

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As radial and dendritic aggregates of bladed crystals to 200  $\mu\text{m}$ , 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.  $D(\text{calc.}) = 3.22$

**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:*  $X = \text{light bluish green}$ ,  $Y = \text{bluish green}$ ,  $Z = \text{bluish green}$ . *Absorption:*  $X < Y \approx Z$ . *Dispersion:* Strong,  $r > v$ . *Orientation:*  $Y = b$ ,  $X \wedge c = 26^\circ$ .

**Cell Data:** *Space Group:*  $P2_1/m$ .  $a = 5.717(2)$   $b = 6.586(2)$   $c = 5.623(3)$   $\beta = 88.45(3)^\circ$   $Z = 2$

**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  $\text{Mn}_{1.085}\text{Cu}_{0.915}\text{Cl}_{1.058}(\text{OH})_{2.942}$ .

**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,  $\text{MnCuCl}(\text{OH})_3$  and misakiite,  $\text{Cu}_3\text{Mn}(\text{OH})_6\text{Cl}_2$ : 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).