

Magadiite

NaSi₇O₁₃(OH)₃·4H₂O

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Crystal Data: Monoclinic. *Point Group:* n.d. Crystals minute, very thin, platy, with a near-orthogonal habit, may be equant, aggregating into spherulites composing thin laminae; less commonly powdery.

Physical Properties: *Tenacity:* Puttylike. Hardness = Soft. D(meas.) = n.d.
D(calc.) = [2.25]

Optical Properties: Translucent to opaque. *Color:* White.
Optical Class: [Biaxial.] *n* = 1.48 2*V*(meas.) = n.d.

Cell Data: *Space Group:* n.d. *a* = 7.22(5) *b* = 15.70(5) *c* = 6.91(5) *β* = 95°54(5)'
Z = [2]

X-ray Powder Pattern: Lake Magadi, Kenya.
15.41 (100), 3.44 (80), 3.146 (50), 3.30 (35), 5.18 (19), 4.46 (18), 5.01 (16)

Chemistry:	(1)	(2)	(3)
SiO ₂	77.62	77.78	76.38
TiO ₂	0.06	trace	
Al ₂ O ₃	0.79	0.20	
Fe ₂ O ₃	0.55	0.12	
MnO	0.01	< 0.01	
MgO	0.26	0.44	
CaO	0.14	0.12	
Na ₂ O	5.55	5.74	5.63
K ₂ O	0.35	0.10	
H ₂ O ⁺	5.28	5.96	
H ₂ O ⁻	9.32	9.46	
H ₂ O			17.99
Total	99.93	99.92	100.00

(1) Lake Magadi, Kenya. (2) Alkali Lake Playa, Oregon, USA. (3) NaSi₇O₁₃(OH)₃·4H₂O.

Occurrence: In silts of upper Pleistocene to recent age, precipitated by evaporation of saline brines (Lake Magadi, Kenya); in veins cutting playa sediments and in muds associated with alkali salts and brines (Alkali Lake Playa, Oregon, USA); in altered volcanic rocks (Trinity Co., California, USA); in marble xenoliths in an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada); in miarolitic cavities in a nepheline syenite sill (near Saint-Amable, Canada).

Association: Kenyaite, calcite (Lake Magadi, Kenya); kanemite (Lake Chad, Chad); bavenite, pectolite, apophyllite, phlogopite, quartz, thaumasite (Mont Saint-Hilaire, Canada); varennite, natroite, eudialyte, shkatulkalite, makatite, pectolite, sphalerite, monazite-(Ce), serandite, zakharovite, lorenzenite, aegirine, taperssuatsiaite (near Saint-Amable, Canada).

Distribution: From Lake Magadi and Lake Bogoria, Rift Valley, Kenya. In the Kanem area, Lake Chad, Chad. In the USA, on Alkali Lake Playa, Lake Co., Oregon, and about five km north of Trinity Lake, Trinity Co., California. From Mont Saint-Hilaire and near Saint-Amable, Quebec, Canada.

Name: For the Kenyan locality, Lake Magadi.

Type Material: National School of Mines, Paris, France; National Museum of Natural History, Washington, D.C., USA, 121336.

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