



Synthesis, spectroscopic and magnetic properties of tetramethylammonium hexachlorouranate(III).

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Streszczenie

The synthesis of tetramethylammonium hexachlorouranate(III) together with some of its structural and spectroscopic and magnetic properties is reported. The compound crystallizes in the tetragonal system with $a = 13.020$ Angstrom, $c = 7.825$ Angstrom, $Z = 2$ and $V = 1376.48$ Angstrom³. The electronic absorption, Raman and infrared spectra have been recorded and are discussed. Magnetic susceptibilities of polycrystalline samples were measured by the Faraday method in the 6.2-300 K range. $[(CH_3)_4 N]_3 UCl_6$ follows the Curie-Weiss law in the 200-300 K range with $C = 1.5058$ emu $\cdot$ K $\cdot$ mol⁻¹, $\Theta = 17$ K and $\mu(\text{eff}) = 3.36$ B.M. At lower temperatures the plot shows an antiferromagnetic transition at 4.8 K.