

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As radial and dendritic aggregates of bladed crystals to 200 μm, flattened on [001] and elongated along [010], displaying {001}, {100}, {010}, and {110}.

**Physical Properties:** *Cleavage:* n.d. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = n.d. D(calc.) = 3.22

**Optical Properties:** Transparent. *Color:* Pale green. *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* Biaxial (-).  $\alpha = 1.698(2)$   $\beta = 1.725(3)$   $\gamma = 1.737(3)$   $2V(\text{meas.}) = 66(2)^\circ$   $2V(\text{calc.}) = 66.5^\circ$  *Pleochroism:* X = light bluish green, Y = bluish green, Z = bluish green. *Absorption:* X < Y ≈ Z. *Dispersion:* Strong,  $r > v$ . *Orientation:* Y = b, X<sup>^</sup> c = 26°.

**Cell Data:** *Space Group:* P2<sub>1</sub>/m.  $a = 5.717(2)$   $b = 6.586(2)$   $c = 5.623(3)$   $\beta = 88.45(3)^\circ$  Z = 2

**X-ray Powder Pattern:** Sadamisaki Peninsula, Ehime Prefecture, Japan. 5.7155 (100), 2.5596 (62), 2.4929 (37), 2.8432 (28), 2.8547 (22), 2.0304 (17), 2.0016 (17)

<b>Chemistry:</b>	(1)
MnO	37.78
CuO	35.74
Cl	18.42
H <sub>2</sub> O	[13.01]
- O = Cl	4.16
Total	100.79

(1) Sadamisaki Peninsula, Ehime Prefecture, Japan; average of 7 electron microprobe analyses supplemented by Raman spectroscopy, H<sub>2</sub>O calculated from stoichiometry; corresponds to Mn<sub>1.085</sub>Cu<sub>0.915</sub>Cl<sub>1.058</sub>(OH)<sub>2.942</sub>.

**Mineral Group:** Atacamite family.

**Occurrence:** A secondary mineral formed by reaction between seawater and primary ore minerals (hausmannite, tephroite, alleghanyite, rhodonite, rhodochrosite, copper, chalcocite) in greenschist facies, metamorphosed, volcanogenic massive sulfide deposits.

**Association:** Cuprite, kutnohorite, malachite, chrysocolla, misakiite.

**Distribution:** From the Sadamisaki Peninsula, Ehime Prefecture, Japan.

**Name:** For the Sea of Iyo, located near the Sadamisaki Peninsula, Japan.

**Type Material:** National Museum of Nature and Science, Tokyo, Japan (M43864) and the Mineral Sciences Department, Natural History Museum of Los Angeles County, Los Angeles, California, USA (66625).

**References:** (1) Nishio-Hamane, D., K. Momma, M. Ohnishi, N. Shimobayashi, R. Miyawaki, N. Tomita, R. Okuma, A.R. Kampf, and T. Minakawa (2017) Iyoite, MnCuCl(OH)<sub>3</sub> and misakiite, Cu<sub>3</sub>Mn(OH)<sub>6</sub>Cl<sub>2</sub>: new members of the atacamite family from Sadamisaki Peninsula, Ehime Prefecture, Japan. *Mineral. Mag.*, 81(3), 485-498. (2) (2017) *Amer. Mineral.*, 102, 2342-2343 (abs. ref. 1).