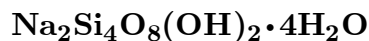


Makatite



©2001 Mineral Data Publishing, version 1.2

Crystal Data: Monoclinic (synthetic). *Point Group:* $2/m$. Crystals, thin striated prisms, to 1 cm; typically as spherulites or fibrous radiating acicular aggregates.

Physical Properties: *Cleavage:* One, parallel to longitudinal axis, excellent. Hardness = Soft. $D(\text{meas.}) = 1.97\text{--}2.07$ $D(\text{calc.}) = [2.05]$

Optical Properties: Translucent. *Color:* White.

Optical Class: Biaxial (+). *Orientation:* Parallel extinction; length slow. $\alpha = 1.472\text{--}1.475$
 $\beta = 1.480$ $\gamma = 1.487\text{--}1.490$ $2V(\text{meas.}) = 70^\circ$

Cell Data: *Space Group:* $P2_1/c$ (synthetic). $a = 7.3881(5)$ $b = 18.094(3)$ $c = 9.5234(5)$
 $\beta = 90.64(1)^\circ$ $Z = 4$

X-ray Powder Pattern: Lake Magadi, Kenya.

5.09 (100), 2.998 (57), 9.04 (53), 2.883 (42), 3.419 (36), 3.125 (35), 8.42 (29)

Chemistry:

	(1)	(2)	(3)
SiO ₂	61.04	60.75	61.25
TiO ₂	0.14		
Al ₂ O ₃	0.15		
Fe ₂ O ₃	0.11		
MgO	0.04		
CaO	0.28		
Na ₂ O	14.76	14.00	15.79
K ₂ O	0.09		
H ₂ O ⁺	12.71		
H ₂ O ⁻	8.12		
H ₂ O		25.00	22.96
Total	97.44	99.75	100.00

(1) Lake Magadi, Kenya. (2) Lovozero massif, Russia. (3) $\text{Na}_2\text{Si}_4\text{O}_8(\text{OH})_2 \cdot 4\text{H}_2\text{O}$.

Occurrence: In cores from drill holes in a lacustrine evaporite series (Lake Magadi, Kenya); leached from natrosilite in an alkalic pegmatite in a differentiated alkalic massif (Lovozero massif, Russia).

Association: Trona, erionite, magadiite, anorthoclase, gaylussite, organic material (Lake Magadi, Kenya); natrolite (Lovozero massif, Russia); vuonnemite, sodalite, ussingite, aegirine, steenstrupine, eudialyte, lovozerite (Mont Saint-Hilaire, Canada); varenesite, eudialyte, zakharovite, shkatulkalite, magdaiite (near Saint-Amable, Canada).

Distribution: From Lake Magadi, Rift Valley, Kenya. On Mt. Alluaiv, Lovozero massif, Kola Peninsula, Russia. In the Höwenegg quarry, Hegau, Baden-Württemberg, Germany. From Mont Saint-Hilaire and near Saint-Amable, Quebec, Canada. At Poços de Caldos, Minas Gerais, Brazil. From the Aris quarry, about 25 km south of Windhoek, Namibia.

Name: From the Masai word *emakut*, meaning *soda*, in allusion to the high sodium content of the mineral.

Type Material: National Museum of Natural History, Washington, D.C., USA, 122170, 122171.

References: (1) Sheppard, R.A., A.J. Gude, III, and R.L. Hay (1970) Makatite, a new hydrous sodium silicate mineral from Lake Magadi, Kenya. *Amer. Mineral.*, 55, 358–366. (2) Khomyakov, A.P., V.I. Stepanov, A.V. Bykova, and I.S. Naumova (1980) Makatite ($\text{Na}_2\text{Si}_4\text{O}_9 \cdot 5\text{H}_2\text{O}$) – the first discovery in the USSR. *Doklady Acad. Nauk SSSR*, 255, 971–976 (in Russian).

(3) Annehed, H., L. Fälth, and F.J. Lincoln (1982) Crystal structure of synthetic makatite $\text{Na}_2\text{Si}_4\text{O}_8(\text{OH})_2 \cdot 4\text{H}_2\text{O}$. *Zeits. Krist.*, 159, 203–210. (4) Horváth, L. and R.A. Gault (1990) The mineralogy of Mont Saint-Hilaire, Quebec. *Mineral. Record*, 21, 284–359, esp. 321. (5) Horváth, L., E. Pfenninger-Horváth, R.A. Gault, and P. Tarassoff (1998) Mineralogy of the Saint-Amable Sill, Varennes and Saint-Amable, Québec. *Mineral. Record*, 29, 83–118, esp. 103–104.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of Mineral Data Publishing.