

Crystal Data: Triclinic. *Point Group:* 1. As scaly pseudohexagonal crystals, flattened on {001}, showing prominent {001}, additional minor complex forms, to 5 mm; may be stalactitic. *Twinning:* Around [001] as twin axis, common.

Physical Properties: *Cleavage:* Perfect on {001}, micaceous. *Tenacity:* Flexible. Hardness = 1 D(meas.) = 1.46–1.50 D(calc.) = 1.562 Soluble in H₂O, taste acid, slightly saline and bitter.

Optical Properties: Transparent. *Color:* White to gray, may be pale yellow from included sulfur or pale brown from included iron oxides; colorless in transmitted light. *Luster:* Pearly. *Optical Class:* Biaxial (–). *Orientation:* X almost ⊥ {001}; OAP nearly ∥ b and ⊥ {001}. α = 1.337–1.347 β = 1.456–1.457 γ = 1.459–1.468 2V(meas.) = 14°–17°

Cell Data: *Space Group:* P1 (synthetic). a = 7.0187(14) b = 7.035(2) c = 6.3472(12) α = 92.49(12)° β = 101°46(2)° γ = 119.76(2)° Z = 4

X-ray Powder Pattern: Furnace Creek district, California, USA.
3.18 (10), 6.02 (1), 1.590 (1), 5.89 (< 1), 4.59 (< 1), 4.20 (< 1), 4.04 (< 1)

Chemistry:

	(1)	(2)
B ₂ O ₃	57.19	56.30
H ₂ O	[42.81]	43.70
Total	[100.00]	100.00

(1) Furnace Creek district, California, USA; H₂O by difference. (2) H₃BO₃.

Occurrence: An evaporite or sublimate around hot spring lagoons and volcanic fumaroles; in bedded sedimentary borate deposits.

Association: Larderellite, santite, ginorite, probertite, searlesite, mirabilite, hieratite, glauberite, sulfur, realgar, sal ammoniac, alums.

Distribution: In Italy, from Tuscany, around the lagoons at Sasso, eight km from Castelnuovo, Val di Cecina, also at Larderello and other reduction works nearby; from Campi Flegrei, near Naples, and on Vesuvius, Campania; on Vulcano, Lipari Islands. In the USA, in California, from the Kramer borate deposit, Boron, Kern Co., in Death Valley, near the head of Furnace Creek, and in the Upper Biddy mine, near Ryan, Inyo Co., and at The Geysers, Sonoma Co.; from Norris geyser basin, Yellowstone National Park, Wyoming; at Steamboat Hot Springs, Steamboat Springs district, Washoe Co., Nevada. At the Copahue geothermal field, Neuquén Province, Argentina. In Japan, on Showa-shinzan, in the dome of Usu volcano, Hokkaido; at the Asamayama volcano, Nagano Prefecture; from the Iwodake volcano, Kagoshima Prefecture; at the Yunotani geothermal field, in the Aso caldera, Kyushu. From the Bezmyanni volcano, Kamchatka Peninsula, Russia.

Name: For its initially-noted occurrence at Sasso, Italy.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 662–663. (2) Allen, R.D. and H. Kramer (1957) Ginorite and sassolite from Death Valley, California. *Amer. Mineral.*, 42, 56–61. (3) Taguchi, S., P.P. Parmentier, and T. Yamasaki (1981) Sassolite sublimated in a steam well at the Yunotani geothermal field, Aso caldera, Kyushu. *Mineral. J. (Japan)*, 10, 338–343. (4) Gajhede, M., S. Larsen, and S. Ruttrup (1986) Electron density of orthoboric acid determined by X-ray diffraction at 105 K and *ab initio* calculations. *Acta Cryst.*, 42, 545–552.