

$\text{H}_{3.64}\text{Mg}_{1.68}\text{Si}_{2.75}\text{O}_9$  $hP42$ (185)  $P6_3cm - c^4b^3a^3$  $\text{H}_{7.26}\text{Mg}_{3.35}\text{Si}_{5.51}\text{O}_{18}$  [1], F phase

Structural features: Close-packed (O,OH<sub>2</sub>) layers in hc<sub>2</sub> stacking; (Mg,Si) in octahedral, Si in tetrahedral voids (partial disorder). Double slabs of edge-linked (Mg,Si)O<sub>6</sub> octahedra share faces on one side and vertices on the other side with SiO<sub>4</sub> tetrahedra to form a 3D-framework.

Kudoh Y. et al. (1995) [1]

 $\text{Mg}_{2.34}\text{O}_9\text{Si}_{3.18}$  $a = 0.5073$ ,  $c = 1.4013$  nm,  $c/a = 2.762$ ,  $V = 0.3123$  nm<sup>3</sup>,  $Z = 2$ 

site	Wyck.	sym.	$x$	$y$	$z$	occ.	atomic environment
M1	6c	..m	0.312	0	0.042	0.32	8-vertex polyhedron SiO <sub>6</sub> Mg
O2	6c	..m	0.357	0	0.447		7-vertex polyhedron SiMg <sub>6</sub>
M3	6c	..m	0.366	0	0.187	0.58	9-vertex polyhedron Si <sub>2</sub> O <sub>6</sub> Mg
O4	6c	..m	0.661	0	0.278		8-vertex polyhedron Si <sub>2</sub> Mg <sub>6</sub>
O5	4b	3..	$\frac{1}{3}$	$\frac{2}{3}$	0.112		7-vertex polyhedron SiMg <sub>6</sub>
Si6	4b	3..	$\frac{1}{3}$	$\frac{2}{3}$	0.235	0.18	square prism (cube) O <sub>4</sub> Mg <sub>4</sub>
M7	4b	3..	$\frac{1}{3}$	$\frac{2}{3}$	0.365	0.9	7-vertex polyhedron SiO <sub>6</sub>
Si8	2a	3.m	0	0	0.0	0.48	square prism (cube) O <sub>4</sub> Mg <sub>4</sub>
O9	2a	3.m	0	0	0.116		7-vertex polyhedron SiMg <sub>6</sub>
M10	2a	3.m	0	0	0.34	0.18	7-vertex polyhedron O <sub>6</sub> Si

M1 = 0.5Mg + 0.5Si; M3 = 0.5Mg + 0.5Si; M7 = 0.5Mg + 0.5Si; M10 = 0.5Mg + 0.5Si

Transformation from published data: origin shift 0 0 0.634

Experimental: single crystal, diffractometer, X-rays, synchrotron, R = 0.115

Remarks: High-pressure phase. H not located. Short interatomic distances for partly occupied site(s). Hydrogen atoms are not taken into consideration for Pearson symbol, Wyckoff sequence and atomic environments.

References: [1] Kudoh Y., Nagase T., Sasaki S., Tanaka M., Kanzaki M. (1995), Phys. Chem. Miner. 22, 295-299.