Koktaite \((\text{NH}_4)_2\text{Ca(SO}_4)_2\cdot\text{H}_2\text{O}\)

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Crystal Data: Monoclinic. Point Group: \(2/m\). Crystals are acicular to lamellar, fibrous, showing \{100\}, \{110\}, \{001\}, \{011\}, \{101\}, as very fine-grained aggregates. Twinning: Common on \{100\}.


Optical Properties: Semitransparent. Color: Colorless to white. Optical Class: Biaxial (−). Orientation: \(Y = b; Z' \wedge c \) (on \{110\}) = 2°. \(\alpha = 1.524 ~ \beta = 1.532 ~ \gamma = 1.536 ~ 2V(\text{meas.}) = 72°\)

Cell Data: Space Group: \(P2_1/a\). \(a = 10.17 ~ b = 7.15 ~ c = 6.34 ~ \beta = 102.75° ~ Z = 2\)

X-ray Powder Pattern: Žeravice, Czech Republic. (ICDD 11-475). 9.83 (100), 3.30 (65), 4.96 (40), 5.83 (25), 3.00 (25), 3.56 (20), 2.89 (20)

Chemistry: (1) Optical data and X-ray pattern are found to be identical with synthetic \((\text{NH}_4)_2\text{Ca(SO}_4)_2\cdot\text{H}_2\text{O}\).

Occurrence: On waste piles of a lignite mine.

Association: Gypsum, mascagnite, tschermigite.

Distribution: From Žeravice, near Kyjov, Czech Republic.

Name: To honor Jaroslav Kokta (1904–1970), Czech chemist who analyzed the synthetic compound.
