

SrMg₄*hP90*(194) *P6₃/mmc* – k⁵h²gf²e**SrMg₄** [1]Structural features: Sr₆ octahedral clusters and Sr₃ trigonal clusters in a matrix of Mg atoms.

Wang F.E. et al. (1965) [1]

Mg₄Sr $a = 1.0511$, $c = 2.8362$ nm, $c/a = 2.698$, $V = 2.7137$ nm³, $Z = 18$

site	Wyck.	sym.	<i>x</i>	<i>y</i>	<i>z</i>	occ.	atomic environment
Sr1	12 <i>k</i>	. <i>m</i> .	0.1369	0.2738	0.0625		7-capped pentagonal prism Mg ₁₃ Sr ₄
Mg2	12 <i>k</i>	. <i>m</i> .	0.1677	0.3354	0.654		11-vertex polyhedron Mg ₇ Sr ₄
Mg3	12 <i>k</i>	. <i>m</i> .	0.1772	0.3544	0.1897		icosahedron Mg ₉ Sr ₃
Mg4	12 <i>k</i>	. <i>m</i> .	0.2321	0.4642	0.5546		11-vertex polyhedron Mg ₈ Sr ₃
Mg5	12 <i>k</i>	. <i>m</i> .	0.5	0.0	0.1177		icosahedron Mg ₉ Sr ₃
Sr6	6 <i>h</i>	<i>mm</i> 2	0.522	0.044	¹ / ₄		cuboctahedron Mg ₁₂
Mg7	6 <i>h</i>	<i>mm</i> 2	0.8989	0.7978	¹ / ₄		icosahedron Mg ₁₀ Sr ₂
Mg8	6 <i>g</i>	.2/ <i>m</i> .	¹ / ₂	0	0		icosahedron Mg ₈ Sr ₄
Mg9	4 <i>f</i>	3 <i>m</i> .	¹ / ₃	² / ₃	0.0373		pseudo Frank-Kasper Mg ₁₀ Sr ₃
Mg10	4 <i>f</i>	3 <i>m</i> .	¹ / ₃	² / ₃	0.1427		7-vertex polyhedron Mg ₇
Mg11	4 <i>e</i>	3 <i>m</i> .	0	0	0.158		icosahedron Mg ₉ Sr ₃

Experimental: single crystal, Weissenberg photographs, X-rays, R = 0.120

Remarks: An additional Mg site was detected in [2]. In table 3 of [1] the *x*-coordinate of former Sr(h) is misprinted as 0.0478 instead of -0.478, and the *z*-coordinate of former Mg(f2) as -0.1427 instead of 0.1427 (checked on interatomic distances).

References: [1] Wang F.E., Kanda F.A., Miskell C.F., King A.J. (1965), Acta Crystallogr. 18, 24-31. [2] Merlo F., Fornasini M.L. (1982), Acta Crystallogr. B 38, 1797-1798.