Darstellung und Kristallstruktur von Strontiumozonid-Ammoniakat, $Sr(O_3)_2 \cdot 9\ NH_3$

Synthesis and Crystal Structure of Strontium Ozonide Ammoniate, $Sr(O_3)_2 \cdot 9\ NH_3$

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Strontium ozonide has been synthesised, starting from caesium ozonide, *via* cation exchange in liquid ammonia. From these solutions, if kept at −78 °C for 14 days, an ammoniate, $Sr(O_3)_2 \cdot 9\ NH_3$, crystallises. The coarse, ruby red crystals decompose above the boiling temperature of ammonia and are extremely sensitive to moisture. According to a single crystal structure determination ($P4/nmm$; $a = 7.597(1)$, $c = 13.496(2)$ Å, $Z = 2$; $R1 = 7.50\%$; 254 independent reflections) $Sr(O_3)_2 \cdot 9\ NH_3$ consists of ozonide anions and strontium cations. The complex cations form an approximately cubic close packing, where the octahedral and half of the tetrahedral interstices are occupied by ozonide anions. The anions are orientationally disordered.

Key words: Strontium Ozonide, Ionic Ozonides, Strontium Ammine Complex, Liquid Ammonia, Low-Temperature Crystal Structure Analysis