

**Crystal Data:** Orthorhombic. *Point Group:*  $2/m\ 2/m\ 2/m$ . Acicular crystals, in silky tufted to branching aggregates, may be flowerlike, to 2 cm; commonly in thin crusts, granular, earthy, mealy, massive. *Twinning:* Common on {110}, forming pseudohexagonal trillings.

**Physical Properties:** *Cleavage:* {011}, nearly perfect; {010}, good; {110}, imperfect. *Fracture:* Subconchoidal to uneven. *Tenacity:* Brittle. Hardness = 2 D(meas.) = 2.109(2) D(calc.) = 2.104 Soluble in H<sub>2</sub>O, taste saline and cooling.

**Optical Properties:** Transparent. *Color:* Colorless to white, may be gray from impurities. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (-). *Orientation:*  $X = c$ ;  $Y = a$ ;  $Z = b$ . *Dispersion:*  $r < v$ , weak.  $\alpha = 1.332$   $\beta = 1.504$   $\gamma = 1.504$   $2V(\text{meas.}) = 7^\circ$

**Cell Data:** *Space Group:*  $Pm\bar{c}n$ .  $a = 5.414$   $b = 9.164$   $c = 6.431$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.  
3.78 (100), 3.73 (56), 3.033 (55), 2.647 (55), 2.661 (41), 2.192 (41), 2.763 (28)

**Chemistry:** (1) Identified by correspondence of optical data and X-ray powder pattern with that of synthetic material.

**Occurrence:** In some caves, typically formed by bacterial action on animal matter, as bat guano, or from vegetable matter, such as humus, exposed to seeping groundwater; an efflorescence on soils or cliff faces in arid regions.

**Association:** Nitratine, nitrocalcite, nitromagnesite, epsomite, gypsum, calcite.

**Distribution:** Usually in minor amounts, but may form substantial masses, into the thousands of tons, especially in some cave deposits. Typical large-scale occurrences are represented by: Pulo di Molfetta Cave, Apulia, Italy. In lava tubes 16 km east of Lava Station, Socorro Co., New Mexico, USA. In the Rusensky Lom Cave, Bulgaria. Small amounts occur in many other caves worldwide.

**Name:** A name from antiquity, used to distinguish potassium nitrate from sodium nitrate.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 303–305. (2) Hill, C. and P. Forti (1997) Cave minerals of the world (2nd edition), National Speleological Soc., Huntsville, Alabama, esp. 160. (3) Kennedy, S.W. and M. Odlyha (1977) Orientations and twinning in the structural transformation aragonite-type to calcite-like in potassium nitrate crystals. *Acta Cryst.*, 33, 168–171. (4) (1954) NBS Circ. 539, 3, 58.