

Untersuchungen zum thermischen Verhalten der Osmiumoxide

Investigation of the Thermochemical Behaviour of Osmium Oxides

H. Oppermann*, B. Marklein

Institut für Anorganische Chemie der Technischen Universität,
Mommsenstr. 13, D-01069 Dresden

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Osmium Oxides, Chemical Transport Reactions, Total Pressure Measurements,
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The heterogeneous reactions:

$\text{OsO}_{4,s} = \text{OsO}_{4,g}$, $2\text{OsO}_{2,s} = \text{Os}_s + \text{OsO}_{4,g}$, $\text{Os}_s + 3\text{OsO}_{4,g} = 4\text{OsO}_{3,g}$, $\text{OsO}_{2,s} + \text{OsO}_{4,g} = 2\text{OsO}_{3,g}$
and the homogeneous reaction $\text{OsO}_{4,g} = \text{OsO}_{3,g} + \frac{1}{2} \text{O}_{2,g}$ were determined by total pressure
measurements. From this and from chemical transport reactions of OsO_2 and Os with Osmium
tetroxide, the enthalpy of formation of gaseous OsO_3 was computed to $\Delta H_B^\circ(\text{OsO}_{3,g,298}) =$
 $-40,0 \pm 3 \text{ kcal/mol}$.

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