Bridgmanite $MgSiO_3$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As crystallites or crystalline aggregates to 400 nm; or as pseudomorphs of pyroxene clasts within a shock melt vein.

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

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

Cell Data: *Space Group*: *Pnma*. *a* = 5.02(3) *b* = 6.90(3) *c* = 4.81(2)

X-ray Powder Pattern: Tenham L6 chondrite meteorite.
2.456 (100), 1.400 (76), 1.743 (52), 1.444 (41), 2.081 (37), 1.924 (37), 2.175 (34)

Chemistry:

	(1)	(2)
SiO_2	55.6	59.85
MgO	27.9	40.15
FeO	13.7	
Al_2O_3	0.2	
Na_2O	0.9	
CaO	0.9	
MnO	0.49	
TiO_2	0.19	
Cr_2O_3	0.13	
K_2O	0.04	.
Total	100.05	100.00

(1) Tenham L6 chondrite meteorite; average electron microprobe analysis; corresponds to $(Mg_{0.75}Fe_{0.20}Na_{0.03}Ca_{0.02}Mn_{0.01})Si_{1.00}O_3$. (2) $MgSiO_3$.

Mineral Group: Perovskite supergroup, bridgmanite group.

Occurrence: The dominant mineral of the silicate lower mantle of the Earth. As an impact-induced shock-metamorphic phase enclosed in $(Mg,Fe)SiO_3$ glass in meteorites.

Association: Akimotoite, ringwoodite, clinopyroxene with dominant diopside and jadeite components, ringwoodite, majorite, periclase, wadsleyite, troilite, iron.

Distribution: In the Tenham L6 chondrite meteorite [TL].

Name: Honors Percy W. *Bridgman* (1882-1961), 1946 Nobel laureate in Physics for his contributions to high-pressure mineralogy and research in general. Previously $MgSiO_3$-perovskite.

Type Material: National Museum of Natural History, Washington D.C., USA (USNM 7703).

References: (1) Tschauner, O., C. Ma, J.R. Beckett, C. Prescher, V.B. Prakapenka, and G.R. Rossman (2014) Discovery of bridgmanite, the most abundant mineral in Earth, in a shocked meteorite. Science, 346(6213), 1100-1102. (2) Williams, P.A., F. Hatert, M. Pasero, and S.J. Mills (2014) IMA Commission on new minerals, nomenclature and classification Newsletter 21. New minerals and nomenclature modifications approved in 2014. Mineral. Mag., 78, 798.