d,e)	36.37	5	m' | | to		
Density g/ml 20°C	0.8121	3	ΔHv/T_e	19.22	5	n' | __ °K		
d_4^t 25	0.8088	3	d | 232 to	65.04	5	o' |		
30			e | 419 °C	0.0718	5	Surface tension dynes/cm. 20°C	27.78	5
a	0.8253	5	d' | to			γ 30	26.89	5
b	-0.0_3660	5	e' | °C			40	26.02	5
Ref. Index n_D 20°C	1.4502	3	d_c g/ml			Parachor [P] 20°C		
25	1.4486	3	v_c ml/g			30		
30			t_c °C			40		
"C"	0.7341	4	P_c mm			Sugd.	999.8	5
MR (Obs.)	117.076	4	PV/RT 25°C			Exp. L. 1.%/wt. u.		
MR (Calc.) (nD-d/2)	117.132	5	30 mm	1.0000	5	Dispersion		
Dielectric			BP	0.9097	5	Flash Point °C		
A | 232 to	7.39168	5	t_e	0.8787	5	Fire Point		
B | 429 °C	2381.7	5	t_c			M Spec.		
C	171.	5	ΔHc kcal/m			Ultra V.		
A* | 232 to	2.20961	5	ΔHf			X-Ray Dif.		
B* | 419 °C	2288.1	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 | t_c °C			c_v vap.					
Cc								
Cryos. A° consts. 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
		$(CH_3(CH_2)_8CH_2)_3N$

Mole % Pur.	Ref. 3	Molecular Formula $C_{30}H_{63}N$	Molecular Weight 437.812

		Ref.
F. P. °C	-1.	3
F. P. 100%		
B. P. °C		
760 mm	406.	3
100	314.	5
30	272.	5
10	240.	5
1	185.	5
Pressure mm 25°C		
t_e	1757.3	5
Density g/ml 20°C	0.8198	3
d_4^t 25	0.8165	3
30		
a	0.8330	5
b	-0.0_3660	5
Ref. Index		
n_D 20°C	1.4451	3
25	1.4533	3
30		
"C"	0.7347	4
MR (Obs.)	144.924	4
MR (Calc.) (nD-d/2)	144.840	5
Dielectric		
A | 272 to	7.41618	5
B | 486 °C	2576.1	5
C	162.	5
A* | 272 to	2.31075	5
B* | 476 °C	2482.6	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	455.57	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0716	5
t_e	0.0366	5
30 mm	1.0573	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	42.47	5
BP	34.18	5
t_e	31.25	5
t_e (d, e)	31.12	5
$\Delta Hv/T_e$	18.78	5
d | 272 to	59.23	5
e | 476 °C	0.0617	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	0.9022	5
t_e	0.8668	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension			
dynes/cm. 20°C		28.49	5
30		27.58	5
40		26.70	5
Parachor [P]			
20°C			
30			
40			
Sugd.		1233.8	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 98

NAME	Tri-n-dodecylamine	STRUCTURAL FORMULA
		$(CH_3(CH_2)_{10}CH_2)_3N$

Mole % Pur.	Ref. 3	Molecular Formula $C_{36}H_{75}N$	Molecular Weight 521.968

		Ref.
F.P. °C	15.7	3
F.P. 100%		
B.P. °C		
760 mm	448.	3
100	350.	5
30	306.	5
10	272.	5
1	215.	5
Pressure mm 25°C		
t_e	1852.2	5
Density g/ml 20°C	0.8251	3
d_4^t 25 30	0.8219	3
a	0.8379	5
b	-0.0_3640	5
Ref. Index		
n_D 20°C	1.4585	3
25	1.4567	3
30		
"C"	0.7351	4
MR (Obs.)	172.778	4
MR (Calc.) (nD-d/2)	172.548	5
Dielectric		
A | 306 to	7.43251	5
B | 534 °C	2740.1	5
C	154.	5
A* | 306 to	2.39139	5
B* | 524 °C	2647.7	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	503.92	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0756	5
t_e	0.0370	5
30 mm	1.1184	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	38.05	5
BP	30.32	5
t_e	27.35	5
t_e (d, e)	27.27	5
$\Delta Hv/T_e$	18.37	5
d | 306 to	54.72	5
e | 524 °C	0.0545	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	0.8958	5
t_e	0.8567	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.		

		Ref.
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	28.98	5
γ 30	28.09	5
40	27.22	5
Parachor [P]		
20°C		
30		
40		
Sugd.	1467.8	5
Exp. L. 1.%/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. 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.
F. P. °C	33.	3
F. P. 100%		
B. P. °C 760 mm	484.	3
100	382.	5
30	336.	5
10	300.	5
1	240.	5
Pressure mm 25°C t_e	1931.2	5
Density g/ml 20°C	0.8290[b]	3
d_4^t 25	0.8257[b]	3
30		
a	0.8422	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4609[b]	3
25	1.4591[b]	3
30		
"C"	0.7352	4
MR (Obs.)	200.592	4
MR (Calc.) (nD-d/2)	200.256	5
Dielectric		
A | 336 to	7.44411	5
B | 575 °C	2879.4	5
C	147.	5
A* | 336 to	2.45921	5
B* | 565 °C	2788.7	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	545.46	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0790	5
t_e	0.0374	5
30 mm	1.1707	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	34.56	5
BP	27.26	5
t_e	24.23	5
t_e (d, e)	24.24	5
$\Delta Hv/T_e$	17.94	5
d | 336 to	51.06	5
e | 565 °C	0.0492	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	0.8902	5
t_e	0.8479	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension dynes/cm. 20°C		29.35	5
γ 30		28.43	5
40		27.52	5
Parachor [P] 20°C			
30			
40			
Sugd.		1701.8	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			

[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

No. 100

NAME	Tri-n-hexadecylamine	STRUCTURAL FORMULA
		$(CH_3(CH_2)_{14}CH_2)_3N$

Mole % Pur.	Ref. 3	Molecular Formula $C_{48}H_{99}N$	Molecular Weight 690.280

		Ref.
F.P. °C	43.	3
F.P. 100%		
B.P. °C 760 mm	516.	3
100	410.	5
30	362.	5
10	325.	5
1	262.	5
Pressure mm 25°C t_e	2000.4	5
Density g/ml 20°C	0.8320[b]	3
d_4^t 25	0.8287[b]	3
30		
a	0.8452	5
b	-0.03660	5
Ref. Index n_D 20°C	1.4629[b]	3
25	1.4610[b]	3
30		
"C"	0.7356	4
MR (Obs.)	228.469	4
MR (Calc.)	227.964	5
(nD-d/2)		
Dielectric		
A | 362 to	7.45521	5
B | 612 °C	3005.4	5
C	141.	5
A* | 362 to	2.51956	5
B* | 602 °C	2916.4	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	582.47	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0821	5
t_e	0.0378	5
30 mm	1.2174	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	31.75	5
BP	24.83	5
t_e	21.74	5
t_e (d, e)	21.84	5
$\Delta Hv/T_e$	17.54	5
d | 362 to	47.97	5
e | 602 °C	0.0449	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	0.8853	5
t_e	0.8403	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.		

		Ref.
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	29.64	5
γ 30	28.71	5
40	27.80	5
Parachor [P] 20°C		
30		
40		
Sugd.	1935.8	5
Exp. L.1.%/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

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TABLE VI. AMINOALKANES

No. 101

NAME	Tri-n-octadecylamine	STRUCTURAL FORMULA
		$(CH_3(CH_2)_{16}CH_2)_3N$

Mole % Pur.	Ref. 3	Molecular Formula $C_{54}H_{111}N$	Molecular Weight 774.436

		Ref.
F.P. °C	54.	3
F.P. 100%		
B.P. °C		
760 mm	543.	3
100	434.	5
30	384.	5
10	345.	5
1	281.	5
Pressure mm 25°C t_e	2057.6	5
Density g/ml 20°C	0.8343[b]	3
d_4^t 25	0.8311[b]	3
30		
a	0.8471	5
b	-0.0_3640	5
Ref. Index n_D 20°C	1.4643[b]	3
25	1.4625[b]	3
30		
"C"	0.7356	4
MR (Obs.)	256.282	4
MR (Calc.) (nD-d/2)	255.672	5
Dielectric		
A 384 to	7.46440	5
B 644 °C	3112.3	5
C	136.	5
A* 384 to	2.57323	5
B* 634 °C	3025.1	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	613.75	5

			Ref.
dt/dP			
°C/mm			
25°C			
BP		0.0847	5
t_e		0.0381	5
30 mm		1.2568	5
ΔHm cal/g			
ΔHv cal/g			
25°C			
30 mm		29.34	5
BP		22.78	5
t_e		19.69	5
t_e (d, e)		19.86	5
$\Delta Hv/T_e$		17.19	5
d 384 to		45.17	5
e 634 °C		0.0412	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		0.8812	5
t_e		0.8339	5
t_c			
ΔHc kcal/m			
ΔHf			
ΔFf			
Viscosity centistokes			
η °C			
B^v to			
A^v °C			
(B^v)			
(A^v)			
c_p liq. °C			
c_p vap. °K			
c_v vap.			

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension			
dynes/cm. 20°C		29.86	5
σ 30		28.95	5
40		28.07	5
Parachor [P]			
20°C			
30			
40			
Sugd.		2169.8	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 102

NAME	Tri-n-eicosylamine	STRUCTURAL FORMULA
		$(CH_3(CH_2)_{18}CH_2)_3N$

Mole % Pur.	Ref. 3	Molecular Formula $C_{60}H_{123}N$	Molecular Weight 858.592

		Ref.
F.P. °C	62.	3
F.P. 100%		
B.P. °C 760 mm	568.	3
100	455.	5
30	404.	5
10	365.	5
1	298.	5
Pressure mm 25°C t_e	2109.5	5
Density g/ml 20°C	0.8363[b]	3
d_4^t 25	0.8330[b]	3
30		
a	0.8495	5
b	-0.0_3660	5
Ref. Index n_D 20°C	1.4656[b]	3
25	1.4636[b]	3
30		
"C"	0.7358	4
MR (Obs.)	284.134	4
MR (Calc.)	283.380	5
(nD-d/2)		
Dielectric		
A |404 to	7.46988	5
B |673 °C	3207.8	5
C	131.	5
A* |404 to	2.61916	5
B* |663 °C	3122.8	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	642.75	5

		Ref.
dt/dP °C/mm		
25°C		
BP	0.0870	5
t_e	0.0384	5
30 mm	1.2930	5
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm	27.35	5
BP	21.05	5
t_e	17.87	5
t_e (d, e)	18.17	5
ΔHv/T_e	16.75	5
d |404 to	42.91	5
e |663 °C	0.0385	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	0.8773	5
t_e	0.8278	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.		

			Ref.
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	30.05	5
γ	30	29.12	5
	40	28.20	5
Parachor [P]	20°C		
	30		
	40		
	Sugd.	2403.8	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			

[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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 1

NAME	Hydrogen cyanide Hydrocyanic acid	STRUCTURAL FORMULA HCN
Mole % Pur.	Ref. 3	Molecular Formula HCN — Molecular Weight 27.026

		Ref.
F. P. °C	-13.24	3
F. P. 100%		
B. P. °C 760 mm	25.70	3
100	-18.87	5
30	-38.81	5
10	-54.05	5
1	-79.42	5
Pressure mm 25°C	740.1	5
t_e	802.8	5
Density g/ml 20°C	0.6876	3
d_4^t 25	0.6816	3
30		
a	0.7118	5
b	-0.00116	5
Ref. Index n_D 20°C	1.2614	3
25	1.2594	3
30		
"C"	0.5175	4
MR (Obs.)	6.470	4
MR (Calc.) (nD-d/2)	6.568	5
Dielectric		
A | -39 to	7.17185	5
B | 57 °C	1123.0	5
C	236.	5
A* | -39 to	1.07847	5
B* | 47 °C	1051.9	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	27.16	5

		Ref.
dt/dP °C/mm		
25°C	0.0356	5
BP	0.0349	5
t_e	0.0334	5
30 mm	0.5013	5
ΔHm cal/g		
ΔHv cal/g		
25°C	238.48	5
30 mm	268.50	5
BP	238.15	5
t_e	237.47	5
t_e (d, e)	237.46	5
ΔHv/T_e	21.37	5
d | -39 to	250.24	5
e | 47 °C	0.4704	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9628	5
30 mm	1.0000	5
BP	0.9621	5
t_e	0.9608	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.		

			Ref.
f g h	to °K		
f' g' h'	to °K		
m n o	to °K		
m' n' o'	to °K		
Surface tension dynes/cm. 20°C		19.68	5
γ 30		18.30	5
40		16.96	5
Parachor [P] 20°C			
30			
40			
Sugd.		82.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 2

NAME	Methyl cyanide (acetonitrile)	STRUCTURAL FORMULA
		CH_3CN

Mole % Pur.	Ref. 3	Molecular Formula C_2H_3N	Molecular Weight 41.052

		Ref.
F.P. °C	-45.72	3
F.P. 100%		
B.P. °C		
760 mm	81.60	3
100	28.63	5
30	5.07	5
10	-12.88	5
1	-42.66	5
Pressure		
mm 25°C	84.30	5
t_e	954.4	5
Density		
g/ml 20°C	0.7857	3
d_4^t 25	0.7803	3
30		
a	0.8073	5
b	-0.00107	5
Ref. Index		
n_D 20°C	1.3436	3
25	1.3416	3
30		
"C"	0.5878	4
MR (Obs.)	11.057	4
MR (Calc.)	11.186	5
(nD-d/2)		
Dielectric		
A | 5 to	7.07354	5
B | 119 °C	1279.2	5
C	224.	5
A* | 5 to	1.10890	5
B* | 109 °C	1201.8	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	88.97	5

		Ref.
dt/dP		
°C/mm		
25°C	0.2487	5
BP	0.0416	5
t_e	0.0347	5
30 mm	0.5913	5
ΔHm cal/g		
ΔHv cal/g		
25°C	203.84	5
30 mm	211.24	5
BP	183.46	5
t_e	180.93	5
t_e (d, e)	180.79	5
$\Delta Hv/T_e$	20.51	5
d | 5 to	213.08	5
e | 109 °C	0.3629	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9934	5
30 mm	1.0000	5
BP	0.9537	5
t_e	0.9473	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.		

		Ref.
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	29.61	5
γ 30	28.00	5
40	26.45	5
Parachor [P]		
20°C		
30		
40		
Sugd.	121.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 3

NAME	Ethyl cyanide Propionitrile	STRUCTURAL FORMULA CH_3CH_2CN
Mole % Pur.	Ref. 3	Molecular Formula C_3H_5N	Molecular Weight 55.078

		Ref.
F.P. °C	-92.89	3
F.P. 100%		
B.P. °C		
760 mm	97.35	3
100	42.00	5
30	17.41	5
10	-1.32	5
1	-32.38	5
Pressure mm 25°C	44.63	5
t_e	996.7	5
Density g/ml 20°C	0.7818	3
d_4^t 25	0.7768	3
30		
a	0.8018	5
b	-0.03994	5
Ref. Index n_D 20°C	1.3655	3
25	1.3635	3
30		
"C"	0.6264	4
MR (Obs.)	15.761	4
MR (Calc.)	15.804	5
(nD-d/2)	0.9746	4
Dielectric		
A | 17 to	7.05848	5
B | 137 °C	1327.9	5
C	221.	5
A* | 17 to	1.20776	5
B* | 127 °C	1248.5	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	106.57	5

		Ref.
dt/dP °C/mm		
25°C	0.4417	5
BP	0.0435	5
t_e	0.0351	5
30 mm	0.6171	5
ΔHm cal/g		
ΔHv cal/g		
25°C	162.35	5
30 mm	164.53	5
BP	142.21	5
t_e	139.78	5
t_e (d, e)	139.64	5
$\Delta Hv/T_e$	20.28	5
d | 10 to	169.39	5
e | 115 °C	0.2792	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9980	5
30 mm	1.0000	5
BP	0.9513	5
t_e	0.9434	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.		

			Ref.
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		27.19	5
γ 30		25.82	5
40		24.49	5
Parachor [P]			
20°C			
30			
40			
Sugd.		160.9	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 4

NAME	n-Propyl cyanide		STRUCTURAL FORMULA
			$CH_3(CH_2)_2CN$
Mole % Pur.	Ref. 3	Molecular Formula C_4H_7N	Molecular Weight 69.104

		Ref.
F.P. °C	-111.9	3
F.P. 100%		
B.P. °C		
760 mm	117.9	3
100	59.5	5
30	33.5	5
10	13.8	5
1	-19.0	5
Pressure mm 25°C	19.10	5
t_e	1051.6	5
Density g/ml 20°C	0.7913	3
d_4^{t} 25	0.7869	3
30		
a	0.8089	5
b	-0.0_3877	5
Ref. Index n_D 20°C	1.3840	3
25	1.3820	3
30		
"C"	0.6485	4
MR (Obs.)	20.418	4
MR (Calc.) (nD-d/2)	20.422	5
Dielectric		
A | 34 to	7.03957	5
B | 160 °C	1390.7	5
C	217.	5
A* | 34 to	1.27061	5
B* | 150 °C	1309.0	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	129.64	5

		Ref.
dt/dP °C/mm		
25°C	0.9536	5
BP	0.0459	5
t_e	0.0356	5
30 mm	0.6507	5
ΔHm cal/g		
ΔHv cal/g		
25°C	140.57	5
30 mm	138.52	5
BP	119.02	5
t_e	116.49	5
t_e (d, e)	116.31	5
$\Delta Hv/T_e$	19.98	5
d | 34 to	146.27	5
e | 150 °C	0.2311	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0016	5
30 mm	1.0000	5
BP	0.9482	5
t_e	0.9383	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.		

		Ref.
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	27.45	5
γ 30	26.24	5
40	25.07	5
Parachor [P] 20°C		
30		
40		
Sugd.	199.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 5

NAME	n-Butyl cyanide	STRUCTURAL FORMULA
		$CH_3(CH_2)_3CN$

Mole % Pur.	Ref. 3	Molecular Formula C_5H_9N	Molecular Weight 83.130

		Ref.
F.P. °C	-96.0	3
F.P. 100%		
B.P. °C		
760 mm	141.3	3
100	79.3	5
30	51.9	5
10	30.9	5
1	-3.7	5
Pressure		
mm 25°C	7.07	5
t_e	1113.6	5
Density		
g/ml 20°C	0.8008	3
d_4^t 25	0.7963	3
30		
a	0.8188	5
b	-0.03898	5
Ref. Index		
n_D 20°C	1.3971	3
25	1.3951	3
30		
"C"	0.6614	4
MR (Obs.)	25.004	4
MR (Calc.) (nD-d/2)	25.040	5
Dielectric		
A | 52 to	7.02103	5
B | 185 °C	1462.7	5
C	212.	5
A* | 52 to	1.31449	5
B* | 175 °C	1378.4	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	156.05	5

		Ref.
dt/dP		
°C/mm		
25°C	2.360	5
BP	0.0488	5
t_e	0.0361	5
30 mm	0.6890	5
ΔHm cal/g		
ΔHv cal/g		
25°C	127.79	5
30 mm	122.14	5
BP	104.28	5
t_e	101.55	5
t_e (d, e)	101.33	5
$\Delta Hv/T_e$	19.67	5
d | 52 to	132.49	5
e | 175 °C	0.1997	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0029	5
30 mm	1.0000	5
BP	0.9447	5
t_e	0.9326	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.		

			Ref.
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		28.05	5
γ 30		26.80	5
40		25.60	5
Parachor [P]			
20°C			
30			
40			
Sugd.		238.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 6

NAME	n-Pentyl cyanide		STRUCTURAL FORMULA
			$CH_3(CH_2)_4CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_6H_{11}N$	Molecular Weight 97.156

		Ref.
F.P. °C	-80.3	3
F.P. 100%		
B.P. °C		
760 mm	163.6	3
100	98.3	5
30	69.3	5
10	47.3	5
1	10.9	5
Pressure mm 25°C	2.66	5
t_e	1172.3	5
Density g/ml 20°C	0.8052	3
d_4^{t} 25 30	0.8011	3
a	0.8216	5
b	-0.03819	5
Ref. Index n_D 20°C	1.4068	3
25	1.4048	3
30		
"C"	0.6730	4
MR (Obs.)	29.690	4
MR (Calc.) (nD-d/2)	29.658	5
Dielectric		
A | 69 to	7.00859	5
B | 211 °C	1533.9	5
C	208.	5
A* | 69 to	1.35369	5
B* | 201 °C	1447.1	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	181.35	5

		Ref.
dt/dP °C/mm		
25°C	5.772	5
BP	0.0514	5
t_e	0.0366	5
30 mm	0.7257	5
ΔHm cal/g		
ΔHv cal/g		
25°C	118.47	5
30 mm	110.15	5
BP	93.55	5
t_e	90.67	5
t_e (d, e)	90.42	5
$\Delta Hv/T_e$	19.38	5
d | 69 to	122.36	5
e | 201 °C	0.1761	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0016	5
30 mm	1.0000	5
BP	0.9414	5
t_e	0.9270	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.		

		Ref.
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	28.14	5
γ 30	27.01	5
40	25.91	5
Parachor [P] 20°C		
30		
40		
Sugd.	277.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 7

NAME	n-Hexyl cyanide	STRUCTURAL FORMULA
		$CH_3(CH_2)_5CN$

Mole % Pur.	Ref. 3	Molecular Formula $C_7H_{13}N$	Molecular Weight 111.182

		Ref.
F. P. °C	-62.6	3
F. P. 100%		
B. P. °C 760 mm	184.6	3
100	116.1	5
30	85.8	5
10	62.7	5
1	24.6	5
Pressure mm 25°C	1.03	5
t_e	1227.1	5
Density g/ml 20°C	0.8099	3
d_4^t 25	0.8056	3
30		
a	0.8271	5
b	-0.03860	5
Ref. Index n_D 20°C	1.4144	3
25	1.4124	3
30		
"C"	0.6809	4
MR (Obs.)	34.333	4
MR (Calc.) (nD-d/2)	34.276	5
Dielectric		
A | 86 to	6.99543	5
B | 235 °C	1598.9	5
C	204.	5
A* | 86 to	1.38514	5
B* | 225 °C	1510.2	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	205.30	5

		Ref.
dt/dP		
°C/mm		
25°C	13.82	5
BP	0.0540	5
t_e	0.0371	5
30 mm	0.7601	5
ΔHm cal/g		
ΔHv cal/g		
25°C	111.35	5
30 mm	100.94	5
BP	85.26	5
t_e	82.25	5
t_e (d, e)	81.98	5
$\Delta Hv/T_e$	19.11	5
d | 86 to	114.55	5
e | 225 °C	0.1587	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9983	5
30 mm	1.0000	5
BP	0.9382	5
t_e	0.9218	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.		

			Ref.
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		28.40	5
σ 30		27.21	5
40		26.06	5
Parachor [P]			
20°C			
30			
40			
Sugd.		316.9	5
Exp. L. 1. %/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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 8

NAME	n-Heptyl cyanide	STRUCTURAL FORMULA
		$CH_3(CH_2)_6CN$

Mole % Pur.	Ref. 3	Molecular Formula $C_8H_{15}N$	Molecular Weight 125.208

		Ref.
F.P. °C	-45.6	3
F.P. 100%		
B.P. °C		
760 mm	205.2	3
100	133.6	5
30	101.9	5
10	77.8	5
1	38.0	5
Pressure mm 25°C	0.39	5
t_e	1280.4	5
Density g/ml 20°C	0.8136	3
d_4^{t} 25 30	0.8095	3
a	0.8120	5
b	-0.0_3100	5
Ref. Index n_D 20°C	1.4203	3
25	1.4183	3
30		
"C"	0.6899	4
MR (Obs.)	39.142	4
MR (Calc.) (nD-d/2)	38.894	5
Dielectric		
A | 102 to	6.98285	5
B | 259 °C	1662.14	5
C	200.	5
A* | 102 to	1.41135	5
B* | 249 °C	1571.53	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	228.88	5

		Ref.
dt/dP		
°C/mm		
25°C	33.57	5
BP	0.0564	5
t_e	0.0375	5
30 mm	0.7938	5
ΔHm cal/g		
ΔHv cal/g		
25°C	105.94	5
30 mm	93.73	5
BP	78.82	5
t_e	75.75	5
t_e (d, e)	75.40	5
$\Delta Hv/T_e$	18.89	5
d | 102 to	108.43	5
e | 249 °C	0.1443	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9933	5
30 mm	1.0000	5
BP	0.9351	5
t_e	0.9167	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.		

			Ref.
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		28.10	5
γ 30		27.96	5
40		27.82	5
Parachor [P]			
20°C			
30			
40			
Sugd.		355.9	5
Exp. L.1.%/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 VII. ALKYL CYANIDES

No. 9

NAME	n-Octyl cyanide Nonanenitrile	STRUCTURAL FORMULA $CH_3(CH_2)_7CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_9H_{17}N$ — Molecular Weight 139.234

		Ref.
F. P. °C	-34.2	3
F. P. 100%		
B. P. °C 760 mm	224.4	3
100	149.9	5
30	116.9	5
10	91.9	5
1	50.5	5
Pressure mm 25°C	0.16	5
t_e	1329.7	5
Density g/ml 20°C	0.8178	3
d_4^{t} 25 / 30	0.8137	3
a	0.8342	5
b	-0.0_3820	5
Ref. Index n_D 20°C	1.4255	3
25	1.4235	3
30		
"C"	0.6913	4
MR (Obs.)	43.579	4
MR (Calc.) (nD-d/2)	43.512	5
Dielectric		
A | 117 to	6.97440	5
B | 281 °C	1723.0	5
C	197.	5
A* | 117 to	1.43758	5
B* | 271 °C	1630.7	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	250.96	5

		Ref.
dt/dP		
°C/mm		
25°C	78.81	5
BP	0.0588	5
t_e	0.0380	5
30 mm	0.8254	5
ΔHm cal/g		
ΔHv cal/g		
25°C	101.30	5
30 mm	87.69	5
BP	73.34	5
t_e	70.13	5
t_e (d, e)	69.80	5
$\Delta Hv/T_e$	18.63	5
d | 117 to	103.29	5
e | 271 °C	0.1334	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9874	5
30 mm	1.0000	5
BP	0.9322	5
t_e	0.9119	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.		

			Ref.
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		28.94	5
γ 30		27.80	5
40		26.69	5
Parachor [P] 20°C			
30			
40			
Sugd.		394.9	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			

+ grams/100 grams solvent

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. 10

NAME	n-Nonyl cyanide		STRUCTURAL FORMULA
Mole % Pur.	Ref. 3	Molecular Formula $C_{10}H_{19}N$	Molecular Weight 153.260

$CH_3(CH_2)_8CN$

		Ref.
F.P. °C	-14.5	3
F.P. 100%		
B.P. °C		
760 mm	243.	3
100	166.	5
30	131.	5
10	106.	5
1	63.	5
Pressure		
mm 25°C	0.06	5
t_e	1377.1	5
Density		
g/ml 20°C	0.8199	3
d_4^t 25	0.8160	3
30		
a	0.8355	5
b	-0.0_3780	5
Ref. Index		
n_D 20°C	1.4296	3
25	1.4276	3
30		
"C"	0.6958	4
MR (Obs.)	48.248	4
MR (Calc.) (nD-d/2)	48.130	5
Dielectric		
A 131 to	6.96575	5
B 302 °C	1781.0	5
C	193.	5
A* 131 to	1.46020	5
B* 292 °C	1687.3	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	272.41	5

		Ref.
dt/dP °C/mm		
25°C	185.4	5
BP	0.0610	5
t_e	0.0384	5
30 mm	0.8559	5
ΔHm cal/g		
ΔHv cal/g		
25°C	97.53	5
30 mm	82.67	5
BP	68.84	5
t_e	65.55	5
t_e (d, e)	65.19	5
$\Delta Hv/T_e$	18.42	5
d 131 to	98.97	5
e 292 °C	0.1240	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9805	5
30 mm	1.0000	5
BP	0.9294	5
t_e	0.9073	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.		

		Ref.
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	29.03	5
γ 30	27.94	5
40	26.89	5
Parachor [P]		
20°C		
30		
40		
Sugd.	433.9	5
Exp. L. 1. %/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 11

NAME	n-Decyl cyanide		STRUCTURAL FORMULA
			$CH_3(CH_2)_9CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_{11}H_{21}N$	Molecular Weight 167.286

		Ref.
F.P. °C	-5.8	3
F.P. 100%		
B.P. °C 760 mm	260.	3
100	180.	5
30	145.	5
10	118.	5
1	74.	5
Pressure mm 25°C	0.03	5
t_e	1420.1	5
Density g/ml 20°C	0.8220	3
d_4^t 25	0.8181	3
30		
a	0.8376	5
b	-0.03780	5
Ref. Index n_D 20°C	1.4331	3
25	1.4311	3
30		
"C"	0.6993	4
MR (Obs.)	52.903	4
MR (Calc.) (nD-d/2)	52.748	5
Dielectric		
A | 145 to	6.96026	5
B | 322 °C	1835.8	5
C	190.	5
A* | 145 to	1.48357	5
B* | 312 °C	1740.6	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	292.08	5

		Ref.
dt/dP		
°C/mm		
25°C	414.0	5
BP	0.0630	5
t_e	0.0387	5
30 mm	0.8839	5
ΔHm cal/g		
ΔHv cal/g		
25°C	94.01	5
30 mm	78.23	5
BP	64.90	5
t_e	61.56	5
t_e (d, e)	61.19	5
ΔHv/T_e	18.22	5
d | 145 to	94.99	5
e | 312 °C	0.1157	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9736	5
30 mm	1.0000	5
BP	0.9268	5
t_e	0.9030	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.		

			Ref.
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		29.16	5
γ 30		28.06	5
40		27.00	5
Parachor [P] 20°C			
30			
40			
Sugd.		472.9	5
Exp. L.1.%/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

No. 12

NAME	n-Undecyl cyanide	STRUCTURAL FORMULA
		$CH_3(CH_2)_{10}CN$

Mole % Pur.	Ref. 3	Molecular Formula $C_{12}H_{23}N$	Molecular Weight 186.312

		Ref.
F.P. °C	4.0	3
F.P. 100%		
B.P. °C		
760 mm	277.	3
100	195.	5
30	158.	5
10	131.	5
1	85.	5
Pressure		
mm 25°C	0.01	5
t_e	1462.8	5
Density		
g/ml 20°C	0.8240	3
d_4^t 25	0.8202	3
30		
a	0.8392	5
b	-0.0_3760	5
Ref. Index		
n_D 20°C	1.4361	3
25	1.4341	3
30		
"C"	0.7022	4
MR (Obs.)	59.131	4
MR (Calc.) (nD-d/2)	57.366	5
Dielectric		
A | 158 to	6.95053	5
B | 342 °C	1886.3	5
C	187.	5
A* | 158 to	1.51220	5
B* | 332 °C	1790.2	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	311.82	5

		Ref.
dt/dP		
°C/mm		
25°C	957.2	5
BP	0.0651	5
t_e	0.0391	5
30 mm	0.9115	5
ΔHm cal/g		
ΔHv cal/g		
25°C	88.89	5
30 mm	72.53	5
BP	59.89	5
t_e	56.57	5
t_e (d, e)	56.19	5
$\Delta Hv/T_e$	18.02	5
d | 158 to	89.34	5
e | 332 °C	0.1063	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9655	5
30 mm	1.0000	5
BP	0.9243	5
t_e	0.8988	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.		

		Ref.
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	26.27	5
γ 30	25.32	5
40	24.39	5
Parachor [P]		
20°C		
30		
40		
Sugd.	511.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

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.
F.P. °C	9.7	3
F.P. 100%		
B.P. °C		
760 mm	293.	3
100	208.	5
30	171.	5
10	142.	5
1	95.	5
Pressure mm 25°C		
t_e	1502.6	5
Density g/ml 20°C	0.8257	3
d_4^{t} 25	0.8220	3
30		
a	0.8405	5
b	-0.03740	5
Ref. Index n_D 20°C	1.4378	3
25	1.4367	3
30		
"C"	0.7033	4
MR (Obs.)	62.078	4
MR (Calc.) (nD-d/2)	61.984	5
Dielectric		
A | 171 to	6.94454	5
B | 360 °C	1936.4	5
C	184.	5
A* | 171 to	1.51899	5
B* | 350 °C	1839.3	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	330.44	5

		Ref.
dt/dP		
°C/mm		
25°C	2146.	5
BP	0.0670	5
t_e	0.0394	5
30 mm	0.9377	5
ΔHm cal/g		
ΔHv cal/g		
25°C	88.82	5
30 mm	71.21	5
BP	58.60	5
t_e	55.15	5
t_e (d, e)	54.74	5
$\Delta Hv/T_e$	17.85	5
d | 171 to	88.80	5
e | 350 °C	0.1031	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9576	5
30 mm	1.0000	5
BP	0.9219	5
t_e	0.8948	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.		

			Ref.
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		29.41	5
30		28.37	5
40		27.35	5
Parachor [P]			
20°C			
30			
40			
Sugd.		550.9	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			

+ grams/100 grams solvent

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

SOURCE: MCA

PURIFICATION: MCA

LITERATURE REFERENCES: 3 MCA

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 14

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

		Ref.
F.P. °C	19.	3
F.P. 100%		
B.P. °C		
760 mm	308.	3
100	221.	5
30	182.	5
10	153.	5
1	105.	5
Pressure mm 25°C		
t_e	1539.7	5
Density g/ml 20°C	0.8274	3
d_4^t 25	0.8237	3
30		
a	0.8422	5
b	-0.0_3740	5
Ref. Index		
n_D 20°C	1.4411	3
25	1.4391	3
30		
"C"	0.7069	4
MR (Obs.)	66.833	4
MR (Calc.)	66.602	5
(nD-d/2)		
Dielectric		
A | 182 to	6.93759	5
B | 378 °C	1981.7	5
C	181.	5
A* | 182 to	1.53530	5
B* | 368 °C	1883.9	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	347.94	5

		Ref.
dt/dP		
°C/mm		
25°C	4702.	5
BP	0.0688	5
t_e	0.0397	5
30 mm	0.9622	5
ΔHm cal/g		
ΔHv cal/g		
25°C	86.57	5
30 mm	68.23	5
BP	55.93	5
t_e	52.44	5
t_e (d, e)	52.02	5
$\Delta Hv/T_e$	17.68	5
d | 182 to	86.09	5
e | 368 °C	0.0979	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9495	5
30 mm	1.0000	5
BP	0.9196	5
t_e	0.8910	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.		

		Ref.
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	29.54	5
γ 30	28.49	5
40	27.48	5
Parachor [P]		
20°C		
30		
40		
Sugd.	589.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 15

NAME	n-Tetradecyl cyanide		STRUCTURAL FORMULA
			$CH_3(CH_2)_{13}CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_{15}H_{29}N$	Molecular Weight 223.390

		Ref.
F.P. °C	23.	3
F.P. 100%		
B.P. °C 760 mm	322.	3
100	233.	5
30	193.	5
10	164.	5
1	114.	5
Pressure mm 25°C t_e	1574.1	5
Density g/ml 20°C	0.8289	3
d_4^{t} 25	0.8252	3
30		
a	0.8437	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4431	3
25	1.4411	3
30		
"C"	0.7086	4
MR (Obs.)	71.462	4
MR (Calc.) (nD-d/2)	71.220	5
Dielectric		
A | 193 to	6.93397	5
B | 394 °C	2026.6	5
C	178.	5
A* | 193 to	1.55352	5
B* | 384 °C	1927.9	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	364.31	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0705	5
t_e	0.0400	5
30 mm	0.9852	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	65.49	5
BP	53.51	5
t_e	50.01	5
t_e (d, e)	49.58	5
ΔHv/T_e	17.52	5
d | 193 to	83.48	5
e | 384 °C	0.0931	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	0.9175	5
t_e	0.8875	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.		

		Ref.
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	29.65	5
γ 30	28.61	5
40	27.59	5
Parachor [P] 20°C		
30		
40		
Sugd.	628.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 16

NAME	n-Pentadecyl cyanide		STRUCTURAL FORMULA
			$CH_3(CH_2)_{14}CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_{16}H_{31}N$	Molecular Weight 237.416

		Ref.
F.P. °C	30.	3
F.P. 100%		
B.P. °C 760 mm	336.	3
100	245.	5
30	204.	5
10	174.	5
1	123.	5
Pressure mm 25°C t_e	1608.2	5
Density g/ml 20°C	0.8303[a]	3
d_4^{t} 25 30	0.8266[a]	3
a	0.8451	5
b	-0.0_3740	5
Ref. Index n_D 20°C	1.4450[a]	3
25	1.4430[a]	3
30		
"C"	0.7102	4
MR (Obs.)	76.103	4
MR (Calc.) (nD-d/2)	75.838	5
Dielectric		
A | 204 to	6.92639	5
B | 411 °C	2067.3	5
C	175.	5
A* | 204 to	1.56656	5
B* | 401 °C	1968.1	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	380.72	5

		Ref.
dt/dP °C/mm 25°C BP	0.0722	5
t_e	0.0403	5
30 mm	1.0078	5
ΔHm cal/g		
ΔHv cal/g 25°C 30 mm	63.10	5
BP	51.37	5
t_e	47.83	5
t_e (d, e)	47.39	5
$\Delta Hv/T_e$	17.37	5
d | 204 to	81.32	5
e | 401 °C	0.0891	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	0.9154	5
t_e	0.8840	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.		

		Ref.
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	29.77	5
γ 30	28.72	5
40	27.70	5
Parachor [P] 20°C		
30		
40		
Sugd.	667.9	5
Exp. L. 1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VII. ALKYL CYANIDES

No. 17

NAME	n-Hexadecyl cyanide	STRUCTURAL FORMULA
		$CH_3(CH_2)_{15}CN$

Mole % Pur.	Ref. 3	Molecular Formula $C_{17}H_{33}N$	Molecular Weight 251.442

		Ref.
F.P. °C	34.	3
F.P. 100%		
B.P. °C		
760 mm	349.	3
100	256.	5
30	215.	5
10	183.	5
1	132.	5
Pressure mm 25°C		
t_e	1639.8	5
Density g/ml 20°C	0.8315[a]	
d_4^t 25	0.8279[a]	3
30		
a	0.8459	5
b	-0.0_3720	5
Ref. Index		
n_D 20°C	1.4467[a]	3
25	1.4447[a]	3
30		
"C"	0.7118	4
MR (Obs.)	80.749	4
MR (Calc.) (nD-d/2)	80.456	5
Dielectric		
A | 215 to	6.92601	5
B | 426 °C	2111.6	5
C	173.	5
A* | 215 to	1.58549	5
B* | 416 °C	2011.6	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	395.97	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0737	5
t_e	0.0406	5
30 mm	1.0296	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	60.83	5
BP	49.41	5
t_e	45.86	5
t_e (d, e)	45.41	5
$\Delta Hv/T_e$	17.23	5
d | 215 to	79.06	5
e | 416 °C	0.0850	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	0.9134	5
t_e	0.8808	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.		

		Ref.
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	29.86	5
σ 30	28.84	5
40	27.85	5
Parachor [P] 20°C		
30		
40		
Sugd.	706.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 18

NAME	n-Heptadecyl cyanide	STRUCTURAL FORMULA
		$CH_3(CH_2)_{16}CN$

Mole % Pur.	Ref. 3	Molecular Formula $C_{18}H_{36}N$	Molecular Weight 265.468

		Ref.
F.P. °C	41.	3
F.P. 100%		
B.P. °C		
760 mm	362.	3
100	267.	5
30	225.	5
10	193.	5
1	140.	5
Pressure mm 25°C		
t_e	1671.0	5
Density		
g/ml 20°C	0.8325[a]	3
d_4^t 25	0.8289[a]	3
30		
a	0.8469	5
b	-0.0_3720	5
Ref. Index		
n_D 20°C	1.4481[a]	3
25	1.4461[a]	3
30		
"C"	0.7130	4
MR (Obs.)	85.382	4
MR (Calc.) (nD-d/2)	85.074	5
Dielectric		
A 225 to	6.91773	5
B 441 °C	2147.6	5
C	170.	5
A* 225 to	1.59586	5
B* 431 °C	2047.4	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	411.27	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0753	5
t_e	0.0404	5
30 mm	1.0503	5
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
$\Delta Hv/T_e$	17.08	5
d 225 to	77.27	5
e 431 °C	0.0819	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	0.9115	5
t_e	0.8775	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.		

		Ref.
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	29.94	5
γ 30	28.91	5
40	27.92	5
Parachor [P]		
20°C		
30		
40		
Sugd.	745.9	5
Exp. L.1.%/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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VII. ALKYL CYANIDES

No. 19

NAME	n-Octadecyl cyanide Nonadecanenitrile	STRUCTURAL FORMULA $CH_3(CH_2)_{16}CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_{19}H_{37}N$ — Molecular Weight 279.494

		Ref.			Ref.			Ref.
F. P. °C	43.	3	dt/dP °C/mm 25°C			f g h	to °K	
F. P. 100%			BP	0.0767	5			
B. P. °C			t_e	0.0411	5	f' g' h'	to °K	
760 mm	374.	3	30 mm	1.0703	5			
100	277.	5	ΔHm cal/g					
30	234.	5				m n o	to °K	
10	202.	5	ΔHv cal/g 25°C					
1	148.	5	30 mm	56.96	5			
Pressure mm 25°C			BP	45.97	5	m' n' o'	to °K	
t_e	1699.8	5	t_e	42.38	5			
Density g/ml 20°C	0.8336[a]	3	t_e (d, e)	41.93	5	Surface tension dynes/cm. 20°C	30.03	5
d_4^t 25	0.8300[a]	3	ΔHv/T_e	16.96	5	σ 30	29.01	5
a	0.8480	5	d 234 to	75.36	5	40	28.01	5
b	-0.03720	5	e 445 °C	0.0786	5			
Ref. Index			d' to			Parachor [P]		
n_D 20°C	1.4495[a]	3	e' °C			20°C		
25	1.4475[a]	3	d_c g/ml			30		
30			v_c ml/g			40		
"C"	0.7142	4	t_c °C			Sugd.	784.9	5
MR (Obs.)	90.018	4	P_c mm					
MR (Calc.) (nD-d/2)	89.692	5	PV/RT 25°C			Exp. L.1.%/wt. u.		
Dielectric			30 mm	1.0000	5	Dispersion		
A 234 to	6.91636	5	BP	0.9097	5	Flash Point °C		
B 455 °C	2187.3	5	t_e	0.8746	5	Fire Point		
C	168.	5	t_c			M. Spec.		
A* 234 to	1.61207	5	ΔHc kcal/m			Ultra V.		
B* 445 °C	2086.5	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						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_v vap.					
Cryos. A°								
consts. B°								
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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 20

NAME	n-Nonadecyl cyanide			STRUCTURAL FORMULA
				$CH_3(CH_2)_{18}CN$
Mole % Pur.	Ref. 3	Molecular Formula $C_{20}H_{39}N$	Molecular Weight 293.520	

		Ref.
F.P. °C	50.	3
F.P. 100%		
B.P. °C 760 mm	386.	3
100	287.	5
30	244.	5
10	210.	5
1	156.	5
Pressure mm 25°C t_e	1728.3	5
Density g/ml 20°C	0.8344[a]	3
d_4^t 25 30	0.8309[a]	3
a	0.8484	5
b	-0.0_3700	5
Ref. Index n_D 20°C	1.4507[a]	3
25	1.4487[a]	3
30		
"C"	0.7153	4
MR (Obs.)	94.662	4
MR (Calc.) (nD-d/2)	94.310	5
Dielectric		
A 244 to	6.91505	5
B 470 °C	2226.9	5
C	166.	5
A* 244 to	1.62740	5
B* 460 °C	2125.7	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	439.56	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0782	5
t_e	0.0414	5
30 mm	1.0902	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	55.24	5
BP	44.47	5
t_e	40.87	5
t_e (d, e)	40.42	5
$\Delta Hv/T_e$	16.83	5
d 244 to	73.64	5
e 460 °C	0.0756	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	0.9079	5
t_e	0.8716	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.		

		Ref.
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	30.09	5
γ 30	29.09	5
40	28.12	5
Parachor [P] 20°C		
30		
40		
Sugd.	823.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

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.
F. P. °C	49.	3
F. P. 100%		
B. P. °C 760 mm	397.	3
100	296.	5
30	252.	5
10	219.	5
1	163.	5
Pressure mm 25°C t_e	1754.3	5
Density g/ml 20°C	0.8351[a]	3
d_4^t 25 30	0.8316[a]	3
a	0.8491	5
b	-0.0$_3$700	5
Ref. Index n_D 20°C	1.4518[a]	3
25	1.4498[a]	3
30		
"C"	0.7163	4
MR (Obs.)	99.312	4
MR (Calc.) (nD-d/2)	98.928	5
Dielectric		
A | 252 to	6.91263	5
B | 483 °C	2261.9	5
C	164.	5
A* | 252 to	1.64123	5
B* | 473 °C	2160.3	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	452.56	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.0795	5
t_e	0.0416	5
30 mm	1.1083	5
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	53.60	5
BP	43.04	5
t_e	39.44	5
t_e (d, e)	38.99	5
$\Delta Hv/T_e$	16.71	5
d | 252 to	71.97	5
e | 473 °C	0.0729	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	0.9062	5
t_e	0.8689	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.		

		Ref.
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	30.14	5
σ 30	29.14	5
40	28.17	5
Parachor [P] 20°C		
30		
40		
Sugd.	862.9	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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

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In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE VIII. THIAALKANES

No. 1

NAME	2-Thiapropane Methyl sulfide	STRUCTURAL FORMULA
Mole % Pur. 99.95	Ref. 3	Molecular Formula C_2H_6S	Molecular Weight 62.134	CH_3SCH_3

		Ref.
F. P. °C	-98.27	3'
F. P. 100%		
B. P. °C		
760 mm	37.34	3'
100	-10.420	4
30	-31.446	4
10	-47.397	5
1	-73.7	5
Pressure		
mm 25°C	484.9	4
t_e	834.5	5
Density		
g/ml 20°C	0.84825	3'
d_4^t 25	0.84230	3'
30	0.83634	3'
a	0.87235	4
b	-0.00114	4
Ref. Index		
n_D 20°C	1.43547	3'
25	1.43231	3'
30	1.42900	4
"C"	0.6812	4
MR (Obs.)	19.132	3'
MR (Calc.)	19.406	5
(nD-d/2)	1.01134	3'
Dielectric		
A | -50 to	6.93138	3
B | 130 °C	1081.587	3
C	229.746	3
A* | -31 to	1.19261	5
B* | 50 °C	1011.42	5
K c		
t_k | to		
t_x | °C		
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | 130 to	7.65631	5
Bc | t_c °C	1666.1	5
Cc	316.5	5
Cryos. A°	0.027	3'
consts. B°		
t_e °C	39.980	5

		Ref.
dt/dP		
°C/mm		
25°C	0.05374	4
BP	0.03767	4
t_e	0.03500	5
30 mm	0.5263	4
ΔHm cal/g		
ΔHv cal/g		
25°C	105.74	5
30 mm	118.39	5
BP	103.18	5
t_e	102.52	5
t_e (d, e)	102.55	5
$\Delta Hv/T_e$	20.43	5
d | -35 to	111.39	5
e | 45 °C	0.2198	5
d' | to		
e' | °C		
d_c g/ml	0.309	5
v_c ml/g	3.236	5
t_c °C	231.	3
P_c mm	41040.	5
PV/RT		
25°C	0.9710	5
30 mm	1.0000	5
BP	0.9580	5
t_e	0.9577	5
t_c	0.264	4
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.289	3'
25	0.279	3'
30	0.266	3'
B^v | 10 to	321.1	4
A^v | 40 °C	2.36574	4
(B^v) |		
(A^v) |		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		24.48	5
γ 30		23.06	5
40		21.65	5
Parachor [P]			
20°C			
30			
40			
S = 51	Sugd.	163.2	5
Exp. L.1.%/wt. u.			
Dispersion		122.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.;
3' API Res. Proj. 44 (1953)

No. 2

NAME	2-Thiabutane Ethyl methyl sulfide	STRUCTURAL FORMULA
Mole % Pur. 99.96	Ref. 3	Molecular Formula C_3H_8S	Molecular Weight 76.160	$CH_3SCH_2CH_3$

		Ref.			Ref.			Ref.
F.P. °C	-105.91	3	dt/dP °C/mm			f | | to		
F.P. 100%			25°C	0.1432	4	g | __ °K		
B.P. °C			BP	0.04104	4	h		
760 mm	66.653	3'	t_e	0.03540	5	f' | | to		
100	14.67	3'	30 mm	0.5740	4	g' | __ °K		
30	-8.252	4	ΔHm cal/g	17.50	3'	h'		
10	-25.65	4	ΔHv cal/g			m | | to		
1	-54.35	5	25°C	99.88	3'	n | __ °K		
Pressure			30 mm	105.84	4	o		
mm 25°C	160.0	3'	BP	92.63	3	m' | | to		
t_e	917.9	5	t_e	91.63	5	n' | __ °K		
Density			t_e (d, e)	91.59	5	o'		
g/ml 20°C	0.84221	3	ΔHv/T_e	20.18	5	Surface tension		
d_4^t 25	0.83679	3	d | 10 to	104.23	4	dynes/cm. 20°C	24.92	3
30	0.83145	3	e | __80 °C	0.1741	4	γ 30	24.22	3
a	0.86395	4	d' | to			40	23.43	3
b	-0.00106	4	e' | °C			Parachor [P]		
Ref. Index			d_c g/ml	0.289	5	20°C	202.19	4
n_D 20°C	1.44035	3	v_c ml/g	3.46	5	30	203.2	4
25	1.43737	3	t_c °C	259.0	5	40	201.7	4
30	1.43437	3	P_c mm	33370.	5	Sugd.	201.8≠	5
"C"	0.6933	4	PV/RT			Exp. L.1.%/wt. u.		
MR (Obs.)	23.849	4	25°C	0.9864	4	Dispersion		
MR (Calc.)	24.024	5	30 mm	0.9950	4	Flash Point °C		
(nD-d/2)	1.01925	4	BP	0.9588	4	Fire Point		
Dielectric			t_e	0.9539	5	M Spec.		
A | -20 to	6.93849	3'	t_c	0.255	5	Ultra V.		3
B | 130 °C	1182.562	3'	ΔHc kcal/m			X-Ray Dif.		
C	224.784	3'	ΔHf			Infrared		3
A* | -10 to	1.24625	4	ΔFf			Solubility in +		
B* | 100 °C	1105.03	4	Viscosity centistokes			Acetone		
K			η 20 °C	0.376	3	Carbon tet.		
c			25	0.357	3	Benzene		
t_k | to			30	0.340	3	Ether		
t_x | °C			B^v | 10 to	388.57	4	n-Heptane		
A' | to			A^v | 45 °C	2.24992	4	Ethanol		
B' __ °C			(B^v) | to			Water		
C'			(A^v) | °C			Water in		
A'* to			c_p liq. °K					
B'* °C			c_p vap. °K					
Ac | 130 to	7.39140	5	c_v vap.					
Bc | t_c °C	1525.8	5						
Cc	273.0	5						
Cryos. A° consts. B°	0.04	3						
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' JACS 73, 261 (1951), D. W. Scott et al.

TABLE VIII. THIAALKANES

No. 3

NAME	3-Methyl-2-thiabutane Methyl isopropyl sulfide	STRUCTURAL FORMULA
Mole % Pur. 99.8	Ref. 3	Molecular Formula $C_4H_{10}S$
Molecular Weight 90.186		$CH_3SCH(CH_3)_2$

		Ref.
F. P. °C	-101.51	3'
F. P. 100%		
B. P. °C 760 mm	84.75	3'
100	29.78	5
30	5.53	4
10	-12.92	5
1	-43.71	5
Pressure mm 25°C	80.53	5
t_e	965.0	5
Density g/ml 20°C	0.8291	3'
d_4^{t} 25	0.8251	3'
30	0.8208	4
a	0.8447	4
b	-0.0_3378	4
Ref. Index n_D 20°C	1.4392	3'
25	1.4362	3'
30	1.4341	4
"C"	0.7025	4
MR (Obs.)	28.62	3'
MR (Calc.)	28.642	5
(nD-d/2)	1.0246	3'
Dielectric		
A | 5 to	6.89898	3
B | 140 °C	1231.151	3
C	221.573	3
A* | 0 to	1.27473	5
B* | 120 °C	1154.30	5
K		
c		
t_k | to		
t_x | °C		
A' | -50 to	7.24056	5
B' | 5 °C	1391.39	5
C'	235.88	5
A'* -25 to	1.56965	5
B'* 50 °C	1298.22	5
Ac | 140 to	7.32650	5
Bc | t_c °C	1559.8	5
Cc	267.0	5
Cryos. A° consts. B°	0.036	3'
t_e °C	92.94	5

		Ref.
dt/dP °C/mm		
25°C	0.2631	5
BP	0.04357	5
t_e	0.03616	5
30 mm	0.6064	4
ΔHm cal/g		
ΔHv cal/g		
25°C	92.14	5
30 mm	94.11	5
BP	81.45	5
t_e	80.19	5
t_e (d, e)	80.12	5
$\Delta Hv/T_e$	19.75	5
d | 5 to	94.99	5
e | 100 °C	0.1600	5
d' | to		
e' | °C		
d_c g/ml	0.295	5
v_c ml/g	3.39	5
t_c °C	276.4	5
P_c mm	28580.	5
PV/RT		
25°C	0.9961	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9473	5
t_c	0.255	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		24.15	5
γ 30		23.17	5
40		22.31	5
Parachor [P] 20°C			
30			
40			
S = 51 Sugd.		241.2	5
Exp. L. l. %/wt. u.			
Dispersion		117.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.;
3' API Res. Proj. 44 (1953)

No. 4

NAME	3-Thiapentane Diethyl sulfide, Ethyl sulfide	STRUCTURAL FORMULA $CH_3CH_2SCH_2CH_3$
Mole % Pur. 99.995	Ref. 3	Molecular Formula $C_4H_{10}S$ — Molecular Weight 90.186

		Ref.
F.P. °C	-103.99	3
F.P. 100%		
B.P. °C		
760 mm	92.100	3
100	36.561	4
30	12.08	4
10	-6.490	4
1	-37.1	5
Pressure		
mm 25°C	58.37	4
t_e	985.8	5
Density		
g/ml 20°C	0.83623	3'
d_4^t 25	0.83120	3'
30	0.82625	3'
a	0.85633	4
b	-0.0_3994	4
Ref. Index		
n_D 20°C	1.44298	3'
25	1.44017	3'
30	1.43734	3'
"C"	0.7022	4
MR (Obs.)	28.590	4
MR (Calc.)	28.642	5
(nD-d/2)	1.02487	4
Dielectric		
A 0 to	6.92836	3
B 150 °C	1257.833	3
C	218.662	3
A* 0 to	1.29509	4
B* 111 °C	1179.80	4
K		
c		
t_k to		
t_x °C		
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac 140 to	7.54390	5
Bc t_c °C	1753.9	5
Cc	285.6	5
Cryos. A* consts. B*	0.0500	3
t_e °C	101.026	5

		Ref.
dt/dP °C/mm		
25°C	0.3512	4
BP	0.04387	4
t_e	0.03578	5
30 mm	0.6361	4
ΔHm cal/g		
ΔHv cal/g		
25°C	95.07	4
30 mm	97.55	4
BP	84.17	3
t_e	82.80	5
t_e (d, e)	82.69	5
$\Delta Hv/T_e$	19.98	5
d 10 to	99.13	5
e 110 °C	0.1625	5
d' to		
e' °C		
d_c g/ml	0.260	5
v_c ml/g	3.846	5
t_c °C	272.8	5
P_c mm	25030.	5
PV/RT		
25°C	0.9946	4
30 mm	1.0001	4
BP	0.9545	4
t_e	0.9468	4
t_c	0.255	5
ΔHc kcal/m		
ΔHf	-28.5	3
ΔFf		
Viscosity centistokes		
η 20 °C	0.442	3'
25	0.419	3'
30	0.398	3'
B^v 10 to	404.84	4
A^v 40 °C	2.26466	4
(B^v) to		
(A^v) °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		25.2	3'
γ 30		24.5	3'
40		23.9	3'
Parachor [P]			
20°C		241.70	4
30		241.50	4
40		241.43	4
Sugd.		241.2≠	5
Exp. L.1.%/wt. u.			
Dispersion			
Flash Point °C			
Fire Point			
M Spec.			
Ultra V.			
X-Ray Dif.			
Infrared			3
Solubility in +			
Acetone			
Carbon tet.			
Benzene			
Ether			
n-Heptane			
Ethanol			
Water			
Water in			

≠ 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 Methyl n-propyl sulfide	STRUCTURAL FORMULA
Mole % Pur.	Ref.	Molecular Formula $C_4H_{10}S$	Molecular Weight 90.186	$CH_3S(CH_2)_2CH_3$

		Ref.
F.P. °C	-112.97	3'
F.P. 100%		
B.P. °C		
760 mm	95.54	3'
100	39.51	3'
30	14.778	4
10	-4.09	5
1	-35.65	5
Pressure		
mm 25°C	50.885	5
t_e	996.0	5
Density		
g/ml 20°C	0.8424	3'
d_4^t 25	0.8375	3'
30	0.8326	4
a	0.8620	4
b	-0.0_397	4
Ref. Index		
n_D 20°C	1.4442	3'
25	1.4415	3'
30	1.4387	4
"C"	0.6989	4
MR (Obs.)	28.45	3'
MR (Calc.)	28.642	5
(nD-d/2)	1.0264	3'
Dielectric		
A 14 to	6.95545	3
B 155 °C	1284.334	3
C	219.662	3
A* 14 to	1.31639	5
B* 125 °C	1204.6	5
K		
c		
t_k to		
t_x °C		
A' -40 to	7.30058	5
B' 14 °C	1451.26	5
C'	234.43	5
A'* -25 to	1.65209	5
B'* 14 °C	1364.2	5
Ac to		
Bc t_c °C		
Cc		
Cryos. A°	0.044	3'
consts. B°		
t_e °C F	104.89	5

		Ref.
dt/dP		
°C/mm		
25°C	0.3958	5
BP	0.04420	4
t_e	0.03576	5
30 mm	0.6195	4
ΔHm cal/g		
ΔHv cal/g		
25°C	97.29	5
30 mm	98.32	5
BP	85.12	5
t_e	83.73	5
t_e (d, e)	83.59	5
$\Delta Hv/T_e$	19.97	5
d 14 to	100.73	5
e 105 °C	0.1634	5
d' to		
e' °C		
d_c g/ml	0.28	5
v_c ml/g	3.57	5
t_c °C	301.0	5
P_c mm	31000.	5
PV/RT		
25°C	0.9984	5
30 mm	1.0000	5
BP	0.9545	5
t_e	0.9468	5
t_c	0.279	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity		
centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

		Ref.
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	25.74	5
σ 30	24.55	5
40	23.47	5
Parachor [P]		
20°C		
30		
40		
S = 51 Sugd.	241.2	5
Exp. L.1.%/wt. u.		
Dispersion	113.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.; 3' API Res. Proj. 44 (1953)

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.; Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 6

NAME	2-Methyl-3-thiapentane	STRUCTURAL FORMULA
		$CH_3CH(CH_3)SCH_2CH_3$

Mole % Pur. 99.85	Ref. 3	Molecular Formula $C_5H_{12}S$	Molecular Weight 104.206

		Ref.
F.P. °C	-122.19	3'
F.P. 100%		
B.P. °C		
760 mm	107.38	3
100	49.32	5
30	23.79	4
10	4.35	5
1	-28.06	5
Pressure		
mm 25°C	31.951	5
t_e	1022.63	5
Density		
g/ml 20°C	0.8246	3'
d_4^t 25	0.8199	3'
30	0.8151	4
a	0.8438	4
b	-0.0_395	4
Ref. Index		
n_D 20°C	1.4407	3'
25	1.4382	3'
30	1.4353	4
"C"	0.7086	4
MR (Obs.)	33.350	3'
MR (Calc.)	33.260	5
(nD-d/2)	1.0284	3'
Dielectric		
A | 23 to	6.89130	3
B | 180 °C	1293.058	3
C	215.041	3
A* | 23 to	1.31444	5
B* | 140 °C	1214.93	5
K		
c		
t_k | to		
t_x | °C		
A' | -30 to	7.23240	5
B' | 23 °C	1461.12	5
C'	230.09	5
A'* -20 to	1.65195	5
B'* 23 °C	1377.2	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C F	118.086	5

		Ref.
dt/dP		
°C/mm		
25°C	0.6053	5
BP	0.04594	4
t_e	0.36448	5
30 mm	0.6386	4
ΔHm cal/g		
ΔHv cal/g		
25°C	87.70	5
30 mm	87.80	5
BP	75.04	5
t_e	73.58	5
t_e (d, e)	73.41	5
$\Delta Hv/T_e$	19.60	5
d | 23 to	91.43	5
e | 120 °C	0.1526	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C	294.0	5
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9486	5
t_e	0.9394	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.		

			Ref.
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		24.15	5
γ 30		23.05	5
40		21.97	5
Parachor [P]			
20°C			
30			
40			
Sugd.		280.2	5
Exp. L.1.%/wt. u.			
Dispersion		117.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.;
3' API Res. Proj. 44 (1953)

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VIII. THIAALKANES

No. 7

NAME	3-Thiahexane	STRUCTURAL FORMULA
		$CH_3CH_2S(CH_2)_2CH_3$

Mole % Pur. 99.8	Ref. 3	Molecular Formula $C_5H_{12}S$	Molecular Weight 104.206

		Ref.
F.P. °C	-117.04	3'
F.P. 100%		
B.P. °C 760 mm	118.50	3
100	59.40	5
30	33.35	4
10	13.49	5
1	-19.70	5
Pressure mm 25°C	19.308	5
t_e	1052.97	5
Density g/ml 20°C	0.8370	3'
d_4^t 25	0.8324	3'
30	0.8278	4
a	0.8555	4
b	-0.0_392	4
Ref. Index n_D 20°C	1.4462	3'
25	1.4435	3'
30	1.4410	4
"C"	0.7063	4
MR (Obs.)	33.212	4
MR (Calc.)	33.260	5
(nD-d/2)	1.0277	3'
Dielectric		
A | 33 to	6.93380	3
B | 200 °C	1341.554	3
C	212.507	3
A* | 33 to	1.34709	5
B* | 140 °C	1262.10	5
K		
c		
t_k | to		
t_x | °C		
A' | -20 to	7.27757	5
B' | 33 °C	1515.91	5
C'	227.99	5
A'* -10 to	1.64943	5
B'* 33 °C	1420.6	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C F	130.48	5

		Ref.
dt/dP °C/mm		
25°C	0.9499	5
BP	0.04667	4
t_e	0.03617	5
30 mm	0.6522	4
ΔHm cal/g		
ΔHv cal/g		
25°C	92.48	5
30 mm	91.58	5
BP	78.17	5
t_e	76.50	5
t_e (d, e)	76.32	5
$\Delta Hv/T_e$	19.75	5
d | 33 to	96.83	5
e | 130 °C	0.1575	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9476	5
t_e	0.9375	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		25.64	5
γ 30		24.54	5
40		23.46	5
Parachor [P] 20°C			
30			
40			
S = 51 Sugd.		280.2	5
Exp. L.1.%/wt. u.			
Dispersion		116.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al; 3' API Res. Proj. 44 (1953)

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 8

NAME	2, 4-Dimethyl-3-thiapentane iso-Propyl sulfide	STRUCTURAL FORMULA $CH_3CHSCHCH_3$ CH_3 CH_3
Mole % Pur. 99.93	Ref. 3	Molecular Formula $C_6H_{14}S$ — Molecular Weight 118.238

		Ref.
F.P. °C	-78.08	3'
F.P. 100%		
B.P. °C		
760 mm	120.02	3
100	59.90	5
30	33.49	4
10	13.40	5
1	-20.09	5
Pressure		
mm 25°C	19.262	5
t_e	1050.80	5
Density		
g/ml 20°C	0.8146	3'
d_4^t 25	0.8104	3'
30	0.8062	4
a	0.8314	4
b	-0.0_384	4
Ref. Index		
n_D 20°C	1.4388	3'
25	1.4362	3'
30	1.4336	4
"C"	0.7145	4
MR (Obs.)	38.16	3'
MR (Calc.)	37.878	5
(nD-d/2)	1.0315	3'
Dielectric		
A | 33 to	6.87419	3
B | 180 °C	1328.624	3
C	212.684	3
A* | 33 to	1.34933	5
B* | 150 °C	1250.83	5
K		
c		
t_k | to		
t_x | °C		
A' | -20 to	7.21420	5
B' | 33 °C	1501.30	5
C'	228.19	5
A'* -10 to	1.64315	5
B'* 33 °C	1406.5	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C F	132.174	5

		Ref.
dt/dP		
°C/mm		
25°C	0.9625	5
BP	0.04761	4
t_e	0.03699	5
30 mm	0.6603	4
ΔHm cal/g		
ΔHv cal/g		
25°C	80.62	5
30 mm	79.80	5
BP	67.69	5
t_e	66.19	5
t_e (d, e)	65.99	5
$\Delta Hv/T_e$	19.31	5
d | 33 to	84.49	5
e | 135 °C	0.1400	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9425	5
t_e	0.9317	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.		

		Ref.
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	23.36	5
γ 30	22.41	5
40	21.49	5
Parachor [P]		
20°C		
30		
40		
Sugd.	319.1	5
Exp. L.l.%/wt. u.		
Dispersion	116.	3'
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: Lit.

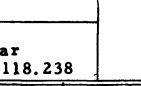
PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952) P. T. White et al.;
3' API Res. Proj. 44 (1953)

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 9

NAME	2,2-Dimethyl-3-thiapentane tert-Butyl ethyl sulfide	STRUCTURAL FORMULA
Mole % Pur. 99.97	Ref. 3	Molecular Formula $C_6H_{14}S$ — Molecular Weight 118.238



		Ref.
F.P. °C	-88.95	3'
F.P. 100%		
B.P. °C		
760 mm	120.41	3
100	59.90	5
30	33.36	4
10	13.18	5
1	-20.42	5
Pressure		
mm 25°C	19.437	5
t_e	1049.65	5
Density		
g/ml 20°C	0.8206	3'
d_4^t 25	0.8161	3'
30	0.8116	4
a	0.8386	4
b	-0.0_390	4
Ref. Index		
n_D 20°C	1.4417	3'
25	1.4390	3'
30	1.4363	4
"C"		
MR (Obs.)	38.10	3'
MR (Calc.)	37.878	5
(nD-d/2)	1.0314	3'
Dielectric	0.7279	4
A 33 to	6.85386	3
B 180 °C	1324.732	3
C	213.020	3
A* 33 to	1.33128	5
B* 150 °C	1247.39	5
K		
c		
t_k to		
t_x °C		
A' -20 to	7.19260	5
B' 33 °C	1496.91	5
C'	228.54	5
A'* -10 to	1.62391	5
B'* 33 °C	1402.6	5
Ac to		
Bc t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C F	132.609	5

		Ref.
dt/dP		
°C/mm		
25°C	0.9595	5
BP	0.04802	4
t_e	0.03731	5
30 mm	0.6634	4
ΔHm cal/g		
ΔHv cal/g		
25°C	80.15	5
30 mm	79.37	5
BP	67.20	5
t_e	65.70	5
t_e (d, e)	65.49	5
$\Delta Hv/T_e$	19.14	5
d 33 to	84.03	5
e 135 °C	0.1398	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9406	5
t_e	0.9297	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.		

			Ref.
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		24.08	5
γ 30		23.05	5
40		22.04	5
Parachor [P]			
20°C			
30			
40			
Sugd.		319.2	5
Exp. L.1.%/wt. u.			
Dispersion		116.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.; 3' API Res. Proj. 44 (1953)

No. 10

NAME	2-Methyl-3-thiahexane	STRUCTURAL FORMULA
		$CH_3CHS(CH_2)_2CH_3$ CH_3

Mole % Pur.	Ref.	Molecular Formula $C_6H_{14}S$	Molecular Weight 118.238

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	132.05	3
100	70.80	5
30	43.81	4
10	23.23	5
1	-11.12	5
Pressure		
mm 25°C	11.067	5
t_e	1082.89	5
Density		
g/ml 20°C	0.8269	3'
d_4^t 25	0.8225	3'
30	0.8181	4
a	0.8445	4
b	-0.0$_3$88	4
Ref. Index		
n_D 20°C	1.4440	3'
25	1.4414	3'
30	1.4390	4
"C"	0.7116	4
MR (Obs.)	37.98	3'
MR (Calc.)	37.878	5
(nD-d/2)	1.0306	3'
Dielectric		
A 43 to	6.92577	3
B 190 °C	1385.492	3
C	210.476	3
A* 43 to	1.39075	5
B* 160 °C	1306.21	5
K		
c		
t_k to		
t_x °C		
A' -10 to	7.26904	5
B' 43 °C	1565.56	5
C'	226.50	5
A'* 0 to	1.68874	5
B'* 43 °C	1469.1	5
Ac to		
Bc t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C F	145.583	5

		Ref.
dt/dP		
°C/mm		
25°C	1.5858	5
BP	0.04839	4
t_e	0.0367	5
30 mm	0.6756	4
ΔHm cal/g		
ΔHv cal/g		
25°C	85.17	5
30 mm	83.33	5
BP	70.63	5
t_e	68.93	5
t_e (d, e)	68.68	5
ΔHv/T_e	19.46	5
d 43 to	89.63	5
e 145 °C	0.1439	5
d' 20 to	87.61	5
e' 43 °C	0.0978	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9411	5
t_e	0.9294	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.		

			Ref.
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		24.80	5
γ 30		23.76	5
40		22.75	5
Parachor [P]			
20°C			
30			
40			
Sugd.		319.1	5
Exp. L.1.%/wt. u.			
Dispersion		115.	3'
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: 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
		$CH_3CH_2SCH(CH_3)CH_2CH_3$

Mole % Pur.	Ref.	Molecular Formula $C_6H_{14}S$	Molecular Weight 118.238

		Ref.			Ref.			Ref.
F. P. °C			dt/dP °C/mm			f | | to		
F. P. 100%			25°C	1.6721	5	g | | °K		
B. P. °C			BP	0.04864	4	h		
760 mm	133.65	3	t_e	0.0368	5	f' | | to		
100	72.05	5	30 mm	0.6802	4	g' | | °K		
30	44.89	4	ΔHm cal/g			h'		
10	24.16	5				m | | to		
1	-10.45	5	ΔHv cal/g			n | | °K		
Pressure			25°C	85.22	5	o		
mm 25°C	10.490	5	30 mm	83.33	5	m' | | to		
t_e	1086.00	5	BP	70.74	5	n' | | °K		
Density			t_e	69.04	5	o'		
g/ml 20°C	0.8353	3'	t_e (d, e)	68.79	5	Surface tension		
d_4^{t} 25	0.8307	3'	$\Delta Hv/T_e$	19.41	5	dynes/cm. 20°C	25.83	5
30	0.8261	4	d | 44 to	89.69	5	γ 30	24.71	5
a	0.8537	4	e | 145 °C	0.1418	5	40	23.62	5
b	-0.0_392	4	d' | 20 to	87.59	5	Parachor [P]		
Ref. Index			e' | 44 °C	0.0950	5	20°C		
n_D 20°C	1.4477	3'	d_c g/ml			30		
25	1.4451	3'	v_c ml/g			40		
30	1.4425	4	t_c °C			S = 51 Sugd.	319.1	5
"C"	0.7100	4	P_c mm			Exp. L. l. %/wt. u.		
MR (Obs.)	37.87	3'	PV/RT			Dispersion	116.	3'
MR (Calc.)	37.878	5	25°C	1.0000	5	Flash Point °C		
(nD-d/2)	1.0300	3'	30 mm	1.0000	5	Fire Point		
Dielectric			BP	0.9400	5	M. Spec.		
A | 44 to	6.93856	3	t_e	0.9281	5	Ultra V.		
B | 190 °C	1401.462	3	t_c			X-Ray Dif.		
C	211.732	3	ΔHc kcal/m			Infrared		
A* | 44 to	1.40236	5	ΔHf			Solubility in +		
B* | 160 °C	1321.52	5	ΔFf			Acetone		
K			Viscosity centistokes			Carbon tet.		
c			η °C			Benzene		
t_k | | to						Ether		
t_x | | °C						n-Heptane		
A' | -10 to	7.28263	5				Ethanol		
B' | 44 °C	1583.61	5	B^v | | to			Water		
C'	227.90	5	A^v | | °C			Water in		
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			c_p vap. °K					
Cc			c_v vap.					
Cryos. A° consts. 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
		$CH_3CH_2SCH_2CHCH_3$ with CH_3

Mole % Pur.	Ref.	Molecular Formula $C_6H_{14}S$	Molecular Weight 118.238

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	134.22	3
100	72.64	5
30	45.50	4
10	24.81	5
1	-9.74	5
Pressure mm 25°C	10.108	5
t_e	1087.50	5
Density g/ml 20°C	0.8306	2
d_4^t 25	0.8261	2
30	0.8216	4
a	0.8486	4
b	-0.0$_3$9	4
Ref. Index n_D 20°C	1.4450	2
25	1.4424	2
30	1.4398	4
"C"	0.5897	4
MR (Obs.)	37.89	2
MR (Calc.)	37.878	5
(nD-d/2)	1.0297	2
Dielectric		
A | 45 to	6.92643	3
B | 190 °C	1393.507	3
C	210.226	3
A* | 45 to	1.39104	5
B* | 160 °C	1314.27	5
K		
c		
t_x | to		
t_x | °C		
A' | -10 to	7.26974	5
B' | 45 °C	1574.62	5
C'	226.34	5
A'* 10 to	1.69045	5
B'* 45 °C	1478.5	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	148.002	5

		Ref.
dt/dP °C/mm		
25°C	1.7235	5
BP	0.04865	4
t_e	0.0368	5
30 mm	0.6793	4
ΔHm cal/g		
ΔHv cal/g		
25°C	85.80	5
30 mm	83.76	5
BP	70.93	5
t_e	69.19	5
t_e (d, e)	68.94	5
$\Delta Hv/T_e$	19.42	5
d | 45 to	90.34	5
e | 150 °C	0.1446	5
d' | 20 to	88.29	5
e' | 45 °C	0.0995	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9401	5
t_e	0.9280	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.		

		Ref.
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	25.29	5
γ 30	24.21	5
40	23.17	5
Parachor [P]		
20°C		
30		
40		
S = 51 Sugd.	319.2	5
Exp. L.1.%/wt. u.		
Dispersion	114.	3
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VIII. THIAALKANES

No. 13

NAME	4-Thiaheptane Di-n-propyl sulfide	STRUCTURAL FORMULA
Mole % Pur.	Ref. Molecular Formula $C_6H_{14}S$ Molecular Weight 118.238	$CH_3(CH_2)_2S(CH_2)_2CH_3$

		Ref.			Ref.			Ref.
F. P. °C	-102.5	3'	dt/dP °C/mm			f g h	to °K	
F. P. 100%			25°C	2.5434	5			
B. P. °C			BP	0.04910	5			
760 mm	142.83	3	t_e	0.0365	5	f' g' h'	to °K	
100	80.65	5	30 mm	0.6866	4			
30	53.22	4	ΔHm cal/g					
10	32.31	5						
1	-2.63	5	ΔHv cal/g			m n o	to °K	
Pressure			25°C	90.97	5			
mm 25°C	6.523	5	30 mm	86.95	5			
t_e	1111.04	5	BP	73.27	5			
Density			t_e	71.33	5	m' n' o'	to °K	
g/ml 20°C	0.8377	3'	t_e (d, e)	70.89	5			
d_4^t 25	0.8332	3'	ΔHv/T_e	19.57	5			
30	0.8287	4				Surface tension		
a	0.8557	4	d 53 to	95.13	5	dynes/cm. 20°C	26.13	5
b	-0.0_390	4	e 150 °C	0.1538	5	γ 30	25.02	5
			d' 20 to	94.53	5	40	23.95	5
Ref. Index			e' 53 °C	0.1424	5			
n_D 20°C	1.4487	3'				Parachor [P]		
25	1.4461	3'	d_c g/ml			20°C		
30	1.4436	4	v_c ml/g			30		
			t_c °C			40		
"C"	0.7095	4	P_c mm			Sugd.	319.1	5
MR (Obs.)	37.84	3'						
MR (Calc.)	37.878	5	PV/RT			Exp. L. 1. %/wt. u.		
(nD-d/2)	1.0298	3'	25°C	1.0000	5	Dispersion	113.	3'
			30 mm	1.0000	5			
Dielectric			BP	0.9397	5	Flash Point °C		
			t_e	0.9279	5	Fire Point		
A 53 to	6.93897	3	t_c					
B 195 °C	1414.975	3				M. Spec.		
C	205.846	3	ΔHc kcal/m			Ultra V.		
			ΔHf			X-Ray Dif.		
A* 53 to	1.3980	5	ΔFf			Infrared		
B* 165 °C	1335.9	5						
K			Viscosity			Solubility in +		
c			centistokes			Acetone	∞	
t_k to			η °C			Carbon tet.	∞	
t_x °C						Benzene	∞	
						Ether	∞	
A' 0 to	7.28307	5				n-Heptane	∞	
B' 53 °C	1598.88	5	B^v to			Ethanol	∞	
C'	222.17	5	A^v °C			Water		
			(B^v) to			Water in		
A'* 20 to	1.70068	5	(A^v) °C					
B'* 53 °C	1503.5	5						
Ac to			c_p liq. °K					
Bc t_c °C								
Cc			c_p vap. °K					
Cryos. A*	0.050	3^2	c_v vap.					
consts. B*								
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' API Res. Proj. 44 (1953); 3^2 Private communication from Am. Pet. Inst. Res. Proj. 48 A, Bureau of Mines, Laramie, Wyo.

No. 14

NAME	3-Thiaheptane		STRUCTURAL FORMULA
			$CH_3CH_2S(CH_2)_3CH_3$
Mole % Pur. 99.8	Ref. 3	Molecular Formula $C_6H_{14}S$	Molecular Weight 118.238

		Ref.
F.P. °C	-95.13	3'
F.P. 100%		
B.P. °C		
760 mm	144.24	3'
100	81.86	5
30	54.33	4
10	33.34	5
1	-1.73	5
Pressure mm 25°C	6.134	5
t_e	1114.3	5
Density		
g/ml 20°C	0.8376	3'
d_4^t 25	0.8332	3'
30	0.8288	4
a	0.8552	4
b	-0.0388	4
Ref. Index		
n_D 20°C	1.4491	3'
25	1.4463	3'
30	1.4435	4
"C"	0.7101	4
MR (Obs.)	37.87	3'
MR (Calc.)	37.878	5
(nD-d/2)	1.0303	3'
Dielectric		
A | 54 to	6.94424	3
B | 210 °C	1422.869	3
C	205.927	3
A* | 54 to	1.40249	5
B* | 165 °C	1343.69	5
K		
c		
t_k | to		
t_x | °C		
A' | 0 to	7.28867	5
B' | 54 °C	1607.7	5
C'	222.3	5
A'* 10 to	1.70873	5
B'* 54 °C	1512.9	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A*		
consts. B*		
t_e °C	159.17	5

		Ref.
dt/dP		
°C/mm		
25°C	2.6932	5
BP	0.04924	4
t_e	0.03651	5
30 mm	0.6891	4
ΔHm cal/g		
ΔHv cal/g		
25°C	90.48	5
30 mm	87.23	5
BP	73.51	5
t_e	71.55	5
t_e (d, e)	71.23	5
$\Delta Hv/T_e$	19.56	5
d | 54 to	95.52	5
e | 155 °C	0.1526	5
d' | 20 to	93.25	5
e' | 54 °C	0.1108	5
d_c g/ml	0.267	5
v_c ml/g	3.738	5
t_c °C	345.	5
P_c mm	23000.	5
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9392	5
t_e	0.9263	5
t_c	0.264	5
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.		

			Ref.
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		26.14	5
γ 30		25.06	5
40		24.02	5
Parachor [P]			
20°C			
30			
40			
S = 51 Sugd.		319.2	5
Exp. L.1.%/wt. u.			
Dispersion		112.	3'
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: Lit.

PURIFICATION: Lit.

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.; 3' API Res. Proj. 44 (1953)

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VIII. THIAALKANES

No. 15

NAME	Ethanethiol Ethyl mercaptan	STRUCTURAL FORMULA
Mole % Pur. 99.98	Ref. 3'	Molecular Formula C_2H_6S
		Molecular Weight 62.134

CH_3-CH_2-SH

		Ref.
F.P. °C	-147.89	3'
F.P. 100%		
B.P. °C 760 mm	35.0	3'
100	-12.379	4
30	-33.295	4
10	-49.174	4
1	-75.384	4
Pressure mm 25°C	527.3	4
t_e	835.7	5
Density g/ml 20°C	0.83914	3
d_4^t 25	0.83316	3
30	0.82726	4
a	0.86324	4
b	-0.00113	4
Ref. Index n_D 20°C	1.43105	3
25	1.42779	3
30	1.42456	4
"C"	0.6820	4
MR (Obs.)	19.177	4
MR (Calc.)	19.126	5
(nD-d/2)	1.01121	4
Dielectric		
A | -40 to	6.95206	3'
B | 100 °C	1084.531	3'
C	231.385	3'
A* | -40 to	1.11667	4
B* | 70 °C	988.69	4
K		
c		
t_k | to		
t_x | °C		
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | 100 to	7.49061	5
Bc | t_c °C	1470.4	5
Cc	285.8	5
Cryos. A° consts. B°	0.0381	3'
t_e °C	37.73	5

		Ref.
dt/dP °C/mm		
25°C	0.04992	4
BP	0.03739	5
t_e	0.03474	5
30 mm	0.5238	4
ΔHm cal/g	19.14	3'
ΔHv cal/g		
25°C	105.03	3'
30 mm	117.14	5
BP	103.01	3'
t_e	102.46	5
t_e (d, e)	102.45	5
$\Delta Hv/T_e$	20.48	5
d | -35 to	110.25	4
e | 45 °C	0.2069	4
d' | to		
e' | °C		
d_c g/ml	0.3252	5
v_c ml/g	3.075	3²
t_c °C	225.5	3²
P_c mm	41192.	3²
PV/RT		
25°C	0.9692	4
30 mm	1.0000	5
BP	0.9665	4
t_e	0.9660	5
t_c	0.253	4
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.297	3
25	0.283	3
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. 20 °C	0.276	
40	0.2887	
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm.	20°C	23.5	3
γ	30	22.8	3
	40	21.48	5
Parachor [P]	20°C	163..	4
	25	163.3	4
	40		
	Sugd.	163.2 ≠	
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			

≠S for alkyl mercaptans = 51.0

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

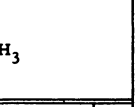
SOURCE: API

PURIFICATION: API

LITERATURE REFERENCES: 3 Private communication from Am. Pet. Inst., Res. Proj. 48A, Bureau of Mines, Laramie, Wyo. 3' JACS 74, 2801(1952), H. L. Finke et al.; 3² Ind. Eng. 34, 521(1942) H. P. Meissner and E. M. Redding.

No. 16

NAME	2-Methyl-2-propanethiol	STRUCTURAL FORMULA
Mole % Pur. 99.96	Molecular Formula $C_4H_{10}S$	Molecular Weight 90.186



		Ref.
F.P. °C	+1.26	2
F.P. 100%		
B.P. °C		
760 mm	64.22	2
100	11.687	3
30	-11.308	4
10	-28.57	3
1	-57.0	4
Pressure		
mm 25°C	181.46	4
t_e	910.2	5
Density		
g/ml 20°C	0.80020	3'
d_4^t 25	0.79472	3'
30	0.78929	3'
a	0.82148	5
b	-0.0$_2$1064	4
Ref. Index		
n_D 20°C	1.42320	3'
25	1.42007	3'
30	1.41697	3'
"C"	0.7029	4
MR (Obs.)	28.711	2
MR (Calc.)	28.362	5
(nD-d/2)	1.02310	2
Dielectric		
A -20 to	6.78781	3
B 110 °C	1115.565	3
C	221.314	3
A* -20 to	1.17704	4
B* 90 °C	1040.9	4
K		
c		
t_k to		
t_x °C		
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac 110 to	7.38842	5
Bc t_c °C	1549.0	5
Cc	280.4	5
Cryos. A°	0.00396	3
consts. B°		
t_e °C	70.056	5

		Ref.
dt/dP		
°C/mm		
25°C	0.1302	4
BP	0.04176	4
t_e	0.03631	5
30 mm	0.5726	4
ΔHm cal/g	6.58	3
ΔHv cal/g		
25°C	81.59	3
30 mm	88.02	5
BP	75.37	3
t_e	74.46	5
t_e (d, e)	74.44	5
$\Delta Hv/T_e$	19.56	5
d -11 to	85.55	4
e 80 °C	0.1586	4
d' to		
e' °C		
d_c g/ml	0.278	5
v_c ml/g	3.596	5
t_c °C	236.0	5
P_c mm	24480.	5
PV/RT		
25°C	0.9845	5
30 mm	1.0000	5
BP	0.9579	5
t_e	0.9521	5
t_c	0.250	5
ΔHc kcal/m	-8.276	3
ΔHf	-33.78	3
ΔFf	-9.33	3
Viscosity		
centistokes		
η 20 °C	0.639	3'
25	0.589	3'
30	0.545	3'
B^v 15 to	246.28	4
A^v 40 °C	3.71038	4
(B^v) to		
(A^v) °C		
c_p liq. 25 °C	0.464	3
60	0.483	3
c_p vap. 65 °C	0.353	3
75	0.361	3
c_v vap. 25		

		Ref.
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	20.90	5
γ 30	19.66	5
40	18.68	5
Parachor [P]		
20°C		
30		
40		
S = 51 Sugd.	241.2	5
Exp. L.1.%/wt. u.		
Dispersion	118.	2
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:

PURIFICATION:

LITERATURE REFERENCES: 3 JACS 75, 1818(1953), McCullough et al.; 3' API 44 (1953)

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE VIII. THIAALKANES

No. 17

NAME	Pentanethiol Amyl mercaptan	STRUCTURAL FORMULA
Mole % Pur. 99.92	Ref. 3	Molecular Formula $C_5H_{12}S$	Molecular Weight 104.212	$CH_3(CH_2)_4SH$

		Ref.
F.P. °C	-75.70	3
F.P. 100%		
B.P. °C		
760 mm	126.638	3
100	66.295	4
30	39.69	4
10	19.505	4
1	-13.787	4
Pressure		
mm 25°C	13.80	5
t_e	1105.5	5
Density		
g/ml 20°C	0.84209	3
d_4^t 25	0.83763	3
30	0.83317	4
a	0.85991	4
b	-0.0_3888	4
Ref. Index		
n_D 20°C	1.44692	3
25	1.44439	3
30	1.44188	4
"C"	0.7031	4
MR (Obs.)		
MR (Calc.)		
(nD-d/2)		
Dielectric		
A 39 to	6.93311	3
B 180 °C	1369.479	3
C	211.314	3
A* to	1.31534	5
B* °C	1282.76	5
K		
c		
t_k to		
t_x °C		
A' 0 to	7.33940	5
B' 39 °C	1581.0	5
C'	230.	5
A'* 0 to	1.71996	5
B'* 39 °C	1487.4	5
Ac 180 to	7.46403	5
Bc t_c °C	1816.6	5
Cc	270.7	5
Cryos. A°	0.0541	3
consts. B°		
t_e °C	140.776	5

		Ref.
dt/dP		
°C/mm		
25°C	1.2943	4
BP	0.04766	4
t_e	0.03556	5
30 mm	0.6660	4
ΔHm cal/g	40.21	3
ΔHv cal/g		
25°C	94.92	5
30 mm	93.43	5
BP	80.43	5
t_e	79.28	5
t_e (d, e)	78.31	5
$\Delta Hv/T_e$	20.08	5
d 39 to	99.36	5
e 135 °C	0.1495	5
d' 10 to	97.45	5
e' 39 °C	0.1014	5
d_c g/ml	0.2847	5
v_c ml/g	3.512	5
t_c °C	327.0	5
P_c mm	26590.	5
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9607	5
t_e	0.9598	5
t_c	0.26	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity		
centistokes		
η 20 °C	0.639	3'
25	0.602	3'
30	0.569	3'
B^v 10 to	448.0	4
A^v 40 °C	2.27753	4
(B^v)		
(A^v)		
c_p liq 25.9°C	0.2706	3
c_p vap. °K		
c_v vap.		

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension			
dynes/cm. 20°C		26.8	3'
σ 25		26.3	3'
30		25.7	3'
Parachor [P]			
20°C		281.6	4
30		281.8	4
40		281.6	4
Sugd.		277.4	5
Exp. L.l.%/wt. u.			
Dispersion			
Flash Point °C			
Fire Point			
M. Spec.		Yes	2
Ultra V.			
X-Ray Dif.			
Infrared		77.	1
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:

PURIFICATION:

LITERATURE REFERENCES: 3 JACS 74, 2804(1952); 3' Private communication from Am. Pet. Inst. Res. Proj. 48A, Bureau of Mines, Laramie, Wyo.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE IX. DITHIAALKANES

No. 1

NAME	2,3-Dithiabutane Methyl disulfide	STRUCTURAL FORMULA
Mole % Pur. 99.97	Ref. 3	Molecular Formula $C_2H_6S_2$	Molecular Weight 94.200	CH_3-S-S-CH_3

		Ref.
F. P. °C	-84.72	3
F. P. 100%		
B. P. °C		
760 mm	109.744	3
100	51.60	3
30	25.89	4
10	6.36	4
1	-25.9	4
Pressure mm 25°C	28.644	4
t_e	1030.3	5
Density g/ml 20°C	1.06250	3'
d_4^t 25	1.05690	3'
30	1.05138	3'
a	1.08490	4
b	-0.0_21114	4
Ref. Index n_D 20°C	1.52592	3'
25	1.52298	3'
30	1.51998	3'
"C"	0.6491	4
MR (Obs.)	27.209	4
MR (Calc.)	27.656	5
(nD-d/2)	0.99467	4
Dielectric		
A | 15 to	6.97792	3
B | 180 °C	1346.342	3
C	218.863	3
A* | 20 to	1.34890	5
B* | 170 °C	1265.0	5
K		
c		
t_k | to		
t_x | °C		
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | 180 to	7.28227	5
Bc | t_c °C	1600.0	5
Cc	254.8	5
Cryos. A°	0.030	3'
consts. B°		
t_e °C	120.70	5

		Ref.
dt/dP		
°C/mm		
25°C	0.6697	5
BP	0.04583	4
t_e	0.03610	5
30 mm	0.6441	4
ΔHm cal/g	23.32	3
ΔHv cal/g		
25°C	97.79	5
30 mm	97.66	5
BP	85.32	5
t_e	82.73	5
t_e (d, e)	83.70	5
$\Delta Hv/T_e$	19.78	5
d | 20 to	101.47	5
e | 115 °C	0.1472	5
d' | to		
e' | °C		
d_c g/ml	0.341	3²
v_c ml/g	2.930	3²
t_c °C	333.	3²
P_c mm	36328.	3²
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9623	5
t_e	0.9401	5
t_c	0.264	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.622	3'
25	0.587	3'
30	0.557	3'
B^v | 15 to	426.10	4
A^v | 40 °C	2.34052	4
(B^v) |		
(A^v) |		
c_p liq. 27.2°C	0.3713	3
79.1	0.3860	3
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension	dynes/cm.	20°C	33.6	3'
σ		30	32.8	3'
		40	32.2	3'
Parachor [P]		20°C	213.47	4
		30	213.31	4
		40	213.46	4
		Sugd.	213.2≠	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				

≠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.; 3² Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.

No. 2

NAME	3,4-Dithiahexane Diethyl disulfide, Ethyl disulfide	STRUCTURAL FORMULA
Mole % Pur. 99.90	Molecular Formula $C_4H_{10}S_2$	Molecular Weight 122.252

$C_2H_5\text{-}S\text{-}S\text{-}C_2H_5$

		Ref.
F.P. °C	-101.52	3
F.P. 100%		
B.P. °C		
760 mm	153.985	3
100	89.72	4
30	61.33	4
10	39.8	5
1	3.32	5
Pressure		
mm 25°C	4.280	5
t_e	1165.3	5
Density		
g/ml 20°C	0.99311	3
d^t_4 25	0.98818	3
30	0.98332	3
a	1.01281	4
b	-0.0$_3$984	4
Ref. Index		
n_D 20°C	1.50731	3
25	1.50470	3
30	1.50198	3
"C"	0.6715	4
MR (Obs.)	36.650	4
MR (Calc.)	36.892	5
(nD-d/2)	1.01076	4
Dielectric		
A | 61 to	6.96678	3
B |__°C	1480.584	3
C	208.373	3
A* | to	1.39762	5
B* |__°C	1389.68	5
K		
c		
t_k | to		
t_x | °C		
A' | 15 to	7.34989	5
B' |_61 °C	1695.00	5
C'	227.29	5
A'* to	1.77116	5
B'* °C	1594.95	5
Ac | to		
Bc | t_c °C		
Cc |__		
Cryos. A°	0.038	3
consts. B°		
t_e °C	171.23	5

		Ref.
dt/dP		
°C/mm		
25°C	3.8145	5
BP	0.05068	4
t_e	0.03627	5
30 mm	0.7112	4
ΔHm cal/g	18.20	4
ΔHv cal/g		
25°C	88.5	5
30 mm	85.26	5
BP	73.55	5
t_e	71.58	5
t_e (d,e)	71.37	5
$\Delta Hv/T_e$	19.69	5
d | 60 to	93.01	5
e | 170 °C	0.1264	5
d' | 15 to	90.73	5
e' | 60 °C	0.0892	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9424	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.861	3
25	0.806	3
30	0.757	3
B^v | 15 to	496.94	4
A^v | 40 °C	2.24012	4
(B^v) | to		
(A^v) | °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		31.3	3
γ 25		30.7	3
30		30.2	3
Parachor [P]			
20°C		291.17	4
25		291.23	4
30		291.43	4
Sugd.		291.2≠	5
Exp. L.	1. %/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			

≠ 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

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE IX. DITHIAALKANES

No. 3

NAME	2-Methyl-3, 4-dithiahexane	STRUCTURAL FORMULA
		$CH_3CH(CH_3)-S-S-CH_2CH_3$
Mole % Pur.	Ref. Molecular Formula $C_5H_{12}S_2$ Molecular Weight 136.266	

		Ref.			Ref.			Ref.
F.P. °C			dt/dP °C/mm			f | to		
F.P. 100%			25°C	5.9761	5	g | °C		
B.P. °C			BP	0.05202	5	h |		
760 mm	165.5	3	t_e	0.0367	5	f' | to		
100	99.45	5	30 mm	0.7316	4	g' | °C		
30	70.26	4	ΔHm cal/g			h' |		
10	47.96	5				m | to		
1	10.65	5	ΔHv cal/g			n | °K		
Pressure mm 25°C	2.636	5	25°C	82.35	5	o |		
t_e	1188.0	5	30 mm	78.41	5	m' | to		
Density g/ml 20°C			BP	67.25	5	n' | °K		
d_4^{t} 25			t_e	65.39	5	o' |		
30			t_e (d, e)	65.07	5	Surface tension dynes/cm. 20°C		
a			ΔHv/T_e	19.48	5	γ 30		
b			d | 70 to	86.64	5	40		
Ref. Index n_D 20°C			e | 180 °C	0.1172	5	Parachor [P] 20°C		
25			d' | 20 to	84.52	5	30		
30			e' | 70 °C	0.0870	5	40		
"C"			d_c g/ml			Sugd.	330.2	5
MR (Obs.)			v_c ml/g			Exp. L.1.%/wt. u.		
MR (Calc.) (nD-d/2)	41.510	5	t_c °C			Dispersion		
Dielectric			P_c mm			Flash Point °C		
A | 70 to	6.98406	3	PV/RT 25°C	1.0000	5	Fire Point		
B | 240 °C	1532.629	3	30 mm	1.0000	5	M. Spec.		
C	208.053	3	BP	0.9471	5	Ultra V.		
A* | 70 to	1.46155	5	t_e	0.9340	5	X-Ray Dif.		
B* | 200 °C	1441.9	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		
A' | 0 to	7.33100	5	η °C			Ether		
B' | 70 °C	1731.8	5				n-Heptane		
C'	225.6	5	B^v | to			Ethanol		
A'* 20 to	1.79549	5	A^v | °C			Water		
B'* 70 °C	1631.6	5	(B^v) |			Water in		
Ac | to			(A^v) |					
Bc | t_c °C			c_p liq. °C					
Cc			c_p vap. °K					
Cryos. A° consts. B°			c_v vap.					
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.

No. 4

NAME	3,4-Dithiaheptane	STRUCTURAL FORMULA
		$C_2H_5S\text{-}SC_3H_7$

Mole % Pur.	Ref.	Molecular Formula $C_5H_{12}S_2$	Molecular Weight 136.266

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	173.7	3
100	107.02	5
30	77.49	4
10	54.92	5
1	17.12	5
Pressure mm 25°C	1.715	5
t_e	1203.7	5
Density g/ml 20°C		
d_4^{t} 25 30		
a		
b		
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	41.510	5
Dielectric		
A | 77 to	7.00392	3
B | 250 °C	1562.196	3
C	205.172	3
A* | 77 to	1.48396	5
B* | 200 °C	1473.35	5
K		
c		
t_k | to		
t_x | °C		
A' | 0 to	7.35211	5
B' | 77 °C	1765.2	5
C'	222.9	5
A'* 20 to	1.75971	5
B'* 77 °C	1649.1	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	193.0	5

		Ref.
dt/dP °C/mm		
25°C	8.8201	5
BP	0.05251	5
t_e	0.0366	5
30 mm	0.7404	4
ΔHm cal/g		
ΔHv cal/g		
25°C	85.73	5
30 mm	80.78	5
BP	68.89	5
t_e	66.76	5
t_e (d,e)	66.50	5
$\Delta Hv/T_e$	19.51	5
d | 77 to	90.35	5
e | 190 °C	0.1236	5
d' | 20 to	88.06	5
e' | 77 °C	0.09430	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9430	5
t_e	0.9280	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.		

		Ref.
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.	330.2	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: 3

PURIFICATION: 3

LITERATURE REFERENCES: 3 Ind. Eng. Chem. 44, 1430 (1952), P. T. White et al.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE IX. DITHIAALKANES

No. 5

NAME	2,5-Dimethyl-3,4-dithiahexane iso-Propyl disulfide	STRUCTURAL FORMULA
Mole % Pur. 98.9	Ref. 3	Molecular Formula $C_6H_{14}S_2$	Molecular Weight 150.292	$CH_3\text{-}\underset{CH_3}{CH}\text{-}S\text{-}S\text{-}\underset{CH_3}{CH}\text{-}CH_3$

		Ref.			Ref.			Ref.
F.P. °C			dt/dP °C/mm			f | to		
F.P. 100%			25°C	9.7825	5	g | °C		
B.P. °C			BP	0.0536	4	h |		
760 mm	177.2	3	t_e	0.03732	5	f' | to		
100	109.36	5	30 mm	0.7472	4	g' | °C		
30	79.50	4	ΔHm cal/g			h'		
10	56.75	5				m | to		
1	18.77	5	ΔHv cal/g			n | °K		
Pressure mm 25°C	1.531	5	25°C	78.53	5	o		
t_e	1208.2	5	30 mm	73.42	5	m' | to		
Density g/ml 20°C			BP	61.82	5	n' | °K		
d_4^t 25 30			t_e	59.91	5	o'		
a			t_e (d, e)	59.47	5	Surface tension dynes/cm. 20°C		
b			ΔHv/T_e	19.14	5	σ 30		
Ref. Index n_D 20°C			d | 79 to	82.85	5	40		
25			e | 190 °C	0.1187	5	Parachor [P] 20°C		
30			d' | 20 to	82.19	5	30		
"C"			e' | 75 °C	0.1103	5	40		
MR (Obs.)			d_c g/ml	0.290	3	S = 50.5 Sugd.	369.2	5
MR (Calc.) (nD-d/2)	45.288	5	v_c ml/g	3.449	3	Exp. L.l.%/wt. u.		
Dielectric			t_c °C	428.	3	Dispersion		
A | 79 to	6.91856	3	P_c mm	33087.	5	Flash Point °C		
B | 252 °C	1528.232	3	PV/RT 25°C	1.0000	5	Fire Point		
C	201.350	3	30 mm	1.0000	5	M. Spec.		
A* | to	1.44657	5	BP	0.938	5	Ultra V.		
B* | °C	1442.19	5	t_e	0.924	5	X-Ray Dif.		
K			t_c	0.255	5	Infrared		
c			ΔHc kcal/m			Solubility in		
t_k | to			ΔHf			Acetone		
t_x | °C			ΔFf			Carbon tet.		
A' | 0 to	7.26137	5	Viscosity centistokes			Benzene		
B' | 79 °C	1726.8	5	η °C			Ether		
C'	219.0	5				n-Heptane		
A'* to	1.77035	5	B^v | to			Ethanol		
B'* °C	1629.4	5	A^v | °C			Water		
Ac | 252 to	7.3307	5	(B^v)			Water in		
Bc | t_c °C	1925.41	5	(A^v)					
Cc	256.95	5	c_p liq. °C					
Cryos. A° consts. B°			c_p vap. °K					
t_e °C	197.0	5	c_v vap.					

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.

No. 6

NAME	2, 2-Dimethyl-3, 4-dithiahexane tert-Butyl ethyl disulfide	STRUCTURAL FORMULA
Mole % Pur. 99.1	Ref. 3	Molecular Formula $C_6H_{14}S_2$ — Molecular Weight 150.292

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C 760 mm	175.66	3
100	107.57	5
30	77.53	5
10	53.63	5
1	16.35	5
Pressure mm 25°C	1.796	5
t_e	1192.7	5
Density g/ml 20°C		
d_4^t 25 30		
a		
b		
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.) MR (Calc.) (nD-d/2)	45.288	5
Dielectric		
A | 77 to	6.94259	3
B | 251 °C	1551.886	3
C	206.411	3
A* | to	1.48157	5
B* | °C	1467.32	5
K		
c		
t_k | to		
t_x | °C		
A' | 0 to	7.28692	5
B' | 77 °C	1753.6	5
C'	224.3	5
A'* to	1.78280	5
B'* °C	1650.6	5
Ac | 251 to	7.3615	5
Bc | t_c °C	1958.99	5
Cc	262.94	5
Cryos. A° consts. B°		
t_e °C	195.0	5

		Ref.
dt/dP °C/mm		
25°C	85.7047	5
BP	0.05375	4
t_e	0.03781	5
30 mm	0.7521	5
ΔHm cal/g		
ΔHv cal/g		
25°C	76.44	5
30 mm	72.13	5
BP	60.80	5
t_e	58.89	5
t_e (d, e)	58.57	5
$\Delta Hv/T_e$	18.89	5
d | 77 to	81.07	5
e | 190 °C	0.1154	5
d' | 20 to	78.49	5
e' | 77 °C	0.0820	5
d_c g/ml	0.289	5
v_c ml/g	3.462	3
t_c °C	426.	3
P_c mm	32964.	5
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.932	5
t_e	0.9156	5
t_c	0.254	5
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.		

		Ref.
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		
S = 50.5 Sugd.	369.2	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: 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_3COOH
Mole % Pur.	Ref.	Molecular Formula $C_2H_4O_2$	Molecular Weight 60.052

		Ref.			Ref.			Ref.
F.P. °C	16.63	3⁴	dt/dP °C/mm			f | to		
F.P. 100%			25°C	1.0411	5	g | °C		
B.P. °C			BP	0.04364	4	h |		
760 mm	117.90	4	t_e	0.03347	5	f' | to		
100	62.06	4	30 mm	0.6288	4	g' | °C		
30	36.02	4	ΔHm cal/g	48.12	2	h' |		
10	17.0	4	ΔHv cal/g			m | to		
1	-14.8	4	25°C	84.96	3'	n | °K		
Pressure			30 mm	86.57	3'	o |		
mm 25°C	15.79	5	BP	92.56	3'	m' | to		
t_e	1061.	5	t_e	93.34	3'	n' | °K		
Density			t_e (d, e)			o' |		
g/ml 20°C	1.04923	1	ΔHv/T_e	21.28	5	Surface tension		
d_4^t 25	1.04365	1	d | 36 to	176.97	5	dynes/cm. 20°C	27.42	3³
30	1.03818	4	e | 135 °C	0.2670	5	γ 30	26.34	3³
a	1.07131	4	d' | to			40	26.8	5
b	-0.00110	4	e' | °C			Parachor [P]		
Ref. Index			d_c g/ml	0.3506	3'	20°C	131.0	4
n_D 20°C	1.37160	1	v_c ml/g	2.852	3'	30	131.1	4
25	1.36965	1	t_c °C	321.6	3'	40		
30	1.36757	4	P_c mm	43400.	3'	O_2 = 55. Sugd.	133.0	5
"C"	0.47428	4	PV/RT			Exp. L.1.%/wt. u.		
MR (Obs.)	12.995	4	25°C	1.0000	5	Dispersion		
MR (Calc.)	13.014	5	30 mm	1.0000	5	Flash Point °C		
(nD-d/2)	0.84699	4	BP	0.9495	5	Fire Point		
Dielectric	20 6.15	3²	t_e	0.9473	5	M. Spec.	Yes	2
A | 36 to	7.18807	4	t_c	0.200	4	Ultra V.		
B | 170 °C	1416.7	4	ΔHc kcal/m			X-Ray Dif.		
C	211.	4	ΔHf			Infrared	6.	1
≠A* | 36 to	1.25935	5	ΔFf			Solubility in		
B* | 170 °C	1304.0	5	Viscosity centistokes			Acetone	∞	
K	23.0	4	η °C			Carbon tet.	∞	
c	-0.08340	4				Benzene	∞	
t_k | to	175.0	4				Ether	∞	
t_x | °C	381.0	5				n-Heptane	∞	
A' | 0 to	7.80307	5				Ethanol	∞	
B' | 36 °C	1651.2	5	B^v | to			Water	∞	
C'	225.	5	A^v | °C			Water in	∞	
A'* 0 to	1.93628	5	(B^v) |					
B'* 36 °C	1557.2	5	(A^v) |					
Ac | 170 to	7.52110	4	c_p liq. °C					
Bc | t_c °C	2071.3	4	c_p vap. °K					
Cc	397.7	4	c_v vap.					
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; 3² NBS 514; 3³ Bull. Soc. Chim. 40, 177 (1931) Hennault-Roland and Zek; 3⁴ JACS 56, 1664 (1934) Hovoka and Dreisbach

≠ Mx (association) 100°C to tc = 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.

No. 2

NAME	Propionic acid		STRUCTURAL FORMULA
Mole % Pur.	Ref.	Molecular Formula $C_3H_6O_2$	Molecular Weight 74.078

		Ref.
F.P. °C	-20.8	3²
F.P. 100%		
B.P. °C		
760 mm	140.99	1
100	85.82	4
30	60.90	4
10	41.65	5
1	9.0	5
Pressure		
mm 25°C	3.343	5
t_e	1127.4	5
Density		
g/ml 20°C	0.9930	3²
d_4^t 25	0.9878	4
30	0.9826	3²
a	1.0138	4
b	-0.00104	4
Ref. Index		
n_D 20°C	1.3869	4
25	1.3848	3²
30	1.3827	4
"C"	0.5205	4
MR (Obs.)	17.563	4
MR (Calc.)	17.590	5
(nD-d/2)	0.8909	4
Dielectric		
A 60 to	7.35027	5
B 185 °C	1497.775	4
C	194.12	4
≠ A* 60 to	1.58276	5
B* 160 °C	1416.0	5
K		
c		
t_k to		
t_x °C		
A' 0 to	7.71558	5
B' 60 °C	1690.	5
C'	210.	5
A'* 10 to	1.96672	5
B'* 60 °C	1608.8	5
Ac 185 to	9.02136	5
Bc t_c °C	3201.8	5
Cc	385.5	5
Cryos. A°		
consts. B°		
t_e °C	154.34	5

		Ref.
dt/dP		
°C/mm		
25°C	4.2452	5
BP	0.04284	4
t_e	0.03123	5
30 mm	0.6286	4
ΔHm cal/g		
ΔHv cal/g		
25°C	≠ 168.09	5
30 mm	158.77	5
BP	134.97	5
t_e	131.48	5
t_e (d, e)	131.38	5
ΔHv/T_e	22.78	5
d 60 to	176.79	5
e 160 °C	0.2942	5
d' 15 to	174.58	5
e' 60 °C	0.2596	5
d_c g/ml	0.315	3'
v_c ml/g	3.175	4
t_c °C	339.5	3'
P_c mm	40280.	3'
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9574	5
t_e	0.9478	5
t_c	0.244	4
ΔHc kcal/m	365.28	3²
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.		

			Ref.
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	26.70	3²
	40	25.71	3²
Parachor [P]			
20°C			
	30	171.6	4
	40	171.6	4
	Sugd.	172.0	0
Exp. L.l.%/wt. u.			
Dispersion			
Flash Point °C			
Fire Point			
M Spec.		Yes	1
Ultra V.			
X-Ray Dif.			
Infrared		773.	1
Solubility in +			
Acetone		∞	
Carbon tet.		∞	
Benzene		∞	
Ether		∞	
n-Heptane		∞	
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' Young; 3² Timmermans

TABLE X. ORGANIC ACIDS

No. 3

NAME	n-Butyric acid	STRUCTURAL FORMULA
Mole % Pur. 99.86	Ref. 1	Molecular Formula $C_4H_8O_2$	Molecular Weight 88.104	$CH_3(CH_2)_2COOH$

		Ref.			Ref.			Ref.
F.P. °C	-4.26	1	dt/dP °C/mm			f | to		
F.P. 100%			25°C	17.000	5	g | °C		
B.P. °C			BP	0.04346	4	h		
760 mm	163.53	4	t_e	0.03088	5	f' | to		
100	107.50	4	30 mm	0.6400	4	g' | °C		
30	82.14	4	ΔHm cal/g			h'		
10	62.51	5	ΔHv cal/g			m | to		
1	29.1	5	25°C	≠ 164.25	5	n | °K		
Pressure mm 25°C	0.7183	5	30 mm	148.34	5	o		
t_e	1163.	5	BP	122.40	5	m' | to		
Density			t_e	118.49	5	n' | °K		
g/ml 20°C	0.95767	1	t_e (d, e)	117.74	5	o'		
d_4^t 25	0.95273	1	ΔHv/T_e	22.98	5	Surface tension		
30	0.94779	4	d | 82 to	174.52	5	dynes/cm. 20°C	26.74	3²
a	0.97743	4	e | 170 °C	0.3187	5	γ 30	25.57	3²
b	-0.0₃988	4	d' | 0 to	171.21	5	40		
Ref. Index			e' | 82 °C	0.2784	5	Parachor [P]		
n_D 20°C	1.39796	1	d_c g/ml	0.302	3'	20°C	209.2	4
25	1.39581	1	v_c ml/g	3.311	3'	30	209.0	4
30	1.39313	4	t_c °C	355.0	3'	40		
"C"	0.55435	4	P_c mm	33500.	5	O_2 = 55. Sugd.	211.0	5
MR (Obs.)	22.202	4	PV/RT			Exp. L.1.%/wt. u.		
MR (Calc.)	22.208	5	25°C	1.0000	5	Dispersion		
(nD-d/2)	0.91912	4	30 mm	1.0000	5	Flash Point °C		
Dielectric	20 2.97	3³	BP	0.9400	5	Fire Point		
A | 82 to	7.38423	4	t_e	0.9261	5	M. Spec.		
B | 210 °C	1542.6	4	t_c	0.249	5	Ultra V.		
C	179.	4	ΔHc kcal/m			X-Ray Dif.		
A* | 82 to	1.72182	5	ΔHf			Infrared		
B* | 210 °C	1474.2	5	ΔFf			Solubility in		
K			Viscosity centistokes			Acetone	∞	
c			η 15 °C	1.8844	3²	Carbon tet.	∞	
t_k | to			30	1.4610	3²	Benzene	∞	
t_x | °C						Ether	∞	
A' | 0 to	7.85941	5				n-Heptane	∞	
B' | 82 °C	1800.7	5	B^v | 10 to	643.89	4	Ethanol	∞	
C'	200.	5	A^v | 40 °C	Z.04100	4	Water	∞	
A'* 0 to	2.15901	5	(B^v) |			Water in	∞	
B'* 82 °C	1716.1	5	(A^v) |					
Ac | 210 to	7.81667	5	c_p liq. °C					
Bc | t_c °C	1897.3	5	c_p vap. °K					
Cc	221.4	5	c_v vap.					
Cryos. A° consts. B°								
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: 3' Lange; 3² Timmermans; 3³ NBS 514

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 4

NAME	Isobutyric acid	STRUCTURAL FORMULA
		$(CH_3)_2CHCOOH$

Mole % Pur.	Ref.	Molecular Formula $C_4H_8O_2$	Molecular Weight 88.104

		Ref.
F.P. °C	-46.1	3'
F.P. 100%		
B.P. °C		
760 mm	153.2	4
100	98.06	4
30	73.08	4
10	53.74	4
1	20.83	4
Pressure mm 25°C	1.388	5
t_e	1161.6	5
Density g/ml 20°C	0.96815	3'
d_4^{25}	0.94288	4
d_4^{30}	0.93785	3'
a	0.98926	4
b	-0.02$_1$1054	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	22.208	5
Dielectric	10 2.71	3²
A | 73 to	7.40246	4
B | 190 °C	1529.2	4
C	185.0	5
A* | 73 to	17.007	5
B* | 170 °C	1451.0	5
K		
c		
t_k | to		
t_x | °C		
A' | 0 to	7.86161	5
B' | 73 °C	1775.4	5
C'	205.0	5
A'* 15 to	2.16121	5
B'* 73. °C	1688.9	5
Ac | 190 to	8.23110	5
Bc | t_c °C	2213.8	5
Cc	261.2	5
Cryos. A° consts. B°		
t_e °C	167.56	5

		Ref.
dt/dP °C/mm		
25°C	9.3229	5
BP	0.04274	4
t_e	0.03039	5
30 mm	0.6305	4
ΔHm cal/g		
ΔHv cal/g		
25°C	≠ 154.8	5
30 mm	142.98	5
BP	120.6	5
t_e	117.0	5
t_e (d, e)	116.59	5
$\Delta Hv/T_e$	23.39	5
d | 73 to	163.39	5
e | 165 °C	0.2793	5
d' | 15 to	161.10	5
e' | 73 °C	0.2479	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9581	5
t_e	0.9472	5
t_c	0.255	5
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.		

			Ref.
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	25.55	3'
γ	30	25.13	3'
	40	24.22	3'
Parachor [P]			
	20°C	204.6	4
	30	208.1	4
	40	205.1	4
	Sugd.	206.0 ≠	5
Exp. L.1.%/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			

≠ 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; 3² NBS 514; 3³ Lange

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE X. ORGANIC ACIDS

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.
F. P. °C	-33.83	1
F. P. 100%		
B. P. °C		
760 mm	186.05	1
100	128.99	4
30	102.92	4
10	82.7	4
1	48.1	5
Pressure		
mm 25°C	0.1406	5
t_e	1238.0	5
Density		
g/ml 20°C	0.93914	1
d_4^t 25	0.93458	1
30	0.93002	4
a	0.95738	4
b	-0.0_3912	4
Ref. Index		
n_D 20°C	1.40846	1
25	1.40640	1
30	1.40200	4
"C"	0.5792	4
MR (Obs.)	26.853	4
MR (Calc.)	26.826	5
(nD-d/2)	0.93889	5
Dielectric	2.574	1
A | 102 to	7.57366	4
B | 250 °C	1694.37	4
C	175.0	4
A* | 20 to	1.93656	5
B* | 102 °C	1617.64	5
K		
c		
t_k | to		
t_x | °C		
A' | 20 to	7.90344	5
B' | 102 °C	1882.4	5
C'	190.0	5
A'* 20 to	2.26789	5
B'* 102 °C	1802.00	5
Ac | 250 to	8.17764	5
Bc | t_c °C	2246.7	5
Cc	239.4	5
Cryos. A°	0.02497	1
consts. B°		
t_e °C	203.13	5

		Ref.
dt/dP		
°C/mm		
25°C	76.035	5
BP	0.04396	4
t_e	0.02960	5
30 mm	0.6599	4
ΔHm cal/g	27.83	4
ΔHv cal/g		
25°C	162.10	5
30 mm	139.03	5
BP	116.43	5
t_e	112.52	5
t_e (d, e)	111.78	5
$\Delta Hv/T_e$	24.12	5
d | 102 to	167.01	5
e | 195 °C	0.2719	5
d' | 20 to	169.5	5
e' | 102 °C	0.2961	5
d_c g/ml	0.352	5
v_c ml/g	2.84	5
t_c °C	379.0	3
P_c mm	35040.	5
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9480	5
t_e	0.9341	5
t_c	0.24	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	2.3262	1
40	1.6948	1
60	1.2771	1
80	1.0242	1
B^v | 25 to	604.94	4
A^v | 90 °C	2.29764	4
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h			
f' | to			
g' | °C			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		27.25	1
γ 30		26.42	1
40		25.48	1
Parachor [P]			
20°C		248.5	4
30		247.8	4
40		249.2	4
O_2 = 55 Sugd.		250.0	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			

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

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES: 3 ICT

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

No. 1

NAME	Chloropicrin		STRUCTURAL FORMULA
Mole % Pur. 99.65	Ref. 1	Molecular Formula CCl_3NO_2	Molecular Weight 164.389

		Ref.
F.P. °C	-69.49	1
F.P. 100%	-69.32	1
B.P. °C		
760 mm	111.84	1
100	54.12	4
30	28.52	5
10	-8.91	5
1	-24.09	5
Pressure		
mm 25°C	24.935	5
t_e	1011.91	5
Density		
g/ml 20°C	1.65659	1
d_4^{t} 25	1.64756	1
30	1.63852	4
a	1.69268	4
b	-0.00179	4
Ref. Index		
n_D 20°C	1.46217	1
25	1.45954	1
30	1.44639	1
"C"	0.3689	4
MR (Obs.)	27.289	4
MR (Calc.)	27.039	5
(nD-d/2)	0.63387	4
Dielectric		
A 28 to	7.03335	1
B 176 °C	1369.70	1
C	218.0	1
A* 28 to	1.67964	5
B* 130 °C	1296.96	5
K		
c		
t_k to		
t_x °C		
A' 0 to	7.48413	5
B' 28 °C	1600.965	5
C'	238.0	5
A'* 0 to	2.04481	5
B'* 28 °C	1499.51	5
Ac to		
Bc t_c °C		
Cc		
Cryos. A°	0.02039	1
consts. B°		
t_e °C	122.03	5

		Ref.
dt/dP		
°C/mm		
25°C	0.7525	5
BP	0.04539	4
t_e	0.03622	5
30 mm	0.6423	5
ΔHm cal/g	16.78	1
ΔHv cal/g		
25°C	57.28	5
30 mm	57.11	5
BP	48.16	5
t_e	47.17	5
t_e (d, e)	47.07	5
$\Delta Hv/T_e$	19.62	5
d 28 to	60.17	5
e 130 °C	0.1074	5
d' to		
e' °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9305	5
t_e	0.9202	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.7087	1
40	0.5595	1
60	0.4571	1
80	0.3828	1
B^v 10 to	471.38	4
A^v 50 °C	2.24277	4
(B^v) 50 to	453.32	4
(A^v) 90 °C	2.29950	4
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension			
dynes/cm. 20°C		32.04	1
30		30.69	1
40		29.36	1
Parachor [P]			
20°C		236.12	4
30		236.18	4
40		236.22	4
O = 30	Sugd.	240.2	5
Exp. L.1.%/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: Dow, Distillation

PURIFICATION: Distillation

LITERATURE REFERENCES:

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 2

NAME	Dimethyl formamide	STRUCTURAL FORMULA
		$(CH_3)_2NCHO$

Mole % Pur. 99.90	Ref. 1	Molecular Formula C_3H_7ON	Molecular Weight 73.094

		Ref.
F.P. °C	-60.48	1
F.P. 100%	-60.43	1
B.P. °C		
760 mm	149.56	1
100	87.96	1
30	60.70	4
10	39.9	5
1	5.	5
Pressure		
mm 25°C	4.064	5
t_e	1150.	5
Density		
g/ml 20°C	0.94873	1
d_4^t 25	0.94397	1
30	0.93920	4
a	0.96776	4
b	-0.0_3951	4
Ref. Index		
n_D 20°C	1.43047	1
25	1.42817	1
30	1.41719	1
"C"		
MR (Obs.)	19.920	4
MR (Calc.)	19.815	5
(nD-d/2)	0.95611	4
Dielectric	< 16.1	1
A | 60 to	6.99608	1
B | 350 °C	1437.84	1
C	199.83	1
A* | 60 to	1.22872	5
B* | 170 °C	1357.4	5
K		
c		
t_k | to		
t_x | °C		
A' | 15 to	7.3438	5
B' | 60 °C	1624.7	5
C'	216.2	5
A'* 15 to	1.5551	5
B'* 60 °C	1532.	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°	0.02106	1
consts. B°		
t_e °C	165.55	5

		Ref.
dt/dP		
°C/mm		
25°C	3.8274	5
BP	0.04851	4
t_e	0.03506	5
30 mm	0.6834	4
ΔHm cal/g	25.82	4
ΔHv cal/g		
25°C	155.36	5
30 mm	147.84	5
BP	125.37	5
t_e	121.27	5
t_e (d, e)	120.33	5
$\Delta Hv/T_e$	20.20	5
d | 60 to	162.2	5
e | 150 °C	0.2529	5
d' | 15 to	160.62	5
e' | 60 °C	0.2106	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9421	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.9243	1
40	0.7386	1
60	0.6110	1
80	0.5084	1
B^v | 10 to	439.2	4
A^v | 80 °C	2.46786	4
(B^v) | to		
(A^v) | °C		
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
f | t			
g | °K			
h			
f' | to			
g' | °K			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		36.76	1
30		35.59	1
40		34.40	1
Parachor [P]			
20°C		170.7	4
30		167.7	4
40		164.6	4
Sugd.		161.6	5
Exp. L.1.%/wt.			
u.			
Dispersion			
Flash Point °C *		578.	3
Fire Point			
M Spec.			
Ultra V.			
X-Ray Dif.			
Infrared			
Solubility in +			
Acetone			
Carbon tet.			
Benzene			
Ether			
n-Heptane			
Ethanol			
Water			
Water in			

* 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
Mole % Pur. 99.76	Ref. 1	Molecular Formula $C_3H_5ClO_2$ — Molecular Weight 108.527	$CH_2ClCO_2CH_3$

		Ref.
F.P. °C	-32.12	1
F.P. 100%	-32.02	4
B.P. °C 760 mm	129.82	1
100	74.08	4
30	48.79	5
10	29.21	5
1	-4.10	5
Pressure mm 25°C	7.7247	5
t_e	1092.6	5
Density g/ml 20°C	1.23371	1
d_4^t 25	1.22695	1
30	1.22019	4
a	1.26071	4
b	-0.02135	4
Ref. Index n_D 20°C	1.42179	1
25	1.41965	1
30	1.40870	1
"C"	0.4545	4
MR (Obs.)	22.34	4
MR (Calc.)	22.001	5
(nD-d/2)	0.80493	4
Dielectric		
A | 49 to	7.43362	1
B | 207 °C	1565.33	1
C	214.	1
A* | 49 to	1.83741	5
B* | 152 °C	1478.9	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	7.84161	5
B' | 49 °C	1787.1	5
C'	232.	5
A'* 25 to	2.21428	5
B'* 49 °C	1685.99	5
Ac | 207 to	7.85239	5
Bc | t_c °C	1937.8	5
Cc	261.	5
Cryos. A* consts. B*	0.02338	1
t_e °C	142.15	5

		Ref.
dt/dP °C/mm		
25°C	2.07787	5
BP	0.04315	5
t_e	0.03221	5
30 mm	0.6387	5
ΔHm cal/g	24.86	4
ΔHv cal/g		
25°C	101.44	5
30 mm	99.08	5
BP	86.33	5
t_e	84.48	5
t_e (d, e)	84.39	5
$\Delta Hv/T_e$	22.07	5
d | 49 to	106.76	5
e | 142 °C	0.1574	5
d' | 25 to	103.91	5
e' | 49 °C	0.0991	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9455	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.9241	1
40	0.6989	1
60	0.5564	1
80	0.4585	1
B_v | 10 to	556.95	4
A_v | 50 °C	2.07616	4
(B^v) | 50 to	494.58	4
(A^v) | 90 °C	2.26106	4
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension dynes/cm. 20°C		35.06	1
σ 30		33.90	1
40		32.55	1
Parachor [P] 20°C		214.1	4
30		214.6	4
40		214.8	4
Sugd.		214.2	5
Exp. L.1.%/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			

$T_R = 0.75\ T_c$

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

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 4

NAME	Methyl dichloroacetate	STRUCTURAL FORMULA
Mole % Pur. 99.85	Ref. 1	Molecular Formula $C_3H_4Cl_2O_2$ — Molecular Weight 142.976	$CHCl_2COOCH_3$

		Ref.
F.P. °C	-51.91	1
F.P. 100%	-51.83	4
B.P. °C		
760 mm	142.79	1
100	84.50	4
30	58.15	5
10	37.79	5
1	3.25	5
Pressure		
mm 25°C	4.5851	5
t_e	1126.5	5
Density		
g/ml 20°C	1.37741	1
d_4^t 25	1.37014	1
30	1.36287	4
a	1.4065	4
b	-0.0_2145	4
Ref. Index		
n_D 20°C	1.44293	1
25	1.44054	1
50	1.42894	1
"C"	0.4263	4
MR (Obs.)	27.51	4
MR (Calc.)	26.878	5
(nD-d/2)	0.85422	4
Dielectric	11.93	1
A | 58 to	7.36072	1
B | 208 °C	1589.44	1
C	212.	1
A* | 58 to	1.87541	5
B* | 167 °C	1501.5	5
K		
c		
t_x | to		
t_x | °C		
A' | 25 to	7.75275	5
B' | 58 °C	1808.3	5
C'	230.	5
A'* 25 to	2.24066	5
B'* 58 °C	1706.8	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°	0.01997	1
consts. B°		
t_e °C	156.87	5

		Ref.
dt/dP		
°C/mm		
25°C	3.4060	5
BP	0.04526	5
t_e	0.03300	5
30 mm	0.6647	5
ΔHm cal/g	13.66	4
ΔHv cal/g		
25°C	79.14	5
30 mm	76.52	5
BP	66.36	5
t_e	64.75	5
t_e (d, e)	64.67	5
$\Delta Hv/T_e$	21.52	5
d | 58 to	83.51	5
e | 157 °C	0.1201	5
d' | 25 to	81.11	5
e' | 58 °C	0.07885	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9525	5
t_e	0.9415	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	1.1168	1
40	0.8177	1
60	0.6368	1
80	0.5168	1
B^v | 10 to	621.6	4
A^v | 50 °C	3.92792	4
(B^v) | 50 to	533.6	4
(A^v) | 90 °C	2.20256	4
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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		34.17	1
γ 30		32.97	1
40		31.71	1
Parachor [P]			
20°C		251.0	4
30		251.4	4
40		251.6	4
Sugd.		251.4	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: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

No. 5

NAME	1-Amino-2-propanol Monoisopropanolamine	STRUCTURAL FORMULA
Mole % Pur. 99.68	Ref. 1	Molecular Formula C_3H_9NO
Molecular Weight 75.110		$CH_3CHCH_2NH_2$ OH

		Ref.
F. P. °C	1.74	1
F. P. 100%	1.90	1
B. P. °C		
760 mm	159.46	1
100	104.44	1
30	79.83	5
10	59.53	4
1	24.08	5
Pressure		
mm 25°C	0.9944	5
t_e	1159.5	5
Density		
g/ml 20°C	0.96114	1
d_4^t 25	0.95716	1
30	0.95318	4
a	0.9771	4
b	-0.0_380	4
Ref. Index		
n_D 20°C	1.44786	1
25	1.44604	1
50	1.43688	1
"C"	0.6173	4
MR (Obs.)	20.91	4
MR (Calc.)	21.129	5
(nD-d/2)	0.96729	4
Dielectric		
A | 80 to	7.89864	1
B | 255 °C	1848.9	1
C	209.	1
A* | 80 to	2.19953	5
B* | 183 °C	1787.7	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	8.27730	5
B' | 80 °C	2086.5	5
C'	227.	5
A'* 25 to	2.47287	5
B'* 80 °C	1983.0	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A*	0.01961	1
consts. B*		
t_e °C	173.45	5

		Ref.
dt/dP		
°C/mm		
25°C	13.290	5
BP	0.04196	4
t_e	0.02963	5
30 mm	0.6559	5
ΔHm cal/g	39.18	4
ΔHv cal/g		
25°C	177.92	5
30 mm	167.57	5
BP	147.05	5
t_e	142.76	5
t_e (d, e)	143.44	5
$\Delta Hv/T_e$	24.01	5
d | 80 to	188.14	5
e | 173 °C	0.2577	5
d' | 25 to	182.64	5
e' | 80 °C	0.1888	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9500	5
t_e	0.9331	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity		
centistokes		
η 20 °C	949.84	1
60	110.08	1
80	30.478	1
100	11.784	1
B^v | 10 to	2578.0	4
A^v | 110 °C	6.18502	4
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		36.35	1
δ 30		35.60	1
40		34.82	1
Parachor [P]			
20°C		191.8	4
30		192.5	4
40		193.1	4
O = 15	Sugd.	195.8	5
Exp. L. l. %/wt. u.			
Dispersion			
Flash Point °C			
Fire Point			
M. Spec.			
Ultra V.			
X-Ray Dif.			
Infrared			
Solubility in			
Acetone		∞	1
Carbon tet.		∞	1
Benzene		∞	1
Ether		∞	1
n-Heptane		?	
Ethanol		∞	1
Water		∞	1
Water in			

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

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 6

NAME	Methyl cyanoacetate	STRUCTURAL FORMULA
		$CNCH_2COOCH_3$

Mole % Pur. 99.91	Ref. 1	Molecular Formula $C_4H_5NO_2$	Molecular Weight 99.088

		Ref.
F.P. °C	-13.11	1
F.P. 100%	-13.07	4
B.P. °C		
760 mm	205.09	1
100	141.44	4
30	112.32	4
10	89.67	5
1	51.02	5
Pressure		
mm 25°C	0.14056	4
t_e	1292.3	4
Density		
g/ml 20°C	1.12773	1
d_4^{t} 25	1.12228	1
30	1.11683	4
a	1.14953	4
b	-0.0_2109	4
Ref. Index		
n_D 20°C	1.41791	1
25	1.41662	1
30	1.40620	1
"C"	0.4929	4
MR (Obs.)	22.138	4
MR (Calc.)	22.073	5
(nD-d/2)	0.85404	4
Dielectric	7.21	1
A | 112 to	7.60624	1
B | 300 °C	1914.22	1
C	200.	1
A* | 112 to	1.91784	5
B* | 230 °C	1819.44	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	7.95949	5
B' | 112 °C	2141.227	5
C'	218.0	5
A'* 25 to	2.26414	5
B'* 112 °C	2038.69	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°	0.02195	1
consts. B°		
t_e °C	225.87	5

		Ref.
dt/dP		
°C/mm		
25°C	85.22	5
BP	0.04898	4
t_e	0.03184	5
30 mm	0.7377	4
ΔHm cal/g	29.75	4
ΔHv cal/g		
25°C	148.88	5
30 mm	134.69	5
BP	116.24	5
t_e	112.43	5
t_e (d, e)	112.11	5
$\Delta Hv/T_e$	22.32	5
d | 112 to	157.02	5
e | 226 °C	0.1988	5
d' | 25 to	152.94	5
e' | 112 °C	0.1625	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9999	5
30 mm	1.0000	5
BP	0.9459	5
t_e	0.9307	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	2.7931	1
40	1.7642	1
60	1.2395	1
80	0.9413	1
B^v | 10 to	916.18	4
A^v | 45 °C	3.32131	4
(B^v) | 45 to	703.28	4
(A^v) | 90 °C	3.98255	4
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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	42.32	1
γ	30	41.16	1
	40	39.82	1
Parachor [P]	20°C	224.11	4
One double	30	224.73	4
bond,	40	225.07	4
O = 30	Sugd.	202.3	5
Exp. L.1.%/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: 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 $CH_3CCH(CH_3)OH$ (O)

Mole % Pur.	Ref.	Molecular Formula $C_5H_{10}O_2$	Molecular Weight 102.130

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	183.02	1
100	128.09	4
30	102.27	5
10	81.90	5
1	46.52	5
Pressure		
mm 25°C	0.1787	5
t_e	1230.6	5
Density		
g/ml 20°C	0.98765	1
d_4^t 25	0.98351	1
30	0.97937	4
a	1.00421	4
b	-0.3_{828}	4
Ref. Index		
n_D 20°C	1.43386	1
25	1.43204	1
30	1.42281	1
"C"	0.5830	4
MR (Obs.)	26.92	4
MR (Calc.)	26.826	5
(nD-d/2)	0.94003	4
Dielectric	0.721	1
A | 102 to	8.22274	1
B | 255 °C	2072.75	1
C	205.	1
A* | 102 to	2.56483	5
B* | 209 °C	1981.3	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	8.61790	5
B' | 102 °C	2322.7	5
C'	223.	5
A'* 25 to	2.93736	5
B'* 102 °C	2218.6	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	198.84	5

		Ref.
dt/dP		
°C/mm		
25°C	64.35	5
BP	0.04151	5
t_e	0.02777	5
30 mm	0.6594	5
ΔHm cal/g		
ΔHv cal/g		
25°C	150.45	5
30 mm	138.66	5
BP	121.42	5
t_e	118.24	5
t_e (d, e)	118.04	5
$\Delta Hv/T_e$	25.58	5
d | 102 to	160.50	5
e | 199 °C	0.2135	5
d' | 25 to	154.27	5
e' | 102 °C	0.1526	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9490	5
t_e	0.9370	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	5.1542	1
40	3.0392	1
60	1.9954	1
80	1.4219	1
B^v | 30 to	912.3	4
A^v | 90 °C	3.56992	4
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension			
dynes/cm. 20°C		35.08	1
γ 30		34.14	1
40		33.23	1
Parachor [P]			
20°C		251.7	4
30		252.1	4
40		252.5	4
O = 20	Sugd.	235.0	5
Exp. L.1.%/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: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

No. 8

NAME	2-Methyl-1, 3-butanediol	STRUCTURAL FORMULA
		$CH_3CHOHCH\,CH_2OH$ CH_3

Mole % Pur.	Ref.	Molecular Formula $C_5H_{12}O_2$	Molecular Weight 104.146

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	211.68	1
100	153.58	1
30	126.27	4
10	104.73	5
1	67.32	5
Pressure		
mm 25°C	0.03131	5
t_e	1308.37	5
Density		
g/ml 20°C	0.98922	1
d_4^t 25	0.98545	1
30	0.98168	4
a	1.00430	4
b	-0.0_3754	4
Ref. Index		
n_D 20°C	1.44707	1
25	1.44532	1
30	1.43670	1
"C"	0.5988	4
MR (Obs.)	28.133	4
MR (Calc.)	28.34	5
(nD-d/2)	0.95246	4
Dielectric	721.	1
A | 126 to	8.22772	1
B | 288 °C	2195.80	1
C	199.0	1
A* | 126 to	2.55727	5
B* | 241 °C	2100.92	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	8.60128	5
B' | 126 °C	2445.55	5
C'	217.0	5
A'* 25 to	2.91925	5
B'* 126 °C	2341.44	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	230.62	5

		Ref.
dt/dP		
°C/mm		
25°C	332.601	5
BP	0.04388	4
t_e	0.02790	5
30 mm	0.6975	4
ΔHm cal/g		
ΔHv cal/g		
25°C	162.94	5
30 mm	126.27	4
BP	126.94	5
t_e	123.15	5
t_e (d, e)	122.86	5
$\Delta Hv/T_e$	25.46	5
d | 126 to	172.91	5
e | 231 °C	0.2170	5
d' | 25 to	167.24	5
e' | 126 °C	0.1721	5
d_c g/ml		
v_c ml/g		
t_c °C	474.7	5
P_c mm	99535.	5
PV/RT		
25°C	0.9998	5
30 mm	1.0000	5
BP	0.9470	5
t_e	0.9334	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	401.22	1
40	81.2830	1
60	23.9810	1
80	9.4381	1
B^v | 10 to	2383.45	4
A^v | 50 °C	6.22787	4
(B^v) | 50 to	3183.68	4
(A^v) | 90 °C	9.74500	4
c_p liq. °K		
c_p vap. °K		
c_v vap.		

			Ref.
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	42.75	1
γ	30	41.46	1
	40	40.20	1
Parachor [P]			
	20°C	255.95	4
	30	256.20	4
	40	256.51	4
	Sugd.	259.2	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: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE XI. MISCELLANEOUS ORGANIC COMPOUNDS

No. 9

NAME	cis-1-Cyano-1, 3-Butadiene		STRUCTURAL FORMULA
Mole % Pur. 99.80	Ref. 3	Molecular Formula C_5H_5N	Molecular Weight 79.098

$CH=CHCH=CH_2$

CN

		Ref.
F.P. °C		
F.P. 100%	-62.58	3
B.P. °C		
760 mm	134.6	3
100	74.9	3
30	47.85	4
10	27.0	5
1	-8.5	5
Pressure		
mm 25°C	8.940	5
t_e	1114.	5
Density		
g/ml 20°C	0.8621	4
d_4^t 25	0.8578	3
30	0.8535	4
a	0.8793	5
b	-0.0_3386	5
Ref. Index		
n_D 20°C	1.4860	4
25	1.4835	3
30	1.4810	4
"C"	0.7431	4
MR (Obs.)	26.342	4
MR (Calc.)	25.376	5
(nD-d/2)	0.0550	4
Dielectric		
A 50 to	7.376	3
B 210 °C	1639.	3
C	230.	3
A* 50 to	1.6121	5
B* 160 °C	1539.	5
K		
c		
t_k to		
t_x °C		
A' 25 to	7.748	5
B' 50 °C	1852.	5
C'	248.	5
A'* 25 to	1.962	5
B'* 50 °C	1739.	5
Ac 210 to	7.821	5
Bc t_c °C	2056.	5
Cc	283.	5
Cryos. A°	0.0034	3
consts. B°		5
t_e °C	148.6	5

		Ref.
dt/dP		
°C/mm		
25°C	1.9478	5
BP	0.04635	4
t_e	0.0341	5
30 mm	0.6818	4
ΔHm cal/g	$38.41 \pm 3.$	3
ΔHv cal/g		
25°C	128.29	5
30 mm	126.59	5
BP	113.44	5
t_e	111.20	5
t_e (d, e)	111.32	5
$\Delta Hv/T_e$	20.85	5
d 50 to	133.84	5
e 150 °C	0.1516	5
d' 25 to	130.14	5
e' 50 °C	0.0743	5
d_c g/ml		
v_c ml/g		
t_c °C	372.9	5
P_c mm	48651.	5
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9596	5
t_e	0.9493	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f	to		
g	°C		
h			
f'	to		
g'	°C		
h'			
m	to		
n	°K		
o			
m'	to		
n'	°K		
o'			
Surface tension			
dynes/cm. 20°C		11.81	5
30		11.35	5
40		10.89	5
Parachor [P]			
20°C			
30			
40			
Sugd.		170.1	5
Exp. L.1.%/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		1.5	3
Water in			

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)

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No.10

NAME	N, N-Dibutylaniline	STRUCTURAL FORMULA
Mole % Pur. 100.0	Ref. 1	Molecular Formula $C_{14}H_{23}N$
		Molecular Weight 205.332

		Ref.
F.P. °C	-32.20	1
F.P. 100%	-32.20	1
B.P. °C		
760 mm	274.75	4
100	199.33	5
30	165.18	4
10	138.79	5
1	94.04	5
Pressure		
mm 25°C	0.005012	5
t_e	1460.7	5
Density		
g/ml 20°C	0.90368	1
d_4^t 25	0.89995	1
30	0.89622	4
a	0.91860	4
b	-0.0_3746	4
Ref. Index		
n_D 20°C	1.51856	1
25	1.51632	1
30	1.50543	1
"C"	0.7533	4
MR (Obs.)	68.915	4
MR (Calc.)	68.711	5
(nD-d/2)	1.06672	4
Dielectric	4.349	1
A | 165 to	7.39225	5
B | 380 °C	2083.2	5
C	187.	5
A* | 165 to	1.99271	5
B* | 315 °C	1986.3	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	7.72816	5
B' | 165 °C	2326.5	5
C'	207.	5
A'* 25 to	2.32690	5
B'* 165 °C	2223.4	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°	0.03383	1
consts. B°		
t_e °C	305.75	5

		Ref.
dt/dP		
°C/mm		
25°C	2004.51	5
BP	0.05848	1
t_e	0.03465	5
30 mm	0.8619	4
ΔHm cal/g	19.00	4
ΔHv cal/g		
25°C	85.65	5
30 mm	71.93	4
BP	60.38	5
t_e	57.33	5
t_e (d, e)	57.11	5
$\Delta Hv/T_e$	20.33	5
d | 165 to	89.34	5
e | 305 °C	0.1054	5
d' | 25 to	88.10	5
e' | 165 °C	0.0979	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9301	5
t_e	0.9069	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	6.7988	1
40	3.5630	1
60	2.2214	1
80	1.5450	1
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.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		31.88	1
γ 30		31.11	1
40		30.19	1
Parachor [P]			
20°C		539.9	4
30		541.1	4
40		541.5	4
Sugd.		548.7	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			

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 H_2C $C(CH_3)COCH_3$ CH_3CO $C(CH_3)CH_2$

Mole % Pur.	Ref.	Molecular Formula $C_{10}H_{16}O_2$	Molecular Weight 168.228

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	199.0	4
100	128.39	4
30	97.22	4
10	73.43	5
1	33.64	5
Pressure		
mm 25°C	0.5491	5
t_e	1288.59	5
Density		
g/ml 20°C	0.9753	1
d_4^{25}	0.9707	1
d_4^{30}	0.9662	4
a	0.9935	4
b	-0.03391	4
Ref. Index		
n_D 20°C	1.45976	1
25	1.45756	1
30	1.45523	4
"C"	0.6235	4
MR (Obs.)	47.223	4
MR (Calc.)	46.202	5
(nD-d/2)	0.97213	4
Dielectric	5.30	1
A | 97 to	6.95237	1
B | 290 °C	1616.40	1
C	198.	1
A* | 97 to	1.48934	5
B* | 240 °C	1520.36	5
K		
c		
t_k | to		
t_x | °C		
A' | 25 to	7.32330	5
B' | 97 °C	1842.83	5
C'	218.	5
A'* 25 to	1.86868	5
B'* 97 °C	1742.93	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A*		
consts. B*		
t_e °C	222.69	5

		Ref.
dt/dP		
°C/mm		
25°C	25.3442	5
BP	0.05571	5
t_e	0.03690	5
30 mm	0.7806	4
ΔHm cal/g		
ΔHv cal/g		
25°C	75.48	5
30 mm	69.21	5
BP	58.79	5
t_e	56.51	5
t_e (d, e)	56.37	5
$\Delta Hv/T_e$	19.17	5
d | 97 to	79.17	5
e | 223 °C	0.1024	5
d' | 25 to	77.65	5
e' | 97 °C	0.0867	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9505	5
t_e	0.9340	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h			
f' | to			
g' | °C			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension			
dynes/cm. 20°C		29.84	1
γ 30		28.80	1
40		27.80	1
Parachor [P]			
20°C		403.16	4
30		403.37	4
2 D.bonds 40		403.62	4
O = 18 Sugd.		404.0	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			

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

SOURCE: Dow

PURIFICATION: Distillation

LITERATURE REFERENCES:

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 1

NAME	Air	STRUCTURAL FORMULA-3'
		N_2 Wt. 75.50 Vol. 78.06
		O_2 23.15 20.99
		A 1.292 0.9323
		CO_2 0.05 0.03
		Ne 0.0014 0.0018
		Kr 0.0001 0.0003

Mole % Pur.	Ref.	Molecular Formula	See struct. formula	Molecular Weight 28.97-3³

	Ref.			Ref.			Ref.
F.P. °C			dt/dP °C/mm 25°C BP t_e 30 mm			f | | to g | | °K h		
F.P. 100%								
B.P. °C 760 mm	-195.	3²	ΔHm cal/g			f' | | to g' | | °K h'		
100								
30			ΔHv cal/g 25°C 30 mm BP t_e t_e (d, e) $\Delta Hv/T_e$	49.59+0.014 P (P = % O_2)	3⁴	m | | to n | | °K o		
10								
1								
Pressure mm 25°C t_e						m' | | to n' | | °K o'		
Density g/ml 20°C d_4^t 25 30	≠		d | | to e | | °C d' | | to e' | | °C			Surface tension dynes/cm. 20°C γ -190.3 40	#11.61	3⁴
a								
b								
Ref. Index n_D ?°C 25 30	1.0₃293	3⁴	d_c g/ml	0.35	3	Parachor [P] 20°C 30 40 Sugd.		
			v_c ml/g	2.857	4			
			t_c °C	-140.7	3			
"C"			P_c mm	28272.	3			
MR (Obs.) MR (Calc.) (nD-d/2)			PV/RT 25°C 30 mm BP t_e t_c			Exp. L.1.%/wt. u. Dispersion		
Dielectric						Flash Point °C Fire Point		
A | | to B | | °C C			ΔHc kcal/m ΔHf ΔFf			M Spec. Ultra V. X-Ray Dif. Infrared		
A* | | to B* | | °C K c			Viscosity centistokes η poise 20°C	180.8x10⁻⁶	3²	Solubility in + Acetone Carbon tet. Benzene Ether n-Heptane Ethanol Water Water in	0.367	3'
t_k | | to t_x | | °C								
A' | | to B' | | °C C'			B^v | | to A^v | | °C					
A'* to B'* °C			(B^v) | | to (A^v) | | °C			Density of vapor 20°C 25 30	0.0012046 0.0011843 0.001165	3' 3' 3'
Ac | | to Bc | t_c | °C Cc			c_p liq. °K					
Cryos. A° consts. B°			c_p vap. °K					
t_e °C			c_v vap.					

≠ 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; 3² ICT; 3³ J. Applied Mech. A10, 123, Keenan and Kaye; 3⁴ 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
		$N\equiv H_3$

Mole % Pur. 99.99	Ref. 3	Molecular Formula NH_3	Molecular Weight 17.032

		Ref.
F.P. °C	-77.7	3³
F.P. 100%		
B.P. °C		
760 mm	-33.34	3
100	-67.37	4
30	-82.90	5
10	-94.91	5
1		
Pressure mm 25°C	7589.	4
t_e	640.4	5
Density g/ml -20°C	0.6650	3²
d^t_4 -25	0.6700	4
-30	0.6777	3²
a	0.6420	3²
b	-0.00121	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.)		
(nD-d/2)		
Dielectric		
A | -83 to	7.55466	4
B | 60 °C	1002.711	4
C	247.885	4
A* | -83 to	1.33296	5
B* | 80 °C	940.24	5
K	10.01	4
c	-0.05883	4
t_k | to	8.0	4
t_x | °C	175.0	5
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | 70 to	8.70513	4
Bc | t_c °C	1930.07	4
Cc	378.6	4
Cryos. A*		
consts. B*		
t_e °C	-36.70	5

		Ref.
dt/dP		
°C/mm		
25°C	0.00425	4
BP	0.02623	4
t_e	0.03016	5
30 mm	0.3930	4
ΔHm cal/g		
ΔHv cal/g		
25°C	284.68	4
30 mm	358.38	5
BP	326.44	4
t_e	328.66	4
t_e (d, e)	328.60	5
$\Delta Hv/T_e$	23.67	4
d | -83 to	304.94	4
e | 20 °C	0.6446	4
d' | -15 to	301.2	4
e' | +30 °C	0.8700	4
d_c g/ml	0.235	3³
v_c ml/g	4.255	3³
t_c °C	132.4	3³
P_c mm	84740.	3³
PV/RT		
25°C	0.8850	4
30 mm	1.0000	5
BP	0.9701	4
t_e	0.9732	5
t_c	0.216	4
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. -20 °C	1.126	3³
-40	1.162	3³
c_p vap. -25°C	0.967	3⁴
0	0.846	3⁴
c_v vap. 25		
300		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. -20°C	38.88	5
ϑ -30	41.29	5
-40	44.55	5
Parachor [P] 20°C		
30		
40		
Sugd.	63.8	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	47.15	3'
Water in		

+ 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' Lange's Hdbk. 8th ed., p. 1081; 3² Sci. Papers Bur. Stand. 17, 287(1922) Crazoe and Harper; 3³ Sci. Papers Bur. Stand. 18, 689(1923) McKelsey and Taylor; 3⁴ 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.
F. P. °C	-7.42	1
F. P. 100%	-7.27	1
B. P. °C		
760 mm	58.72	1
100	7.79	4
30	-14.4	4
10	-31.8	4
1	-58.5	5
Pressure mm 25°C	217.4	5
t_e	907.1	5
Density g/ml 20°C	3.11870	1
d_4^{t} 25	3.10171	1
30	3.08466	4
a	3.18690	4
b	-0.00333	4
Ref. Index n_D 20°C	1.6083	5
25		
30		
"C"	0.2533	4
MR (Obs.)	17.730	5
MR (Calc.)	0.0490	5
(nD-d/2)		
Dielectric	3.334 ≠	3²
A | -20 to	6.95897	1
B | 160 °C	1169.3	1
C	228.0	5
A* | -20 to	1.58237	5
B* | 80 °C	1090.0	
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°	0.01257	1
consts. B°		
t_e °C	64.23	5

		Ref.
dt/dP °C/mm		
25°C	0.1093	5
BP	0.0402	4
t_e	0.035	5
30 mm	0.5633	
ΔHm cal/g		
ΔHv cal/g		
25°C	46.22	5
30 mm	49.29	5
BP	43.51	5
t_e	42.98	5
t_e (d, e)	43.14	5
ΔHv/T_e	20.36	5
d | -20 to	48.19	5
e | 65 °C	0.0787	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	0.9940	5
30 mm	1.0000	5
BP	0.9721	5
t_e	0.9662	5
t_c	0.2880	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 20 °C	0.3143	1
30	0.2876	1
40	0.2643	1
50	0.2446	1
B^v | 25 to	344.60	4
A^v | 60 °C	2.3223	4
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension		
dynes/cm. 20°C	49.49	5
30	47.32	5
40	45.19	5
Parachor [P] 20°C		
30		
40		
Sugd.	136.0	5
Exp. L. 1. %/wt. u.		
Dispersion		
Flash Point °C	none	
Fire Point	none	
M. Spec.		
Ultra V.		
X-Ray Dif.		
Infrared		
Solubility in		
Acetone		
Carbon tet.		
Benzene		
Ether		
n-Heptane		
Ethanol		
Water 0°C	4.22	3
Water in		

$T_R = 0.75\ T_c$ ≠ 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' Chem. Rev. 52, 117 (1953) Kohe and Lynn; 3² T. Physik 66, 657 (1930) D. Doborzynski

No. 4

NAME	Carbon bisulfide Carbon disulfide	STRUCTURAL FORMULA
Mole % Pur.	Molecular Formula CS_2	S=C=S
Ref.	Molecular Weight 76.142	

		Ref.
F.P. °C	-111.53	3²
F.P. 100%		
B.P. °C		
760 mm	46.25	3'
100	-5.09	4
30	-27.60	4
10	-44.63	4
1	-72.63	4
Pressure		
mm 25°C	361.6	4
t_e	860.7	5
Density		
g/ml 15°C	1.2632	3'
d_4^t 25	1.25585	3'
30	1.2500	4
a	1.2746	4
b	-0.00076	4
Ref. Index		
n_D 15°C	1.6319	3²
25	1.62794	4
30		
"C"	0.6479	4
MR (Obs.)	21.492	4
MR (Calc.)	21.264	5
(nD-d/2)	1.0003	4
Dielectric	2.6246	3'
A | -10 to	6.85145	4
B | 160 °C	1122.50	4
C	236.46	4
A* | -30 to	1.17800	4
B* | 220 °C	1045.22	4
K	47.64	4
c	0.23628	4
t_k | to	125.0	4
t_x | °C	327.	5
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | 160 to	7.16623	4
Bc | t_c °C	1341.93	4
Cc	266.54	4
Cryos. A°		
consts. B°		
t_e °C	50.14	5

		Ref.
dt/dP		
°C/mm		
25°C	0.07314	4
BP	0.040664	4
t_e	0.03692	5
30 mm	0.5626	4
ΔHm cal/g	13.802	3²
ΔHv cal/g		
25°C	85.66	5
30 mm	93.26	5
BP	82.68	5
t_e	81.84	5
t_e (d, e)	82.13	5
$\Delta Hv/T_e$	19.27	5
d | -20 to	89.31	5
e | 50 °C	0.1433	5
d' | to		
e' | °C		
d_c g/ml	0.3679	3'
v_c ml/g	2.718	4
t_c °C	273.0	3'
P_c mm	57760.	3'
PV/RT		
25°C	0.9773	5
30 mm	1.0000	5
BP	0.9600	5
t_e	0.9567	5
t_c	0.3475	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 0 °C	0.3453	3²
15	0.3032	3²
20	0.2916	3²
35	0.2660	3²
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq.		
-24.27°C	0.2387	3²
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h'		
m | to		
n | °K		
o		
m' | to		
n' | °K		
o'		
Surface tension		
dynes/cm. 20°C	33.07	3²
γ 30	32.25	3²
40	30.79	3²
Parachor [P]		
15°C	144.66	4
-20	144.19	4
-30	143.42	4
Sugd.	147.4	5
Exp. L.1.%/wt. u.		
Dispersion		
Flash Point °C	-30.0	3³
Fire Point		
M. Spec.	Yes	1
Ultra V.		
X-Ray Dif.		
Infrared	218.	1
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:

PURIFICATION:

LITERATURE REFERENCES: 3' Lange's Hdbk.; 3² Timmermans; 3³ Product Data Index No. 25304 J. T. Baker Chem. Co.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 5

NAME	Carbon dioxide	STRUCTURAL FORMULA
		O=C=O

Mole % Pur.	Ref. 3	Molecular Formula CO_2	Molecular Weight 44.01

		Ref.
F. P. °C	-56.6	3²
F. P. 100%		
B. P. °C		
760 mm	-78.48	3'
100	-100.16	4
30		
10	-118.31	4
1	-142.01	4
Pressure		
mm 25°C	6.164	4
t_e	512.0	5
Density		
g/ml-10°C	0.9810	3²
d_4^t -20	1.0310	3²
-30	1.0750	3²
a	1.0269	4
b	-0.0035	4
Ref. Index		
n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.)	7.075	5
(nD-d/2)		
Dielectric		
A | -110 to	8.15406	4
B | -56 °C	799.02	4
C	230.0	4
A* | -83 to	2.45584	5
B* | -110 °C	757.66	5
K	-10.72	4
c	0.	4
t_k | to	-40.0	5
t_x | °C	61.4	5
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | -56 to	7.57007	4
Bc | t_c °C	860.36	4
Cc	273.0	4
Cryos. A° consts. B°		
t_e °C	-83.25	5

		Ref.
dt/dP °C/mm		
-121.5°C	1.0380	4
BP	0.01642	4
t_e	0.02286	5
30 mm		
ΔHm cal/g		
ΔHv cal/g		
-121.5°C	156.5	5
30 mm	1.0000	5
BP	132.4	5
t_e	134.6	5
t_e (d, e)		
$\Delta Hv/T_e$	31.18	5
d | to		
e | °C		
d' | to		
e' | °C		
d_c g/ml	0.4587	3'
v_c ml/g	2.1800	3'
t_c °C	30.96	3'
P_c mm	55427.	3'
PV/RT		
-121.5°C	156.5	5
30 mm		
BP	0.9650	5
t_e	0.9366	5
t_c	0.2803	4
ΔHc kcal/m		
ΔHf	336.0	3³
ΔFf		
Viscosity centistokes		
η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h |		
f' | to		
g' | °C		
h' |		
m | to		
n | °K		
o |		
m' | to		
n' | °K		
o' |		
Surface tension dynes/cm. 20°C		
σ 30		
40		
Parachor [P]		
20°C		
30		
40		
Sugd.	91.2	5
Exp. L. l. %/wt. u.		
Dispersion		
Flash Point °C	None	1
Fire Point	None	1
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:

PURIFICATION:

LITERATURE REFERENCES: 3' Timmermans; 3² Lange; 3³ Glasstone, Textbook of Phys. Chem. (1946), p. 590.

No. 6

NAME	Carbon monoxide	STRUCTURAL FORMULA
		$^{-}C{\equiv}O^{+}$

Mole % Pur.	Ref. 3	Molecular Formula CO	Molecular Weight 28.01

		Ref.
F.P. °C	-205.06	2
F.P. 100%		
B.P. °C 760 mm	-191.47	3
100	-205.7	4
30	-211.655	4
10		
1		
Pressure mm 25°C t_e	197.60	5
Density g/ml -141.73	0.42200	3
d_4^t -165.50	0.66168	3
-190.86	0.79086	3
a -178.73 to*	0.72342	4
b -172.18	-0.00353	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.) MR (Calc.) (nD-d/2)	4.629	5
Dielectric		
A -210 to	6.24020	4
B -165 °C	230.274	4
C	260.0	4
A* to	0.74163	4
B* °C	212.78	4
K		
c		
t_k to		
t_x °C		
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac -165 to	8.49178	5
Bc t_c °C	783.48	5
Cc	332.58	5
Cryos. A° consts. B°		
t_e °C	-201.62	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.01166	4
t_e	0.03253	5
30 mm	0.1458	4
ΔHm cal/g	7.175	3²
ΔHv cal/g 25°C		
30 mm	61.44	5
BP	51.557	3
t_e	56.02	5
t_e (d, e)	56.11	5
$\Delta Hv/T_e$	21.92	5
d -210 to	42.19	5
e -180 °C	0.4896	5
d' to		
e' °C		
d_c g/ml	0.3010	3
v_c ml/g	3.322	3
t_c °C	-140.21	3
P_c mm	26242.	3
PV/RT 25°C		
30 mm	1.0000	5
BP	0.9637	4
t_e	0.9922	5
t_c	0.2944	3
ΔHc kcal/m	0.6765	2
ΔHf	26.8	3³
ΔFf		
Viscosity centistokes η °C		
B^v to		
A^v °C		
(B^v) to		
(A^v) °C		
c_p liq. -191.79°C	0.5268	3'
c_p vap. -244.4	0.2074	3²
-206.8	0.4414	3²
c_v vap.		

			Ref.
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 -165.50		4.484	5
40			
Parachor [P] 20°C			
30			
40			
Sugd.		61.6	3³
Exp. L.1.%/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 = d_v + d_l at -178.73°

+ 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. Konenkl Nederland. Weten Schappen 34, 1314 (1931), Crommelin et al.; 3' Z. Physik. Chem. B3, 41 (1929), K. Clusius; 3² Z. Physik. Chem. B40, 273 (1938), R. Kaischew; 3³ 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

		Ref.
F.P. °C	-127.76	3²
F.P. 100%		
B.P. °C		
760 mm	7.56	3²
100	-35.65	4
30	-54.6	4
10	-68.91	4
1	-92.45	4
Pressure mm 25°C	1418.0	4
t_e	759.4	5
Density g/ml 20°C	1.381	3'
d_4^t 25	1.369	4
30	1.357	3'
a	1.432	4
b	-0.0022	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	10.596	5
Dielectric		
A -60 to	6.84297	4
B 68 °C	941.25	4
C	230.	4
A* to	1.33370	5
B* °C	876.27	5
K	26.65	4
c	-0.21911	4
t_k to	60.0	4
t_x °C	227.4	5
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac 68 to	8.0270	5
Bc t_c °C	1779.3	5
Cc	341.73	5
Cryos. A° consts. B°		
t_e °C	7.54	5

		Ref.
dt/dP °C/mm		
25°C	0.02116	4
BP	0.03426	4
t_e	0.03428	5
30 mm	0.4732	4
ΔHm cal/g	13.86	3²
ΔHv cal/g		
25°C	56.52	5
30 mm	67.61	5
BP	58.95	3²
t_e	58.96	5
t_e (d, e)	58.95	5
$\Delta Hv/T_e$	20.77	5
d -60 to	60.00	5
e 15 °C	0.1393	5
d' to		
e' °C		
d_c g/ml	0.520	3'
v_c ml/g	1.923	4
t_c °C	181.9	3²
P_c mm	42560.	3²
PV/RT		
25°C	0.9492	5
30 mm	1.0000	5
BP	0.9724	4
t_e	0.9722	5
t_c	0.285	4
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. 20°C	0.2429	3²
c_p vap. °K		
c_v vap.		

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension dynes/cm. 20°C		11.44	5
σ 30		10.60	5
40		9.52	5
Parachor [P] 20°C			
30			
40			
Sugd.		132.4	5
Exp. L.1.%/wt. u.			
Dispersion			
Flash Point °C			
Fire Point			
M. Spec.		Yes	1
Ultra V.			
X-Ray Dif.			
Infrared		Yes	1
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:

PURIFICATION:

LITERATURE REFERENCES: 3' Lange; 3² JACS 70, 120 (1948) Giauque and Jones.

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

No. 8

NAME	Chlorine	STRUCTURAL FORMULA
		Cl-Cl

Mole % Pur.	Ref.	Molecular Formula Cl_2	Molecular Weight 70.914

		Ref.
F.P. °C	-100.98	2
F.P. 100%		
B.P. °C		
760 mm	-34.05	2
100	-71.32	4
30		4
10	-100.06	4
1	-120.44	4
Pressure mm 25°C	5878.0	4
t_e	636.7	5
Density g/ml 20°C	1.408	3'
d_4^t 25	1.391	3'
30	1.377	3'
a	1.4778	4
b	-0.00236	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	11.934	5
Dielectric		
A to	6.86773	4
B °C	821.107	4
C	240.	4
A* to	1.33933	4
B* °C	775.711	4
K	15.86	4
c	-0.09938	4
t_k to	30.0	4
t_x °C	188.0	5
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac to		
Bc t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	-37.846	5

		Ref.
dt/dP		
°C/mm		
25°C	0.00632	5
BP	0.02952	5
t_e	0.03391	5
30 mm		
ΔHm cal/g	21.59	2
ΔHv cal/g		
25°C	57.14	4
30 mm		
BP	68.8	2
t_e	69.76	5
t_e (d, e)		
$\Delta Hv/T_e$	21.02	4
d to		
e °C		
d' to		
e' °C		
d_c g/ml	0.573	3'
v_c ml/g	1.745	3'
t_c °C	146.	3'
P_c mm	71060.	3'
PV/RT		
25°C	0.8678	4
30 mm	1.0000	5
BP	0.9652	4
t_e	0.9726	4
t_c	0.3364	4
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.		

			Ref.
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		21.62	5
γ 30		19.78	5
40		18.07	5
Parachor [P]			
20°C			
30			
40			
Sugd.		108.60	5
Exp. L. 1. %/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			

* 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.

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 9

NAME	Hydrazine		STRUCTURAL FORMULA
Mole % Pur.	Ref.	Molecular Formula N_2H_4	Molecular Weight 32.048

		Ref.
F.P. °C	2.0	3
F.P. 100%		
B.P. °C		
760 mm	113.13	4
100	62.61	4
30	39.31	4
10	21.1	5
1	-10.3	5
Pressure		
mm 25°C	12.820	5
t_e	1043.0	5
Density		
g/ml 20°C	1.0079	4
d_4^t 25	1.0036	3
30	0.9992	4
a	1.0253	3
b	-0.00087	4
Ref. Index		
n_D 20°C	1.47074	4
25	1.46867	4
35	1.46444	3
"C" 35	0.6169	4
MR (Obs.)	35 8.90	4
MR (Calc.)	9.34	5
(nD-d/2)	35 0.96704	4
Dielectric		
A | 39 to	7.77306	4
B | 250 °C	1620.0	4
C	218.0	4
A* | to	1.66688	5
B* | °C	1537.1	5
K		
c		
t_k | to		
t_x | °C		
A' | -10 to	8.26230	5
B' | 39 °C	1881.6	5
C'	238.0	5
A'* to		
B'* °C		
Ac | 250 to	8.39858	5
Bc | t_c °C	2258.5	5
Cc	302.6	5
Cryos. A*		
consts. B*		
t_e °C	122.70	5

		Ref.
dt/dP		
°C/mm		
25°C	7.2453	5
BP	0.03868	4
t_e	0.02983	5
30 mm	0.5916	4
ΔHm cal/g	94.39	3
ΔHv cal/g		
25°C	345.4	5
30 mm	341.2	5
BP	300.7	5
t_e	295.7	5
t_e (d, e)	295.5	5
ΔHv/T_e	239.5	5
d | 39 to	362.8	5
e | 130 °C	0.5486	5
d' | 0 to	352.7	5
e' | 39 °C	0.2935	5
d_c g/ml		
v_c ml/g		
t_c °C	380.0	3
P_c mm	123000.	4
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9550	5
t_e	0.9469	5
t_c		
ΔHc kcal/m	148.635	3
ΔHf	12.00	3
ΔFf		
Viscosity centistokes		
η 10 °C	1.0997	3
15	1.0313	3
20	0.9660	3
25	0.9016	3
B^v | 10 to	314.32	4
A^v | 35 °C	2.90095	4
(B^v) |		
(A^v) | .		
c_p liq. 17°C	0.7336	3
37	0.7426	3
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension			
dynes/cm. 20°C		74.76	5
γ 35		62.3	3
40		69.76	5
Parachor [P]			
20°C			
35		90.5	4
40			
Sugd.		93.5	5
Exp. L.1.%/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:

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.
F. P. °C	-259.20	3
F. P. 100%		
B. P. °C 760 mm	-252.78	3
100	-258.1	4
30	-259.2	3
12.7*	-261.16	3
1.7*	-263.16	3
Pressure mm 25°C t_e		
Density g/ml -259.16	0.07718	3
d_4^t BP	0.07097	3
d_4^t -247.16	0.06301	3
a at BP	0.072305	4
b	-0.03785	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)		
Dielectric		
A | -259 to	5.92088	4
B | -248 °C	71.615	4
C	276.337	4
A* | -259 to	T. 84968	4
B* | -243 °C	64.175	4
K	1.13	4
c	-0.06955	4
t_k | to	-249.0	4
t_x | °C	-236.65	5
A' | to		
B' | °C		
C'		
A'* to		
B'* °C		
Ac | -248 to	7.37918	4
Bc | t_c °C	185.154	4
Cc	294.667	4
Cryos. A° consts. B°		
t_e °C		

		Ref.
dt/dP °C/mm 25°C BP	0.024428	4
t_e 30 mm	0.03278	4
ΔHm cal/g	13.889	3
ΔHv cal/g 25°C 30 mm	107.04	4
BP	107.79	4
t_e		
t_e (d, e)		
ΔHv/T_e		
d | -259.2 to	33.35	4
e | -252.5 °C	0.2945	4
d' | to		
e' | °C		
d_c g/ml	0.3011	3
v_c ml/g	33.209	3
t_c °C	-239.97	3
P_c mm	9865.	3
PV/RT 14°K	0.98415	3
30 mm	0.98415	3
BP	0.9030	4
22°K	0.87420	3
t_c	0.3115	3
ΔHc kcal/m	57.7979	2
ΔHf		
ΔFf		
Viscosity centistokes η gaseous °C -252.16	0.819	3
-243.2	0.1537	3
B^v | to		
A^v | °C		
(B^v) | to		
(A^v) | °C		
c_p liq. °C		
c_p vap. 25°C	3.4186	2
300	3.4722	2
c_v vap.		

			Ref.
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. 1. %/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		0.03 1535	3'
Water in			

*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

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 11

NAME	Hydrogen Bromide Hydrobromic Acid	STRUCTURAL FORMULA
Mole % Pur.	Ref. Molecular Formula HBr	Molecular Weight 80.924

HBr

		Ref.
F.P. °C	-87.04	3
F.P. 100%		
B.P. °C		
760 mm	-66.82	3
100	-99.9	5
30	-114.6 *	4
10	-125.4	5
1	-143.5 ?	5
Pressure mm 25°C	17920.	5
t_e	534.9	4
Density g/ml -67.1°C	2.717	3³
d_4^t -60	2.238	3³
-46	2.174	3³
a -67°C =	2.729	4
b 0 Point	0.06718	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	9.865	5
Dielectric		
A | -120 to	6.88059	4
B | -60 °C	732.68	4
C	250.	5
A* | -120 to	1.40844	4
B* | -40 °C	679.5	4
K		
c		
t_k | to		
t_x | °C		
A' | -120 to	8.4622	4
B' | -87 °C	1112.4	4
C' Solid	270.	5
A'* to		
B'* °C		
Ac | -60 to	7.18977	4
Bc | t_c °C	8127.8	4
Cc	251.8	4
Cryos. A°		
consts. B°		
t_e °C	-73.55	4

		Ref.
dt/dP °C/mm		
25°C	0.01088	5
BP	0.02617	4
t_e	0.03450	4
30 mm	0.3633	4
ΔHm cal/g	7.11	3
ΔHv cal/g 25°C		
30 mm	56.67	5
BP	49.84	4
t_e	51.01	5
t_e (d, e)	50.81	5
$\Delta Hv/T_e$	20.68	5
d | -120 to	40.30	5
e | -75 °C	0.1429	5
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C	90.0	3²
P_c mm	63840.	3²
PV/RT 25°C		
30 mm	1.0000	5
BP	0.9560	4
t_e	0.9629	4
t_c		
ΔHc kcal/m		
ΔHf	3500.	3'
ΔFf		
Viscosity centistokes η °C		
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. 35 °C	0.9974	3⁴
40	0.9898	3⁴
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °C			
h |			
f' | to			
g' | °C			
h' |			
m | to			
n | °K			
o |			
m' | to			
n' | °K			
o' |			
Surface tension dynes/cm,	-67.1°C	27.07	3³
σ	-60	25.54	3³
	-46	22.67	3³
Parachor [P]	-67.1°C	81.39	3³
	-60.	81.53	3³
	-46	81.86	3³
	Sugd.	85.1	5
Exp. L.1.%/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			

*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) Giauque 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).

No. 12

NAME	Hydrogen Chloride Hydrochloric Acid	STRUCTURAL FORMULA
Mole % Pur.	Ref.	Molecular Formula HCl
		Molecular Weight 36.465

HCl

		Ref.
F. P. °C	-114.19	2
F. P. 100%		
B. P. °C		
760 mm	-85.03	3'
100	-114.61	4
30	-127.75	4
10	-137.77	4
1	-154.37	4
Pressure mm 25°C	35520.	4
t_e	482.8	5
Density g/ml 20°C	0.831	3'
d_4^t 25	0.802	4
30	0.772	3'
a	0.9800	4
b	-0.00260	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	8.385	5
Dielectric		
A -127 to	7.06145	4
B -60 °C	710.584	4
C	255.0	4
A* -127 to	1.35658	4
B* -20 °C	672.85	4
K	12.78	4
c	-0.12308	4
t_k -20 to	-20.0	4
t_x +30 °C	83.9	4
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac -60 to	7.91458	4
Bc t_c °C	1146.89	4
Cc	315.916	
Cryos. A° consts. B°		
t_e °C	-92.68	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.02323	4
t_e	0.03217	4
30 mm	0.3799	4
ΔHm cal/g	13.05	2
ΔHv cal/g 25°C		
30 mm	116.48	5
BP	103.12	4
t_e	105.99	5
t_e (d, e)	105.51	5
$\Delta Hv/T_e$	21.41	5
d -130 to	76.53	5
e -90 °C	0.3127	5
d' to		
e' °C		
d_c g/ml	0.4214	3'
v_c ml/g	2.35	3'
t_c °C	51.4	3'
P_c mm	61978.	3'
PV/RT 25°C		
30 mm	1.0000	5
BP	0.9447	3'
t_e	0.9615	5
t_c	0.2624	4
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.		

		Ref.
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.	59.1	5
Exp. L. l. %/wt. u.		
Dispersion		
Flash Point °C	None	1
Fire Point	None	1
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:

PURIFICATION:

LITERATURE REFERENCES: 3' - Lange (Young)

No association in vapor phase above B. P. at least.

No. 13

NAME	Hydrogen fluoride Hydrofluoric acid	STRUCTURAL FORMULA HF
Mole % Pur. 99.75	Ref. 3	Molecular Formula HF — Molecular Weight 20.008

		Ref.
F.P. °C	-83.76	3
F.P. 100%		
B.P. °C		
760 mm	19.52	3
100	-29.5	4
30	-52.7	4
10	-71.0	5
1	-102.5 ?	5
Pressure mm 25°C	921.4	4
t_e	819.1	5
Density g/ml -60°C	1.1660	3'
d_4^t -30	1.0735	3'
0	1.0015	3'
a	1.0035	4
b	-0.002333	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)	2.05	5
Dielectric	83.6	3'
A | -55 to	8.38036	3
B | °C	1952.55	3
C	335.52	3
A* | -55 to	1.93767	4
B* | 40 °C	1781.1	4
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	21.63	5

		Ref.
dt/dP °C/mm		
25°C	0.03137	5
BP	0.03689	4
t_e	0.03464	5
30 mm	0.5931	4
ΔHm cal/g	54.68	3'
ΔHv cal/g		
25°C	84.45	3
30 mm x Mx	271.4	5
BP	80.45	3
t_e	79.09	5
t_e (d, e)		
$\Delta Hv/T_e$	19.27	5
d | to		
e | °C		
d' | to		
e' | °C		
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.9939	4
t_e	0.9985	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η -50 °C	0.507	3'
-25	0.330	3'
0	0.256	3'
B^v | to		
A^v | °C		
(B^v) | to		
(A^v) | °C		
c_p liq. -32.2°C	0.7546	3'
-2.2	0.8372	3'
c_p vap. °K		
c_v vap.		

			Ref.
f | to			
g | °K			
h			
f' | to			
g' | °K			
h'			
m | to			
n | °K			
o			
m' | to			
n' | °K			
o'			
Surface tension dynes/cm.	-40°C	13.6	3'
γ	-20	11.7	3'
	0	10.1	3'
Parachor [P]	20°C	35.68	4
	30	35.23	4
	40	35.03	4
F = 18.3	Sugd.	35.4	5
Exp. L.1.%/wt. u.			
Dispersion			
Flash Point °C			
Fire Point			
Association	0°C	4.717	3
Mx	10	4.148	3
	20	3.743	3
	30	3.438	3
	40	3.203	3
	50	3.015	3
	60	2.861	3
	70	2.734	3
	80	2.625	3
	90	2.534	3
	100	2.453	3
	105	2.417	3

+ 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.

No. 14

NAME	Mercury	STRUCTURAL FORMULA
		Hg

Mole % Pur. 100. ?	Ref.	Molecular Formula Hg	Molecular Weight 200.610

		Ref.
F.P. °C	-36.87	3
F.P. 100%		
B.P. °C		
760 mm	356.706	3
100	261.499	3
30		
10	183.655	3
1	126.287	3
Pressure mm 25°C	0.00184	3
t_e	1874.2	4
Density g/ml 20°C	13.5464	3
d_4^t 25	13.5342	3
30	13.5219	3
a	13.5952	4
b	-0.0$_3$24	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.)		
(nD-d/2)		
Dielectric		
A 300 to	7.69059	4
B 400 °C	2958.841	4
C	258.460	4
A* 300 to	2.03041	4
B* 412 °C	2731.663	4
K		
A*"	2.09632	4
B*" 200 to	2787.01	4
C*" 300 °C	262.48	4
A' 100 to	7.46905	4
B' 200 °C	2771.898	4
C'	244.831	4
A'* 100 to	1.89241	4
B'* 200 °C	2590.7	4
Ac 800 to	7.74599	4
Bc 1300 °C	3049.646	4
Cc	269.563	4
Cryos. A° consts. B°		
t_e °C	411.298	4

		Ref.
dt/dP °C/mm		
25°C	6456.37	4
BP	0.07309	4
t_e	0.03513	4
30 mm		
ΔHm cal/g		
ΔHv cal/g		
25°C		
30 mm		
BP	70.613	5
t_e	70.185	5
t_e (d, e)	70.205	4
$\Delta Hv/T_e$	20.57	4
d 217 to	73.382	4
e 410 °C	0.00777	4
d' 20 to	73.426	4
e' 217 °C	0.00797	4
d_c g/ml	6.6878	5
v_c ml/g	0.1495	5
t_c °C	900.	5
P_c mm	136800.	5
PV/RT		
25°C	1.0000	4
30 mm		
BP	0.9979	4
t_e	0.9841	4
t_c	0.545	5
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v) to		
(A^v) °C		
c_p liq. °C	0.0332	3
	0.0331	3
c_p vap. °K		
c_v vap.		

		Ref.
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	None	
Fire Point	None	
M Spec.		
Ultra V.		
X-Ray Dif.		
Infrared		
Solubility in +		
Acetone		
Carbon tet.		
Benzene		
Ether		
n-Heptane		
Ethanol		
Water		
Water in		
A" 200 to	7.7324	4
B" 300 °C	3008.68	4
C"	262.482	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; 3' Jr. Res. NBS 46, No. 4334 (1951); 3^2 I.C.T.

A"'	10 to	7.3119	4
B"'	100 °C	2762.75	4
C"'		250.00	4

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

In PHYSICAL PROPERTIES OF CHEMICAL COMPOUNDS—III; DREISBACH, R.;
Advances in Chemistry; American Chemical Society: Washington, DC, 1961.

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 15

NAME	Nitrogen	STRUCTURAL FORMULA
Mole % Pur.	Ref. Molecular Formula N_2	Molecular Weight 28.016

		Ref.
F. P. °C	-210.02	3
F. P. 100%		
B. P. °C		
760 mm	-195.82	3
100	-209.83	3
30	-215.98≠	
10	-228.3	5
1		
Pressure mm 25°C		
t_e	182.17	5
Density		
g/ml -208.36°	0.8622	3
d^t -205.45	0.8265	3
d^4 -195.09	0.8043	3
a -207 to	0.0192	4
b -182 °C	-0.00405	4
Ref. Index		
n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.)		
(nD-d/2)		
Dielectric		
A -210to	6.86606	4
B -180°C	308.365	4
C	273.2	5
A* -210 to	1.30995	4
B* -157 °C	282.739	4
K	5.774	4
c	-0.16054	4
t_k to	-170.0	4
t_x °C	-134.5	5
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac -180 to	5.80356	4
Bc t_c °C	121.88	4
Cc	234.3	4
Cryos. A°		
consts. B°		
t_e °C	-206.1	5

		Ref.
dt/dP		
°C/mm		
25°C		
BP	0.01109	4
t_e	0.03480	5
30 mm	0.1537	4
ΔHm cal/g	6.14	3³
ΔHv cal/g		
25°C		
30 mm	50.36	5
BP	48.8	4
t_e	49.09	5
t_e (d, e)	49.59	5
$\Delta Hv/T_e$	20.50	5
d -205 to	33.63	5
e -190 °C	0.0774	5
d' to		
e' °C		
d_c g/ml	0.3110	3'
v_c ml/g	3.215	3'
t_c °C	-147.1	3'
P_c mm	25460.	3'
PV/RT		
25°C		
30 mm	1.0000	5
BP	0.9690	4
t_e	0.9758	5
t_c	0.2916	4
ΔHc kcal/m		
ΔHf	0	
ΔFf	0	
Viscosity		
centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. 25 °C	0.2484	2
300		
c_v vap.		

			Ref.
f to			
g °C			
h			
f' to			
g' °C			
h'			
m to			
n °K			
o			
m' to			
n' °K			
o'			
Surface tension			
dynes/cm. 20°C			
σ 30			
40			
Parachor [P]			
20°C			
30			
40			
Sugd.	12.5		5
Exp. L. l. %/wt. u.			
Dispersion			
Flash Point °C	None		
Fire Point	None		
M. Spec.			
Ultra V.			
X-Ray Dif.			
Infrared			
Solubility in			
Acetone			
Carbon tet.			
Benzene			
Ether			
n-Heptane			
Ethanol			
Water	0.001751		3²
Water in			

≠ 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' ICT; 3² Lange's Hdbk. 8th Ed., p. 1083; 3³ JACS 55, 4875 (1933) Giauque & Clayton.

No. 16

NAME	Nitrous Oxide	STRUCTURAL FORMULA
Mole % Pur.	Ref.	Molecular Formula N_2O	Molecular Weight 44.016

		Ref.
F.P. °C		
F.P. 100%		
B.P. °C		
760 mm	-89.5	3'
100	-117.75	4
30		
10	-139.77	4
1	-155.51	4
Pressure mm 25°C	42980.	4
t_e	463.0	5
Density g/ml 20°C	0.784	3'
d_4^t 25	0.732	4
30	0.679	3'
a	0.997	4
b	-0.00260	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.)		
(nD-d/2)		
Dielectric		
A to	7.00467	4
B °C	661.88	4
C	250.0	5
A* to	1.29209	4
B* °C	610.02	4
K	7.3785	4
c	-0.03827	4
t_k to	-50.0	4
t_x °C	58.66	4
A' to		
B' °C		
C'		
A'* to		
B'* °C		
≠ Ac to	7.20195	4
Bc t_c °C	706.4	4
Cc		
Cryos. A°		
consts. B°		
t_e °C	-97.46	4

		Ref.
dt/dP °C/mm 25°C		
BP	0.02224	4
t_e 30 mm	0.03297	5
ΔHm cal/g		
ΔHv cal/g 25°C	34.90	4
30 mm BP	84.70	4
t_e	86.36	5
t_e (d, e)		
$\Delta Hv/T_e$	21.63	5
d to		
e °C		
d' to		
e' °C		
d_c g/ml	0.451	3'
v_c ml/g	2.217	4
t_c °C	36.5	3'
P_c mm	54492.	3'
PV/RT 25°C	0.5172	4
30 mm	1.0000	5
BP	0.9401	
t_e	0.9469	5
t_c	0.275	4
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.		

		Ref.
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.	Yes	1
Ultra V.		
X-Ray Dif.		
Infrared	1503	1
Solubility in +		
Acetone		
Carbon tet.		
Benzene		
Ether		
n-Heptane		
Ethanol		
Water		
Water in		

≠ 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.

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 17

NAME	Oxygen			STRUCTURAL FORMULA
				O=O
Mole % Pur.	Ref.	Molecular Formula O_2	Molecular Weight 32.000	

		Ref.
F.P. °C	-218.83	3
F.P. 100%		
B.P. °C		
760 mm	-182.970	3
100	-198.9	4
30	-205.945	4
10	-220.	5
1		
Pressure mm 25°C		
t_e	218.60	5
Density g/ml -182. °C	1.1415	3²
d^t -154.5	0.9758	3²
d_4 -140.2	0.8742	3²
a -218°C	0.3258	4
b to -170	-0.004510	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.)		
(nD-d/2)		
Dielectric		
A -210 to	6.98983	4
B -160 °C	370.757	4
C	273.2	5
A* -210 to	1.44043	4
B* -182 °C	341.71	4
K	9.2	4
c	-0.14542	4
t_k to	-166.7	4
t_x °C	-103.4	4
A' to		
B' °C		
C'		
A'* to		
B'* °C		
Ac -160 to	6.83514	4
Bc t_c °C	336.56	4
Cc	267.85	4
Cryos. A°		
consts. B°		
t_e °C	-193.47	5

		Ref.
dt/dP °C/mm 25°C		
BP	0.01255	4
t_e	0.03406	5
30 mm	-205.945	4
ΔHm cal/g		
ΔHv cal/g 25°C		
30 mm	53.01	5
BP	50.9	3'
t_e	52.24	5
t_e (d, e)	51.86	5
$\Delta Hv/T_e$	20.97	5
d -210 to	34.15	5
e -175 °C	0.09156	5
d' to		
e' °C		
d_c g/ml	0.430	3'
v_c ml/g	2.325	3'
t_c °C	-118.8	3'
P_c mm	37770.	3'
PV/RT 25°C		
30 mm	1.0000	5
BP	0.9602	4
t_e	0.9854	5
t_c	0.2918	4
ΔHc kcal/m		
ΔHf	0	2
ΔFf	0	2
Viscosity centistokes		
η °C		
B^v to		
A^v °C		
(B^v)		
(A^v)		
c_p liq. °C		
c_p vap. 25°C	0.1636	2
300	0.1580	2
c_v vap.		

		Ref.
f to		
g °C		
h		
f' to		
g' °C		
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.1.%/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	0.003931	3³
Water in		

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

SOURCE:

PURIFICATION:

LITERATURE REFERENCES: 3 Proc. 7th Inter. Cong. of Refrig. Pt. I, no. 3, p. 174(1936) Henning and Otto; 3' ICT; 3² Ann. Phys. 17, 416 (1922) Mathias and Onnes; Lange's hdbk. 8th Ed., p. 1083

Publication Date: January 1, 1961 | doi: 10.1021/ba-1961-0029.ch001

No. 18

NAME	Sulfur Dioxide	STRUCTURAL FORMULA
Mole % Pur. / Ref. / Molecular Formula	SO_2	O=S=O
Molecular Weight	64.06	

		Ref.
F.P. °C	-75.2	3'
F. P. 100%		
B.P. °C 760 mm	-10.00	3'
100	-47.81	4
30		
10	-78.1	4
1	-100.1	4
Pressure mm 25°C	2939.0	4
t_e	704.2	5
Density g/ml 20°C	1.38290	3'
d_4^{25}	1.36849	3'
d_4^{30}	1.35593	3'
a	1.43848	4
b	-0.002264	4
Ref. Index n_D 20°C		
25		
30		
"C"		
MR (Obs.)		
MR (Calc.) (nD-d/2)		
Dielectric		
A / to	7.32776	4
B / °C	1022.80	4
C	240.0	4
A* / to	1.68879	4
B* / °C	966.38	4
K	14.5	4
c	-0.06653	4
t_k / to	2.0	4
t_x / °C	198.3	5
A' / to		
B' / °C		
C'		
A'* to		
B'* °C		
+ Ac / to	7.46027	4
Bc / t_c °C	1068.09	4
Cc		
Cryos. A*		
consts. B*		
t_e °C	-11.69	5

		Ref.
dt/dP		
°C/mm		
25°C	0.001014	5
BP	0.02938	5
t_e	0.03125	5
30 mm		
ΔHm cal/g		
ΔHv cal/g		
25°C	84.4	3²
30 mm		
BP	92.8	3²
t_e	93.1	5
t_e (d, e)		
$\Delta Hv/T_e$	22.80	5
d / to		
e / °C		
d' / to		
e' / °C		
d_c g/ml	0.518	3'
v_c ml/g	1.9305	3'
t_c °C	157.2	3'
P_c mm	59052.	3'
PV/RT		
25°C	0.9035	5
30 mm		
BP	0.9663	4
t_e	0.9699	5
t_c	0.2720	4
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η °C		
B^v / to		
A^v / °C		
(B^v) / to		
(A^v) / °C		
c_p liq. 10 °C	0.35	3²
c_p vap.* °C	0.1544	3²
c_v vap.*	0.123	3²

			Ref.
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.		88.2	5
Exp. L.1.%/wt.		None	1
u.		None	1
Dispersion			
Flash Point °C		None	1
Fire Point		None	1
M Spec.		Yes	1
Ultra V.			
X-Ray Dif.			
Infrared		836.	1
Solubility in +			
Acetone			
Carbon tet.			
Benzene			
Ether			
n-Heptane			
Ethanol			
Water			
Water in			

+ 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' - Young; 3² Ind. Eng. Chem. 24, 626

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TABLE XII. MISCELLANEOUS INORGANIC COMPOUNDS

No. 19

NAME	Titanium tetrachloride	STRUCTURAL FORMULA
Mole % Pur. 99.84	Ref. 1	Molecular Formula $TiCl_4$	Molecular Weight 177.285	$TiCl_4$

		Ref.
F.P. °C	-24.27	1
F.P. 100%		
B.P. °C		
760 mm	136.51	1
100	73.16	1
30	45.66	4
10	24.85	5
1	-9.7	5
Pressure		
mm 25°C	10.090	5
t_e	1111.0	5
Density		
g/ml 20°C	1.7275	4
d_4^t 25	1.7191	1
30	1.6762	1
a	1.7613	4
b	-0.00169	4
Ref. Index		
n_D 20°C		
25	1.6032	1
30	1.6002	1
"C"	0.3075	4
MR (Obs.)	31.897	4
MR (Calc.)	≠ 31.897	5
(nD-d/2)	0.7437	5
Dielectric		
A | 45 to	6.69428	1
B | 225 °C	1287.91	1
C	201.2	1
A* | 45 to	1.31804	5
B* | 160 °C	1207.17	5
K		
c		
t_k | to		
t_x | °C		
A' | -10 to	7.09106	5
B' | 45 °C	1491.4	5
C'	220.0	5
A'* 10 to	1.69340	5
B'* 45 °C	1399.	5
Ac | to		
Bc | t_c °C		
Cc		
Cryos. A°		
consts. B°		
t_e °C	151.8	5

		Ref.
dt/dP		
°C/mm		
25°C	1.7323	5
BP	0.05062	4
t_e	0.03782	5
30 mm	0.6850	4
ΔHm cal/g	12.63	3
ΔHv cal/g		
25°C	57.03	5
30 mm	55.28	5
BP	46.39	5
t_e	45.04	5
t_e (d, e)	44.90	5
$\Delta Hv/T_e$	18.79	5
d | 45 to	59.74	5
e | 155 °C	0.0978	5
d' | 10 to	58.93	5
e' | 45 °C	0.0760	5
d_c g/ml		
v_c ml/g		
t_c °C		
P_c mm		
PV/RT		
25°C	1.0000	5
30 mm	1.0000	5
BP	0.952	5
t_e	0.9396	5
t_c		
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity		
centistokes		
η 25 °C	0.4723	1
50	0.3955	1
75	0.3336	1
100	0.2737	1
B^v | to		
A^v | °C		
(B^v) |		
(A^v) |		
c_p liq. °C		
c_p vap. °K		
c_v vap.		

		Ref.
f | to		
g | °C		
h		
f' | to		
g' | °C		
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.1.%/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		

≠ 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

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NAME	Water	STRUCTURAL FORMULA
Mole % Pur. 100	Ref.	Molecular Formula H_2O	Molecular Weight 18.016	H-O-H

		Ref.
F.P. °C	0.0	
F.P. 100%		
B.P. °C		
760 mm	100.0	3'
100	51.57	4
30	29.094	4
10	11.25	4
1	-19.3	4
Pressure		
mm 25°C	23.757	4
t_e	1043.6	5
Density		
g/ml 20°C	0.99897	3⁵
d_4^t 25	0.99707	3⁵
30	0.99568	3⁵
a	1.00283	4
b	-0.0_32306	4
Ref. Index		
n_D 20°C	1.33299	3⁷
25	1.33250	3⁷
30	1.33194	3⁷
"C"	0.6522	4
MR (Obs.)	3.710	4
MR (Calc.)	3.725	5
(nD-d/2)	0.83351	4
Dielectric	78.54	3⁴
A | 60 to	7.96681	4
B | 150 °C	1668.21	4
C	228.0	4
A* | 60 to	1.55544	5
B* | 150 °C	1567.76	5
K		
c		
t_k | to		
t_x | °C		
A' | 0 to	8.10765	4
B' | 60 °C	1750.286	4
C'	235.0	4
A'* 0 to	1.70544	5
B'* 60 °C	1650.061	5
Ac | 230 to	8.23070	4
Bc | t_c °C	1902.46	4
Cc	257.74	4
Cryos. A°		
consts. B°		
t_e °C	109.13	5

		Ref.
dt/dP		
°C/mm		
25°C	0.70604	4
BP	0.03690	4
t_e	0.02835	5
30 mm	0.5830	4
ΔHm cal/g	79.67	3'
ΔHv cal/g		
25°C	582.78	3³
30 mm	580.44	4
BP	539.83	3³
t_e	534.19	3³
t_e (d, e)	534.0	5
$\Delta Hv/T_e$	25.17	4
d | 20 to	596.83	4
e | 115 °C	0.5727	4
d' | to		
e' | °C		
d_c g/ml	0.4	3²
v_c ml/g	2.5	3²
t_c °C	374.0	3²
P_c mm	265467.	3²
PV/RT		
25°C	0.9966	4
30 mm	0.9918	4
BP	0.9842	4
t_e	0.9811	5
t_c	0.1847	4
ΔHc kcal/m		
ΔHf		
ΔFf		
Viscosity centistokes		
η 10 °C	≠ 1.3039	3⁸
40	0.6590	3
80	0.3656	3
100	0.2929	3
B^v | to	838.735	4
A^v | °C	3.14232	4
(B^v) | to		
(A^v) | °C		
c_p liq. 20 °C	1.000	3³
c_p vap. 25 °C	0.4454	3⁶
300	0.4518	3⁶
c_v vap.		

		Ref.
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	72.75	3'
γ 30	71.18	3'
40	69.56	3'
Parachor [P]		
20°C	52.51	4
30	52.10	4
40	51.60	4
Sugd.	54.2	5
Exp. L. l. %/wt.	None	
u.	None	
Dispersion	58.887	3⁷
Flash Point °C	None	
Fire Point	None	
M Spec.	Yes	1
Ultra V.		
X-Ray Dif.		
Infrared	939.	1
Solubility in +		
Acetone	∞	
Carbon tet.		
Benzene		
Ether		
n-Heptane		
Ethanol	∞	
Water		
Water in		
A^s ≠ 0 to	8.21492	4
B^s -20°C	1813.	4
C^s	240.	4

≠ 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; 3² ICT; 3³ Steam Tables, (1917) Goodenough; 3⁴ NBS 514; 3⁵ J. Res. NBS 18, 213 (1937); 3⁶ J. Res. NBS 34, 153 (1945); 3⁷ J. Res. NBS 20, 446 (1938); 3⁸ 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

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INDEX

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