Nasinite $Na_2B_5O_8(OH)\cdot 2H_2O$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Tiny crystals and microcrystalline clusters, in earthy masses.

Physical Properties: Hardness = n.d. D(meas.) = 2.2 D(calc.) = 2.134

Optical Properties: Semitransparent. *Color:* White to yellow, yellow-orange. *Optical Class:* Biaxial (–) (synthetic). *Orientation:* $Y = b$; $Z \wedge a = 6.8(1)°$ [*sic*]. $\alpha = 1.494$ $\beta = 1.512$ $\gamma = 1.524$ 2V(meas.) = 66.8(7)° 2V(calc.) = 77.4°

Cell Data: *Space Group:* $Pna2_1$ (synthetic). $a = 12.015(2)$ $b = 6.518(1)$ $c = 11.173(1)$ Z = 4

X-ray Powder Pattern: Synthetic.
6.00 (100), 5.29 (92), 2.897 (65), 2.999 (45), 2.648 (26), 2.531 (18), 2.207 (18)

Chemistry: (1) Larderello, Italy; identity depends on the chemical analysis of a mixture with biringuccite, and the correspondence of lines in the mixture's X-ray powder pattern with those of synthetic material.

Occurrence: As scales on piping in a geothermal field.

Association: Biringuccite, thénardite, orpiment, quartz.

Distribution: From Larderello, Val di Cecina, Tuscany, Italy.

Name: To honor Rafaello Nasini (1854–1931), Italian chemist.

Type Material: University of Florence, Florence, Italy, 16803/G; National Museum of Natural History, Washington, D.C., USA, 163785.

References: (1) Cipriani, C. and P. Vannuccini (1961) Hoeferite [= biringuccite] e nasinite: due nuori borati fra i prodotti di Lardarello. Pt. I. Atti Rend. Accad. Lincei, 30, 74–83; Pt. II. 235–245 (in Italian). (2) (1963) Amer. Mineral., 48, 709–711 (abs. ref. 1). (3) Corazza, E., Menchetti, S., C. Sabelli, and A. Stoppioni (1977) Hydrothermal synthesis at 150 °C and X-ray study of resulting products in the $NaOH-B_2O_3-H_2O$ system. Neues Jahrb. Mineral., Abh., 131, 208–223. (4) Corazza, E., S. Menchetti, and C. Sabelli (1975) The crystal structure of nasinite, $Na_2[B_5O_8(OH)]\cdot 2H_2O$. Acta Cryst., 31, 2405–2410.