

Thermochemische Untersuchungen zum ternären System Bi/Se/O.

II. Das Teilsystem $\text{Bi}_2\text{O}_3\text{--SeO}_2$

Thermochemical Investigations on the Ternary System Bi/Se/O.

II. The Binary System $\text{Bi}_2\text{O}_3\text{--SeO}_2$

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Bismuth Selenium Oxides, Coexistence Pressure, Phase Barogram,
Differential Thermoanalysis, Phase Diagram

We describe the existence of six thermodynamically stable phases on the binary line $\text{Bi}_2\text{O}_3\text{--SeO}_2$ at room temperature: $\text{Bi}_{12}\text{SeO}_{20}$, $\text{Bi}_{10}\text{Se}_2\text{O}_{19}$, $\text{Bi}_{16}\text{Se}_5\text{O}_{34}$, Bi_2SeO_5 , $\text{Bi}_2\text{Se}_3\text{O}_9$ and $\text{Bi}_2\text{Se}_4\text{O}_{11}$. At higher temperature we obtained evidence for $\text{Bi}_{20}\text{Se}_3\text{O}_{36}$ and Bi_4SeO_8 . The decomposition pressures were measured for all phases in a membrane zero manometer and the enthalpy of formation and the standard entropy was determined. The phase barogram and phase diagram followed from total pressure measurements and differential thermoanalysis. The standard enthalpies of formation of all phases were also derived from solution calorimetry. The necessary data of transitions on molar enthalpies were obtained by DSC- and C_p -measurements.

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