

Darstellung und Kristallstruktur von Lithiumozonid-Ammoniakat (1/5) $\text{LiO}_3 \cdot 5 \text{NH}_3$

Synthesis and Crystal Structure of Lithiumozonide-Ammonia (1/5) $\text{LiO}_3 \cdot 5 \text{NH}_3$

Wilhelm Klein^a und Martin Jansen^b

^a Institut für Anorganische Chemie der Universität Bonn,
Gerhard-Domagk-Straße 1, 53121 Bonn

^b Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1, 70569 Stuttgart

Sonderdruckerfordernungen an Prof. Dr. M. Jansen; Fax: 0711/689-1502;
e-mail: hamilton@jansen.mpi-stuttgart.mpg.de

Z. Naturforsch. **54 b**, 1345–1349 (1999); eingegangen am 28. Juni 1999

Lithium Ozonide Ammonia, Ionic Ozonides, Lithium Tetramine Complex, Crystal Structure

Lithium ozonide has been synthesized starting from cesium ozonide *via* cation exchange in liquid ammonia and crystallizes at -78°C as an ammoniate, $\text{LiO}_3 \cdot 5\text{NH}_3$. The coarse, ruby red crystals decompose above the boiling temperature of ammonia and are extremely sensitive to moisture. The crystal structure of $\text{LiO}_3 \cdot 5\text{NH}_3$ (P $c_{21}n$; $a = 1231.9(5)$, $b = 637.4(2)$, $c = 1104.8(4)$ pm; $Z = 4$; $R_1 = 4.57\%$; 1318 independent reflections) consists of lithium tetramine complexes, ozonide anions and non coordinating ammonia molecules. With respect to the arrangement of the complex cations and of the anions there is similarity to the WC type of structure. The central oxygen atom of the ozonide anion is disordered.