Book Review

Thermodynamic Properties of Minerals and Related Substances at 298.15 K aud 1 Bar (10^5 Pascals) Pressure and at Higher Temperatures. Richard A. Robie, Bruce S. Hemingway and James R. Fischer. Geological Survey Bulletin 1452, Washington: 1978. 456 pp.

This data-collection gives the values of the entropy, molar volume and enthalpy, Gibbs free energy and the log of the equilibrium constants of formation for the elements, 133 oxides and 212 other minerals and related substances at 298.15 K. Furthermore these values are tabulated at 100K intervals for temperatures up to 1800 K, supplemented with the known heat-capacity or heat-content data of these materials. The temperatures of solid-state phase changes, and the melting and boiling points are also tabulated, if they are less than 1800 K.

The data published here are in part the author's own calculations, or were taken from the recent literature results after critical evaluation. The sources of the data are listed at the end of the data tables. The data taken from the literature are the results of nearly 300 authors, and were adopted after critical comparison and re-evaluation. Most of the data refer only to few minerals or smaller groups of minerals, and only a minority to greater groups of minerals (e.g. sulfides, oxides, etc.)

This exceptionally great work performed carefully is very useful for the geo-scientist, because it gives the comprehensive and reliable data of the thermodynamic properties and of the stabilities of minerals, which are needed for the solution of mineral-genetic problems, and saves time for them to obtain data which might otherwise be difficult to find.

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