

Chromio-pargasite**NaCa₂Mg₄CrSi₆Al₂O₂₂(OH)₂**

Crystal Data: Monoclinic. *Point Group:* 2/m. As prismatic crystals, to 1.5 cm, elongated on [001].

Physical Properties: *Cleavage:* Perfect on {110}. *Fracture:* Uneven. *Tenacity:* Brittle.
Hardness = 6 D(meas.) = 3.08 D(calc.) = 3.121

Optical Properties: Transparent. *Color:* Emerald-green to pale green. *Streak:* Pale green.
Luster: Vitreous. *Pleochroism:* Yellowish to bluish green.
Optical Class: Biaxial (+). $a = 1.644(2)$ $\beta = 1.647(2)$ $\gamma = 1.659(2)$ $2V(\text{calc.}) = 53^\circ$

Cell Data: *Space Group:* C2/m. $a = 9.9176(1)$ $b = 18.0057(2)$ $c = 5.2865(1)$
 $\beta = 105.395(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Akaishi mine, Higashi-Akaishi Mountain, Ehime Prefecture, Japan.
 2.546 (100), 2.697 (81), 3.370 (58), 1.514 (55), 2.585 (50), 2.932 (43), 2.346 (42)

Chemistry:	(1)	(2)
SiO ₂	42.90	41.88
TiO ₂	0.25	
Al ₂ O ₃	12.10	11.84
Cr ₂ O ₃	5.46	8.83
FeO	1.20	
MgO	19.28	18.73
CaO	12.31	13.03
Na ₂ O	3.26	3.60
K ₂ O	0.37	
<u>H₂O</u>	<u>[2.09]</u>	<u>2.09</u>
Total	99.22	100.00

(1) Akaishi mine, Ehime Prefecture, Japan; average of 30 electron microprobe analyses, Fe²⁺/Fe³⁺ estimated using the average ferric iron method, H₂O from stoichiometry; corresponding to (Na_{0.88}K_{0.07})_{Σ=0.95}(Ca_{1.89}Na_{0.02}Mg_{0.09})_{Σ=2.00}Mg_{4.03}(Cr_{0.62}Al_{0.19}Fe³⁺_{0.07}Fe²⁺_{0.07}Ti_{0.03})_{Σ=0.98}(Si_{6.14}Al_{1.86})_{Σ=8.00}O₂₂(OH)₂. (2) NaCa₂Mg₄CrSi₆Al₂O₂₂(OH)₂.

Polymorphism & Series: Forms a series with pargasite.

Mineral Group: Calcium amphibole.

Occurrence: Along cracks in podiform chromitite deposits scattered in serpentinized dunite associated with rocks of the eclogite metamorphic facies; probably formed during retrograde metamorphism.

Association: Chromite, kämmererite, Cr-poor clinocllore, phlogopite, diopside, calcite, uvarovite.

Distribution: From the Akaishi mine, Higashi-Akaishi Mountain, Ehime Prefecture, Japan.

Name: Originally *ehimeite* for the type locality; subsequently changed to *chromio-pargasite* to conform to IMA nomenclature for a chromium-dominant analog of *pargasite*.

Type Material: National Museum of Nature and Science, Tokyo, Japan (NSM-M41160).

References: (1) Nishio-Hamane, D., M. Ohnishi, T. Minakawa, J. Yamaura, S. Saito, and R. Kadota (2012) Ehimeite, NaCa₂Mg₄CrSi₆Al₂O₂₂(OH)₂: The first Cr-dominant amphibole from the Akaishi Mine, Higashi-Akaishi Mountain, Ehime Prefecture, Japan. *Journal of Mineralogical and Petrological Sciences*, 107(1), 1-7. (2) (2015) *Amer. Mineral.*, 100, 1321-1322 (abs. ref. 1). (3) 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.