

**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . Crystals, to 10 cm, tabular on {001}, prismatic along  $[\bar{1}01]$  with dominant {111} or along [001] with dominant {110}, or dipyramidal with dominant {111}, {110}; {001} and {111} may be striated || mutual intersections, yielding steplike terminations.

**Physical Properties:** *Cleavage:* {001}, perfect; {110}, imperfect. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 2.5–3 D(meas.) = 2.75–2.85 D(calc.) = 2.78 Slightly saline taste; powdery surface alteration in humid environments, leaching Na<sub>2</sub>SO<sub>4</sub> and leaving gypsum.

**Optical Properties:** Transparent to translucent. *Color:* Gray or pale yellow, colorless. *Streak:* White. *Luster:* Vitreous to waxy, pearly on {001} cleavage surfaces. *Optical Class:* Biaxial (-). *Orientation:*  $Z = b$ ;  $Y \wedge c = 12^\circ$ . *Dispersion:*  $r > v$ , strong, horizontal.  $\alpha = 1.515$   $\beta = 1.535$   $\gamma = 1.536$   $2V(\text{meas.}) = 7^\circ$

**Cell Data:** *Space Group:*  $C2/c$ .  $a = 10.129(2)$   $b = 8.306(2)$   $c = 8.533(2)$   
 $\beta = 112.19(1)^\circ$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.

3.126 (100), 3.110 (80), 3.175 (75), 2.808 (65), 2.677 (60), 1.975 (60), 2.861 (50)

**Chemistry:**

	(1)	(2)
SO <sub>4</sub>	57.29	57.56
CaO	21.04	20.16
Na <sub>2</sub> O	21.27	22.28
Total	99.60	100.00

(1) Berchtesgaden, Bavaria, Germany. (2) Na<sub>2</sub>Ca(SO<sub>4</sub>)<sub>2</sub>.

**Occurrence:** A common constituent of continental and marine evaporite deposits; as sublimates around fumaroles; in mineral-filled cavities in basaltic lava; in nitrate deposits in arid climates.

**Association:** Halite, polyhalite, anhydrite, gypsum, thénardite, mirabilite (evaporites); thénardite, sassolite (fumaroles); thénardite, blödite (nitrate deposits).

**Distribution:** Many localities, most minor. In Spain, from Villarrubia de Santiago, near Ocaña, Toledo Province, and elsewhere. At Douglashall, near Westeregeln, Saxony-Anhalt, Germany. From Hallstatt, Austria. At Varangéville, near Nancy, Meurthe-et-Moselle, France. Found at many places in the Taltal nitrate district, Antofagasta, Chile. In the USA, from Searles Lake, San Bernardino Co., Borax Lake, Lake Co., and the Salton Sea, Imperial Co., California; in the Permian salt deposits of Ector and Upton Cos., Texas and Eddy Co., New Mexico; near Camp Verde, Yavapai Co., Arizona; from the Great Salt Lake, Davis Co., Utah. At Gypsumville, Manitoba, Canada. From Lake Gillies, Lochiel, South Australia. On Vulcano, Lipari Islands, Italy. In the Grillid volcanic cave, Surtsey Island, Iceland.

**Name:** In allusion to Glauber's Salt (Na<sub>2</sub>SO<sub>4</sub>), the synthetic equivalent of the dominant chemical component, named for Johann Rudolf Glauber (1604–1668), German alchemist.

**Type Material:** Natural History Museum, Paris, France, 23.400–23.402.

**References:** (1) Dana, E.S. (1868) Dana's system of mineralogy, (5th edition), 627–628. (2) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 431–433. (3) Araki, T. and T. Zoltai (1967) Refinement of the crystal structure of a glauberite. Amer. Mineral., 52, 1272–1277. (4) (1968) NBS Mono. 25, 6, 59–60.