Akimotoite $MgSiO_3$

Crystal Data: Hexagonal. *Point Group*: $\bar{3}$. Granular to 0.4 mm or platy columnar to 1.4 mm.

Physical Properties: *Cleavage*: n.d. *Fracture*: n.d. *Tenacity*: n.d. Hardness = n.d.
D(meas.) = n.d. D(calc.) = 4.0

Optical Properties: *Color*: n.d. *Streak*: n.d. *Luster*: n.d.
Optical Class: n.d.

Cell Data: *Space Group*: $R\bar{3}$. a = 4.78(5) c = 13.6(1)

X-ray Powder Pattern: n.d.

Chemistry

	(1)
Na_2O	0.67
MgO	28.39
Al_2O_3	0.07
SiO_2	56.35
CaO	0.38
TiO_2	0.17
Cr_2O_3	0.16
MnO	0.28
FeO	13.54
Total	100.00

(1) Tenham chondrite meteorite; electron microprobe analysis; corresponds to $Mg_{0.79}Fe_{0.20}SiO_3$.

Mineral Group: Ilmenite group.

Occurrence: In shock-metamorphosed melt veins in chondritic L-6 meteorites.

Association: Clinoenstatite (Tenham); ringwoodite, majorite, majorite-pyrope solid solution (Grove Mountains).

Distribution: From the Tenham, Sixiangkou, and Grove Mountains meteorites.

Name: Honors Syun-iti *Akimoto* for his contributions to high-pressure research.

Type Material: n.d.

References: (1) Tomika, N. and K. Fujino (1999) Akimotoite, (Mg,Fe)SiO_3, a new silicate mineral of the ilmenite group in the Tenham chondrite. Amer. Mineral., 84(3), 267-271. (2) Miyajima, N., A. El Goresy, C. Dupas-Bruzek, F. Seifert, D.C. Rubie, M. Chen, and X. Xie (2007) Ferric iron in Al-bearing akimotoite coexisting with iron-nickel metal in a shock-melt vein in an L-6 chondrite. Amer. Mineral., 92, 1545-1549. (3) Feng, L., M. Miyahara, T. Nagase, E. Ohtani, S. Hu, A. El Goresy, and Y. Lin (2017) Shock-induced P-T conditions and formation mechanism of akimotoite-pyroxene glass assemblages in the Grove Mountains (GRV) 052082 (L6) meteorite. Amer. Mineral., 102(6), 1254-1262.