Nitromagnesite $Mg(NO_3)_2 \cdot 6H_2O$

Crystal Data: Monoclinic. *Point Group:* $2/m$. As stalactites, flocculent to earthy efflorescences, and crusts.

Physical Properties: Hardness = n.d. D(meas.) = 1.46–1.58 D(calc.) = 1.64 Soluble in H_2O, taste bitter; hygroscopic.

Optical Properties: Transparent. *Color:* Colorless to white, may be yellow from contained bat urine. *Luster:* Vitreous.
Optical Class: Biaxial (–). *Orientation:* $X = a$; $Z = b$. *Dispersion:* $r < v$, weak. $\alpha = 1.34(1)$ $\beta = 1.506(3)$ $\gamma = 1.506(3)$ 2V(meas.) = 5°

Cell Data: *Space Group:* $P2_1/c$ (synthetic). $a = 6.194(2)$ $b = 12.71(3)$ $c = 6.600(2)$ $\beta = 92.99(2)°$ Z = 2

X-ray Powder Pattern: Synthetic.
3.295 (100), 2.925 (75), 4.433 (55), 5.840 (45), 4.154 (35), 3.190 (35), 2.688 (35)

Chemistry: (1) No analyses of natural material have been made. Identification depends on coincidence of properties with synthetic material.

Occurrence: A rare cave deposit in humidities up to 78%, typically formed as a leachate of bat guano; may be a component of mixed salts.

Association: Nitrocalcite.

Distribution: In the USA, from Nicojack Cave, Madison Co., Kentucky, and in a cave near Corydon, Harrison Co., Indiana. At Independence Cave, Botswana. In Namibia, from Arnhem, Gâuab, Elephant, Uisib I, and Kimberlite Caves. In the Pulo di Molfetta caves, Apulia, Italy.

Name: For NITROgen and MAGNESium in the composition.

Type Material: National Museum of Natural History, Washington, D.C., USA, 128717.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 307. (2) Hill, C. and P. Forti (1997) Cave minerals of the world (2nd edition), National Speleological Soc., Huntsville, Alabama, 162. (3) Mozzi, R.L. and W.R. Bekebrede (1961) Cell dimensions and space group of magnesium nitrate hexahydrate. Acta Cryst., 14, 1296–1297.