

MINERAL CHEMISTRY, COARSE PALLASITIC FACIES OF THE SEYMCHAN METEORITE

OLIVINE	SiO₂ wt.%	MgO wt.%	MnO wt.%	FeO wt.%	Total
Means, n=14	40.99	48.21	0.27	11.22	100.70
	Mg # (Fo)	Fa	Fe/Mn (wt.)	FeO/MnO (ox.)	Fe/Mn (at.)
Mean	88.4	11.6	41.2	41.1	40.6
± 2 s.d.	0.46	0.46	3.42	3.41	3.36

SEYMCHAN PALLASITE, coarse olivine. CaO and Cr₂O₃ are each ≤0.03 wt.% while Ni is always <MDL (0.011 wt.% [110 ppm]) and Ti and Al are each <140 ppm. Two grains were analysed, a 5-mm rounded grain in an 11-point traverse, mean Fa 11.44±0.06 and a 250x60-micron grain (n=3), mean Fa 11.96±0.24 (each 1 s.d.). The smaller grain appear slightly more Fe-rich, though this is not significant at the 2 s.d. level. The formula (average for the 14 analyses) is Si_{1.003} Mg_{1.758} Fe_{0.230} Mn_{0.006} O₄.

	Fe wt.%	Ni wt.%	P wt.%	Co wt.%	Total
KAMACITE					
Means, n=10	92.16	6.59	0.02	0.50	99.26
SCHREIBERSITE					
Means, n=7	43.63	39.90	14.81	0.13	98.48

METAL and PHOSPHIDE. An 25-mm epoxy mount of a coarse pallasitic Seymchan, with 5-10 mm olivine crystals enveloped by metal (apparently all kamacite without Ni-rich taenite), and minor phosphide at olivine-metal boundaries. Si is up to 156 ppm (KAM) and 446 ppm (SCH) respectively, above the MDL of 80 ppm. Cr and Cu are generally <MDL (200 and 300 ppm respectively). S (MDL 200 ppm) was not detected in KAM, but averages 300 ppm in SCH, maximum 500 ppm. P may reach 500 ppm in KAM. Metal masses and veinlets and coarse olivine are clearly visible in photo: mount has unusual lustre due to a conducting carbon thin film.



Source:

www.turnstone.ca/seymchan_EPM.pdf

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www.turnstone.ca/rom127se.htm

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