

Untersuchungen an Polyhalogeniden, XXXIII [1]

Polyiodide des Nickelhexamminkomplexes:

Nickelhexamminbistriiodid $[\text{Ni}(\text{NH}_3)_6](\text{I}_3)_2$ und

Nickelhexamminbispentaiodid $[\text{Ni}(\text{NH}_3)_6](\text{I}_5)_2$

Studies of Polyhalides, 33 [1]

Polyiodides of the Nickel Hexamine Complex:

Nickelhexamine Bistriiodide $[\text{Ni}(\text{NH}_3)_6](\text{I}_3)_2$ and

Nickelhexamine Bispentaiodide $[\text{Ni}(\text{NH}_3)_6](\text{I}_5)_2$

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Polyiodide, Triiodide, Pentaiodide, Nickel Hexamine Complex, Crystal Structure

The compounds $[\text{Ni}(\text{NH}_3)_6](\text{I}_3)_2$ and $[\text{Ni}(\text{NH}_3)_6](\text{I}_5)_2$ have been prepared by the reaction of stoichiometric amounts of $[\text{Ni}(\text{NH}_3)_6]\text{Cl}_2$, KI, and I_2 in water. The already known triiodide crystallizes in the monoclinic space group $C2/c$ with $a = 1541.0(10)$, $b = 1521.6(8)$, $c = 876.1(7)$ pm, $\beta = 101.44(6)^\circ$ and $Z = 4$. The new pentaiodide crystallizes in the monoclinic space group $P2_1/n$ with $a = 899.6(4)$, $b = 1681.6(5)$, $c = 946.8(7)$ pm, $\beta = 110.90(5)^\circ$ and $Z = 2$. Both compounds contain nearly octahedral cations $[\text{Ni}(\text{NH}_3)_6]^{2+}$ and simultaneously a linear and a bent triiodide ion I_3^- with nearly equal bond lengths or a unsymmetrical V-shaped pentaiodide ion I_5^- which is lined up to a new type of pentaiodide chain.

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