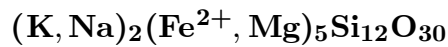


Merrihueite



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Crystal Data: [Hexagonal] (by analogy to osumilite). *Point Group:* $6/m\ 2/m\ 2/m$. In aggregates, to 150 μm , of smaller individuals, as inclusions in enstatite.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 2.87$

Optical Properties: Semitransparent. *Color:* Greenish blue; colorless to greenish blue in thin section, with anomalous blue to purple interference colors.

Optical Class: Uniaxial or anomalously biaxial. *Pleochroism:* Colorless to greenish blue. $n = 1.559\text{--}1.592$; low to moderate birefringence. $2V(\text{meas.}) = 5^\circ\text{--}10^\circ$

Cell Data: *Space Group:* [$P6/mcc$] (by analogy to osumilite). $a = 10.16(6)$ $c = 14.32(6)$
 $Z = 2$

X-ray Powder Pattern: Mezö-Madaras meteorite; nearly identical to osumilite.
3.73 (100), 2.774 (100), 3.23 (90), 7.13 (80), 2.92 (60), 2.530 (50), 5.03 (30)

| | |
|-------------------|------------------------------------|
| Chemistry: | (1) |
| | SiO ₂ 61.8 |
| | Al ₂ O ₃ 0.2 |
| | FeO 23.7 |
| | MnO 0.5 |
| | MgO 4.4 |
| | CaO 0.3 |
| | Na ₂ O 2.0 |
| | K ₂ O 3.8 |
| | <hr/> |
| | Total 96.7 |

(1) Mezö-Madaras meteorite; by electron microprobe, corresponding to $(\text{K}_{0.94}\text{Na}_{0.76}\text{Ca}_{0.06})_{\Sigma=1.76}(\text{Fe}_{3.85}\text{Mg}_{1.27}\text{Mn}_{0.08})_{\Sigma=5.20}(\text{Si}_{12.00}\text{Al}_{0.02})_{\Sigma=12.02}\text{O}_{30}$.

Mineral Group: Milarite group; $\text{K} > (\text{Na} + \text{Ca})$; $(\text{Fe} + \text{Mn}) > \text{Mg}$; $\text{Al}/(\text{Al} + \text{Si}) < 0.2$.

Occurrence: Rare, in a few chondules of a chondrite, as inclusions in clinopyroxenes.

Association: Clinoenstatite, fayalitic olivine, nickel-iron.

Distribution: In the Mezö-Madaras chondritic meteorite.

Name: For Craig M. Merrihue (?–1965), meteoriticist, of the Smithsonian Astrophysical Observatory, Cambridge, Massachusetts, USA.

Type Material: n.d.

References: (1) Dodd, R.T., Jr., W.R. Van Schmus, and U.B. Marvin (1965) Merrihueite, a new alkali-ferromagnesian silicate from the Mezö-Madaras chondrite. *Science*, 149, 972–974. (2) (1965) *Amer. Mineral.*, 50, 2096–2097 (abs. ref. 1). (3) Khan, A.A., W.H. Bauer, and W.C. Forbes (1972) Synthetic magnesian merrihueite, dipotassium pentamagnesium dodecasilicate: a tetrahedral magnesiosilicate framework crystal structure. *Acta Cryst.*, 28, 267–272.