TABLE II (*Concluded*)

Compound	Source	Range, °K.	a	$b \times 10^3$	$c \times 10^7$	$c' \times 10^{-5}$	$d \times 10^9$	—% Deviation— Max.	Av.
Hydrogen sulfide[g,a]	11, 12	298.1 -1800	6.864	3.852	7.85		−0.634	0.90	0.36
Mesitylene[b]	7	298.16–1500	3.042	124.059	−397.43			2.38	1.00
Mesitylene[b]	7	298.16–1500	−6.012	165.412	−933.20		20.114	0.41	0.15
Methane[b]	3	298.16–1500	3.381	18.044	− 43.00			1.80	.52
Methane[b]	3	298.16–1500	4.171	14.450	2.67		−1.722	1.03	.41
Nitrogen[b]	3	298.16–1500	6.524	1.250	− 0.01			1.15	.60
n-Octane[b]	2	298.16–1500	10.381	137.054	−425.64			1.89	.85
n-Octane[b]	2	298.16–1500	1.064	179.611	−976.98		20.699	0.50	.16
Oxygen[b]	3	298.16–1500	6.148	3.102	− 9.23			0.65	.24
n-Pentane[b]	2	298.16–1500	5.780	88.843	−273.26			1.84	.80
n-Pentane[b]	2	298.16–1500	0.099	114.794	−609.47		12.623	0.43	.13
Propane[b]	2, 13	231.09–1500	2.258	57.636	−175.94			1.76	.64
Propane[b]	2	298.16–1500	−1.209	73.734	−386.66		7.961	0.31	.10
Propylene[c]	14	270 -510	2.974	45.024	−113.76			0.16	.04
Pyridine[d]	15	291.15–1000	−3.016	88.083	−386.65			1.02	.61
Silicon tetrachloride[e]	16	273.1 -573.1	23.494	2.942		−2.380		0.21	.07
Stannic chloride[h,e]	16	273.1 -573.1	25.115	0.925		−1.632		0.08	.02
Sulfur trioxide[f]	17	298.16–1200	6.077	23.537	− 96.87			1.53	.84
Sulfur trioxide[f]	17	298.16–1200	3.603	36.310	−288.28		8.649	0.19	.10
Titanic chloride[e]	16	273.1 -573.1	24.612	1.541		−1.940		0.12	.03
Toluene[b]	7	298.16–1500	0.436	94.254	−312.58			3.87	1.51
Toluene[b]	7	298.16–1500	−8.930	137.033	−866.80		20.807	0.30	0.14
Triborine triamine[a]	18	298.1 -1000	−0.115	91.476	−399.23			1.29	.73
Water[b]	3	298.16–1500	7.256	2.298	2.83			0.74	.45
m-Xylene[b]	7	298.16–1500	1.956	109.147	−355.83			3.16	1.27
m-Xylene[b]	7	298.16–1500	−7.634	152.950	−923.33		21.306	0.35	0.11
o-Xylene[b]	7	298.16–1500	4.603	104.476	−336.16			2.63	1.08
o-Xylene[b]	7	298.16–1500	−3.890	143.270	−838.75		18.869	0.32	0.10
p-Xylene[b]	7	298.16–1500	1.846	108.594	−352.00			2.84	1.16
p-Xylene[b]	7	298.16–1500	−7.051	149.234	−878.51		19.767	0.43	0.12

[a] "I. C. T." constants were used. [b] Defined calorie = 4.1833 int. j. and Birge's (1941) constants were used. [c] R = 1.9869 cal. deg.$^{-1}$ mole^{-1} was used. [d] Birge's (1941) constants were used. [e] Birge's (1929) constants were used. [f] Hirshfelder's constants reported by J. E. and M. G. Mayer, "Statistical Mechanics," J. Wiley and Sons, Inc., New York, N. Y., 1940, were used. [g] Contrary to the statement in note *m* of Part II, the rotational distortion correction was not included in deriving the cubic equation. [h] At 20° C_p° = 23.49. 23.84, as given in the original publication, is evidently a typographical error.

made[1] concerning the usefulness of empirical heat capacity equations, the choice of their form, and their unreliability for extrapolation apply to the present communication.

The constants of the quadratic and cubic equations for the normal paraffin hydrocarbons vary regularly for $n \geqq 5$ and $n \geqq 6$, respectively. Consequently we may write

$$C_p^\circ = (5.780 + 1.534m) + (88.843 + 16.070m) \times 10^{-3}\,T - (273.26 + 50.79m) \times 10^{-7}\,T^2 \quad (4)$$

$$C_p^\circ = (0.428 + 0.318p) + (136.352 + 21.629p) \times 10^{-3}T - (731.38 + 122.80p) \times 10^{-7}\,T^2 + (15.295 + 2.702p) \times 10^{-9}\,T^3 \quad (5)$$

where $m = n - 5$, $p = n - 6$, and n = the number of carbon atoms.

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Identification of Sulfobenzoic Acids

BY C. M. SUTER AND E. E. CAMPAIGNE

We appreciate having Dr. Veibel point out (p. 1867) that *m*-sulfobenzoic acid forms a benzylthiuronium salt under the conditions of his experiments whereas it does not form readily in the strongly acidic solutions used in our work. It is regretted that reference to Dr. Veibel's prior work was not made. However, the chief point of our "Note" was that under certain conditions it is possible to determine which one of the three isomeric sulfobenzoic acids is present in a solution by the large differences in the solubilities of their benzylthiuronium salts.

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