Cobalt, Tellur, Oxide-Arsenate, Magnetism, Structure Relations

The recently investigated compound Co₆O₂[TeO₄(CoAsO₅)₂] marks the first occurrence of a tellurate-arsenate additionally revealing the hitherto unknown pyro-cobaltoarsenate group CoAsO₇. One oxygen is exclusively connected to octahedrally coordinated cobalt. It is shown that the structure of Co₆O₂[TeO₄(CoAsO₅)₂] can be derived step by step from the rock salt structure of CoO. Magnetic measurements using the Faraday technique reveal Curie-Weiss behaviour between 88 and 325 K. Low temperature measurements by a SQUID magnetometer show antiferromagnetism and a relatively low Néel temperature of 5 K compared to other Co(II) compounds.

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