

Crystal Data: Hexagonal. *Point Group:* 3*m*. Steep trigonal rhombohedra {03 $\bar{3}$ 2}, modified by {10 $\bar{1}$ 0}, {10 $\bar{1}$ 1}, {01 $\bar{1}$ 2}, {0001}, to 2 mm; may form polycrystals with galeite.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3.5
D(meas.) = 2.612–2.616 D(calc.) = 2.619 Slowly soluble in H₂O.

Optical Properties: Transparent to translucent with clay inclusions. *Color:* Colorless; colorless in transmitted light. *Luster:* Vitreous.
Optical Class: Uniaxial (+). $\omega = 1.440$ $\epsilon = 1.445$

Cell Data: *Space Group:* P31*m*. $a = 12.197(4)$ $c = 19.259(11)$ $Z = 3$

X-ray Powder Pattern: Searles Lake, California, USA.
2.76 (10), 3.52 (8), 3.79 (7), 1.760 (7), 3.01 (6), 2.58 (6), 4.44 (2)

Chemistry:	(1)	(2)	(3)
SO ₃	42.79	42.96	42.95
Na ₂ O	49.51	49.54	49.88
K ₂ O	0.16		
F	8.30	8.55	8.74
Cl	3.53	2.76	2.72
–O = (F, Cl) ₂	4.29	4.22	4.29
Total	[100.00]	99.59	100.00

(1) Searles Lake, California, USA; recalculated to oxides from an original total of 98.95%, after deduction of (Fe, Al)₂O₃ 0.15%, CaO 0.30%, loss on ignition 0.90%, insoluble 0.20%. (2) Do.; by electron microprobe, average of two sets of analyses, recalculated to oxides from an original total of 99.61%. (3) Na₂₁(SO₄)₇F₆Cl.

Occurrence: In a playa lake deposit (Searles Lake, California, USA); associated with an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada).

Association: Galeite, gaylussite, tychite, pirssonite, thénardite, northupite, trona, hanksite, calcite (Searles Lake, California, USA); pectolite, shortite, kogarkoite, phlogopite, arfvedsonite, leucophanite, leucosphenite (Mont Saint-Hilaire, Canada).

Distribution: In the USA, from Searles Lake, San Bernardino Co., California. At Mont Saint-Hilaire, Quebec, Canada. From the Nagyvisnyó evaporite deposit, Bükk Mountains, Hungary.

Name: To honor Dr. John Frank Schairer (1904–1970), American physical chemist, Carnegie Geophysical Laboratory, Washington, D.C., USA, who studied the system Na₂SO₄–NaF–NaCl–H₂O.

Type Material: National Museum of Natural History, Washington, D.C., USA, 96437, 96439, 112736.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 547–548. (2) Brown, F.H. and A. Pabst (1971) New data on galeite and schairerite. *Amer. Mineral.*, 56, 174–178. (3) Pabst, A., D.L. Sawyer, and G. Switzer (1963) Galeite and related phases in the system Na₂SO₄–NaF–NaCl. *Amer. Mineral.*, 48, 485–510. (4) Fanfani, L., A. Nunzi, P.F. Zanazzi, A.R. Zanzari, and C. Sabelli (1975) The crystal structure of schairerite and its relationship to sulphohalite. *Mineral. Mag.*, 40, 131–139.