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HEATS OF SUBLIMATION OF THE ELEMENTS

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Leo Brewer

January 6, 1958

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University of California, Berkeley, California

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ABSTRACT

The previous tabulation of heats of sublimation of the elements has been revised.

HEATS OF SUBLIMATION OF THE ELEMENTS

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Radiation Laboratory and Department of Chemistry and Chemical Engineering
University of California, Berkeley, California

January 6, 1958

The previous compilations of heats of sublimation of the elements in UCRL-2854 (February 1955) and UCRL-2854 (rev. November 1955) have been incorporated in the compilation of "Thermodynamic Properties of the Elements," by D. R. Stull and G. C. Sinke, Advances in Chemistry Series 18, published November 1956 by the American Chemical Society, 1155 16th Street, N. W., Washington 6, D. C. The present replacement for the previous two reports will cover only those elements for which revisions or additions are necessary to the values tabulated by Stull and Sinke. An effort will be made to revise this report from time to time to keep this list up to date as newer data become available.

Stull and Sinke give complete references to the sources of the data available at the time of their compilation. Some of the data tabulated in the present report are from unpublished sources. Thus it is requested that these data not be quoted without permission of the worker who plans to publish the results. Anyone who wishes to obtain permission to quote them can obtain the source of these data from Professor Leo Brewer, Department of Chemistry, University of California, Berkeley 4, California.

Corrections and additions to Stull and Sinke, "Thermodynamic Properties of the Elements," Advances in Chemistry Series 18. Published November, 1956, by the American Chemical Society, 1155 16th Street, N. W., Washington 6, D. C.

ΔH^{o}_{298} in kcal for Formation of Gaseous Atoms from Elements in Standard States

	Corrected Values
Au	82 ± 2
Bi	49.5 ± 1
Bi_2	52.5 ± 1
C_2	201.6 ± 5 (also add R ln 2 to entropy and absolute value of free energy function)
Eu	46. ± 5
Fe	99.5 ± 0.5
N	112.97 ± 0.05
Nb	170.5 ± 2
Ni	102.8 ± 0.4
Re	187.0 ± 1
S	57.2 ± 1
Sc	92.0 ± 7
Si	113.0 ± 3
Sm	53.0 ± 5
Yb	45.0 ± 5
U	122.0 ± 5
	Additions
Pr	79. ± 5
Dy	70. ± 7
Ho	70 ± 7
Er	72. ± 7
Tm	57 ± 2
Th	127 ± 2
Pa	115 ± 5
Pu	92 ± 2

Additional Corrections

Mo_{liq} $S_{2900} = 25.24$, $\log_{10} K_P = -4.350$

$S_{3000} = 25.58$, $\log_{10} K_P = -3.990$

Pt_{solid} $S_{2000} = 23.33$, $\log_{10} K_P = -7.012$