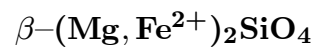


Wadsleyite



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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$ (probable).
As microcrystalline aggregates with grain sizes to 5.0 μm .

Physical Properties: Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 3.84$

Optical Properties: Transparent. *Color:* Pale fawn [light grayish brown].
Optical Class: Biaxial. $n = 1.76$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* $Imma$ (probable). $a = 5.70(2)$ $b = 11.71(7)$ $c = 8.24(4)$
 $Z = 8$

X-ray Powder Pattern: Peace River meteorite.
2.452 (100), 2.038 (80), 1.442 (80), 2.886 (50), 2.691 (40), 2.637 (30), 1.567 (30)

Chemistry:	(1)
	SiO ₂ 38.70
	Cr ₂ O ₃ 0.01
	FeO 22.37
	MnO 0.43
	NiO 0.11
	MgO 38.21
	CaO 0.07
	ZnO 0.10
	<hr/>
	Total 100.00

(1) Peace River meteorite; by electron microprobe, corresponding to
 $(\text{Mg}_{1.48}\text{Fe}_{0.49}\text{Mn}_{0.01})_{\Sigma=1.98}\text{Si}_{1.01}\text{O}_4$.

Polymorphism & Series: Trimorphous with forsterite and ringwoodite.

Occurrence: In fragments within a vein in a “hypersthene”-olivine chondritic meteorite, believed to have formed during an extraterrestrial shock event.

Association: Majorite, ringwoodite, olivine, orthopyroxene, plagioclase, Fe–Ni alloys, troilite.

Distribution: In the Peace River meteorite.

Name: For Dr. A.D. Wadsley.

Type Material: Department of Geology, University of Alberta, Edmonton, Canada.

References: (1) Price, G.D., A. Putnis, S.O. Agrell, and D.G.W. Smith (1983) Wadsleyite, natural $\beta\text{-(Mg, Fe)}_2\text{SiO}_4$ from the Peace River meteorite. *Can. Mineral.*, 21, 29–35. (2) (1983) *Amer. Mineral.*, 68, 1040 (abs. ref. 1).