

Loughlinite

Na₂Mg₃Si₆O₁₆•8H₂O

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Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. Fibrous, to 1 cm; massive.

Physical Properties: Hardness = Soft. D(meas.) = 2.165 D(calc.) = [2.22]

Optical Properties: Translucent. *Color:* Pearly white. *Luster:* Silky.

Optical Class: Biaxial (+). $\alpha = 1.500$ $\beta = 1.505$ $\gamma = 1.525$ 2V(meas.) = n.d.
2V(calc.) = 60°

Cell Data: *Space Group:* Pncn. $a = 14.66$ $b = 26.71$ $c = 5.26$ $Z = [4]$

X-ray Powder Pattern: Sweetwater Co., Wyoming, USA.

12.9 (100), 4.34 (18), 4.51 (7b), 3.63 (7b), 2.55 (7), 3.83 (6b), 2.64 (6)

Chemistry:

	(1)	(2)
SiO ₂	50.80	52.44
TiO ₂	0.02	
Al ₂ O ₃	0.66	
Fe ₂ O ₃	1.85	
FeO	1.51	
MgO	16.01	17.59
CaO	0.00	
Na ₂ O	8.16	9.01
K ₂ O	0.00	
H ₂ O ⁺	6.82	
H ₂ O ⁻	13.68	
H ₂ O		20.96
CO ₂	0.00	
Total	[99.51]	100.00

(1) John Hay, Jr. Well No. 1, Wyoming, USA; after deduction of dolomite 0.38% and magnesite 0.21% impurities. (2) Na₂Mg₃Si₆O₁₆•8H₂O.

Occurrence: As replacements in dolomitic medium- to low-grade oil shale of the Green River Formation (Sweetwater Co., Wyoming, USA).

Association: Shortite, northupite, searlesite (Sweetwater Co., Wyoming, USA); sepiolite, analcime, montmorillonite, dolomite (Killik, Turkey).

Distribution: In the USA, in core from the John Hay, Jr. Well No. 1 and the Union Pacific Well No. 4, and in the shaft of the Westvaco trona mine, Sweetwater Co., Wyoming. In Turkey, at Killik, near Mihalıççık.

Name: For Dr. Gerald Francis Loughlin (1880–1946), Chief Geologist, U.S. Geological Survey.

Type Material: National Museum of Natural History, Washington, D.C., USA, 117717.

References: (1) Fahey, J.J., M. Ross, and J.M. Axelrod (1960) Loughlinite, a new hydrous sodium magnesium silicate. *Amer. Mineral.*, 45, 270–281. (2) Biedl, A. and A. Preisinger (1962) Die Struktur des Loughlinit (Natrium-Sepiolith). *Fortschr. Mineral.*, 40, 50–51 (in German). (3) Echle, W. (1967) Loughlinit (Na-Sepiolith) und Analcime in neogenen Sedimenten Anatoliens. *Contr. Mineral. Petrol.*, 14, 86–101 (in German).