

Crystal Data: Monoclinic. *Point Group:* 2/m. As elongated prismatic crystals to 1 mm.

Physical Properties: *Cleavage:* Perfect on {110}, intersecting at 56° and 124°; [parting on {010}].

Fracture: [Uneven.] *Tenacity:* [Brittle.] *Hardness:* = 5-6 *D(meas.):* = n.d. *D(calc.):* = 3.02

Optical Properties: Transparent. *Color:* Colorless to gray. *Luster:* [Vitreous.]

Optical Class: Biaxial (-). $\alpha = 1.605(2)$ $\beta = 1.630(2)$ $\gamma = 1.634(2)$ $2V(\text{meas.}) = 40.0(5)^\circ$ $2V(\text{calc.}) = 43^\circ$

Pleochroism: X = medium gray; Y = pale gray to colorless; Z = light gray. *Absorption:* X > Z > Y.

Orientation: Y = b; X ^ a = 23.8° (in β obtuse); Z ^ c = 10.1° (in β acute). *Dispersion:* n.d.

Cell Data: *Space Group:* C2/m: $a = 9.8087(7)$ $b = 17.8448(13)$ $c = 5.2905(4)$ $\beta = 103.660(1)^\circ$ Z = 2

X-ray Powder Pattern: Jade Mine Tract, Kachin Province, Myanmar.

2.702 (100), 3.395 (59), 3.128 (56), 2.525 (56) 8.407 (42), 2.574 (36) 3.257 (34)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	59.30	59.80	CaO	0.77	
TiO ₂	0.03		Na ₂ O	10.56	11.57
Al ₂ O ₃	3.89	6.34	K ₂ O	0.32	
Fe ₂ O ₃	3.78		F	0.06	
FeO	[0.80]		-O = F ₂	0.03	
MnO	0.07		H ₂ O	[2.19]	2.24
MgO	19.25	20.05	Total	101.00	100.00

(1) Jade Mine Tract, Kachin Province, Myanmar; average of 10 electron microprobe analyses, H₂O and FeO calculated; corresponds to ^A(Na_{0.87}K_{0.06})_{Σ=0.93} ^B(Na_{1.89}Ca_{0.11})_{Σ=2.00} ^C(Mg_{3.87}Fe²⁺_{0.09}Mn_{0.01}Fe³⁺_{0.38}Al_{0.62})_{Σ=4.97} ^TSi_{8.00}O₂₂ ^W(F_{0.03}OH_{1.97})_{Σ=2.00}. (2) NaNa₂(Mg₄Al)Si₈O₂₂(OH)₂.

Polymorphism & Series: Forms a series with ferro-eckermannite.

Mineral Group: Amphibole supergroup, sodium amphibole.

Occurrence: In a jadeitite-amphibole fels rock, likely formed under blueschist facies conditions.

Association: Jadeite, albite.

Distribution: From the Jade Mine Tract, Kachin Province, Myanmar.

Name: Honors Professor Claes Walther (Harry) von Eckermann (1886-1969), petrologist, Stockholm, Sweden.

Type Material: American Museum of Natural History, New York, New York, USA (108401).

References: (1) Oberti, R., M. Boiocchi, F.C. Hawthorne, N.A. Ball, and G.E. Harlow (2015) Eckermannite revised: The new holotype from the Jade Mine Tract, Myanmar - crystal structure, mineral data, and hints on the reasons for the rarity of eckermannite. *Amer. Mineral.*, 100, 909-914. (2) Adamson, O.J. (1942) Eckermannite, a new alkali amphibole. Preliminary note. *Geol. Fören. Förhandl. Stockholm*, 64, 329-334. (3) (1944) *Amer. Mineral.*, 29, 455 (abs. ref. 2). (4) Hawthorne, F.C., R. Oberti, G.E. Harlow, W.V. Maresch, R.F. Martin, J.C. Schumacher, and M.D. Welch (2012) Nomenclature of the amphibole supergroup. *Amer. Mineral.*, 97, 2031-2048.