

Tychite



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Crystal Data: Cubic. *Point Group:* $2/m\bar{3}$. Crystals, to 8 mm, {111}, perhaps modified by small {100}.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3.5–4
D(meas.) = 2.367–2.743 D(calc.) = 2.586

Optical Properties: Transparent to translucent. *Color:* White; colorless in transmitted light.
Luster: Vitreous.
Optical Class: Isotropic. $n = 1.508\text{--}1.510$

Cell Data: *Space Group:* $Fd\bar{3}$. $a = 13.880\text{--}13.942$ $Z = 8$

X-ray Powder Pattern: Searles Lake, California, USA.
2.674 (100), 4.18 (76), 2.459 (40), 3.190 (24), 1.605 (24), 2.006 (17), 1.736 (17)

Chemistry:	(1)	(2)
SO ₃	15.07	15.32
CO ₂	33.50	33.68
MgO	15.80	15.42
Na ₂ O	35.57	35.58
Total	99.94	100.00

(1) Searles Lake, California, USA; average of two analyses. (2) Na₆Mg₂(SO₄)(CO₃)₄.

Polymorphism & Series: Forms a series with ferrotychite.

Occurrence: Uncommon in lake-bed evaporite deposits.

Association: Northupite, gaylussite, thénardite, schairerite, pirssonite (Searles Lake, California, USA); northupite (Katwe Lake, Uganda).

Distribution: In the USA, from Searles Lake, San Bernardino Co., California; and in the Green River Formation, Northern Piceance Creek Basin, Colorado. At Lake Katwe, western Uganda.

Name: From the Greek for *good fortune*, as the first and one of the last ten crystals examined were of this species, from a lot of about 5000 examined.

Type Material: Yale University, New Haven, Connecticut, USA, 3.1634.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 294–295. (2) Mwanje, J. and Y. Kaahwa (1977) Observations on Uganda tychite. *Mineral. Record*, 8, 396. (3) Keester, K.L., G.J. Johnson, Jr., and V. Vand (1969) New data on tychite. *Amer. Mineral.*, 54, 302–305.