

Preparation and properties of hydrated uranium(III) complex chlorides. Part II. Uranium trichloride monomethylcyanide pentahydrate

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The preparation and characterization of a new uranium(III) compound, $\text{UCl}_3 \cdot \text{CH}_3\text{CN} \cdot 5\text{H}_2\text{O}$, is reported. The complex chloride belongs to the monoclinic system with $a=1226$. (2), $b=1298$.(3), $c=662$.(1) pm, $\gamma=101.7$ (2)° and $Z=4$. Magnetic susceptibility measurements were carried out by the Faraday method in the 6.5–300 K range. An antiferromagnetic transition is observed at $T_N=12$ K. In the 65–300 K region the compound exhibits Curie-Weiss paramagnetism with the paramagnetic constants $C=1.430$ emu K mol⁻¹ and $\theta=-65.7$ K. The electronic spectra of thin layers of the compound have been recorded in the 4000–24000 cm⁻¹ region and discussed.

Adres publiczny

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