Nitratine

Crystal Data: Hexagonal. Point Group: \( \overline{3} 2/m \). Rare as rhombohedral crystals, \( \{10\overline{1}1\} \), to 3 mm; stalactitic, cottonlike, typically granular or in massive incrustations.

Physical Properties: Cleavage: Perfect on \( \{10\overline{1}1\} \); imperfect on \( \{01\overline{1}2\} \), \( \{0001\} \).
Fracture: Conchoidal. Tenacity: Sectile to some degree. Hardness = 1.5–2 D(meas.) = 2.24–2.29 D(calc.) = 2.25 Soluble in \( \text{H}_2\text{O} \), taste bitter, pungent, cooling; deliquescent above \( \sim 80\% \) humidity.

Optical Class: Uniaxial \((-\)\). \( \omega = 1.587 \quad \epsilon = 1.336 \)

Cell Data: Space Group: \( \text{R}\overline{3}c \). \( a = 5.070 \quad c = 16.829 \quad Z = 6 \)

X-ray Powder Pattern: Synthetic.
3.03 (100), 2.311 (25), 2.81 (16), 1.898 (16), 2.53 (10), 2.125 (10), 1.880 (8)

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

Occurrence: Principally in bedded deposits formed in playas; in caves, deposited from seeping groundwater leaching nitrates from overlying rocks, especially in very dry and cold climates.

Association: Niter, nitrocalcite, epsomite, mirabilite, halite, gypsum.

Distribution: In Chile, in the Tarapacá district, and elsewhere along the coast, economically valuable deposits aggregating billions of tons; also at Chuquicamata, Antofagasta. Other studied occurrences include: in the Los Manos Cave, Santa Cruz Province, Argentina. In the USA, in Death Valley and along the Armagosa River, Inyo and San Bernardino Cos., California; at Niter Buttes, about 40 km southeast of Lovelock, Churchill Co., Nevada; in Plateau Canyon, 32 km east of Grand Junction, Mesa Co., Colorado; from the Organ Mountains, about 12 km east-northeast of Mesquite, Doña Ana Co., in the Jornada del Muerto lava tubes, near Socorro, Socorro Co., and other places in New Mexico; at the Wupatki fissure caves, near Flagstaff, Coconino Co., Arizona. Numerous other occurrences have been reported.

Name: For NITRogen in the composition.