

Table S1. Volumes of reactants and products in reactions 1 to 4, calculated from coefficients of the balanced reactions and from molar volumes taken from Helgeson et al. (1978; with exception for H2O at 800 °C and 0.8 GPa taken from Burnham et al., 1969). Mineral abbreviations as in Figure 4.

	Reactants							Products						
	OI	Pl	Cpx	Spl	Grt	Opx	H2O	sum	Opx	Cpx	Spl	Grt	Amp	sum
V(cm ³ /m)	43.79	100.79	66.09	39.71	148.47	62.56	21.99		62.56	66.09	39.71	148.47	272.92	
Reaction 1	0.70	0.36							0.34	0.37	0.35			
Volume (cm ³)	30.65	36.28						66.94	21.27	24.45	13.90			59.62
%Volume	45.79	54.21							35.68	41.02	23.31			
Reaction 2			0.69	0.52								0.51		
Volume (cm ³)			45.60	20.65				66.25				75.72		75.72
%Volume			68.83	31.17								100.00		
Reaction 3			0.02	0.89	0.07	0.04	0.05				0.45		0.05	
Volume (cm ³)			1.32	35.34	10.39	2.50	1.10	50.66			17.87		13.65	31.52
%Volume			2.61	69.76	20.52	4.94	2.17				56.69		43.29	
Reaction 4	0.70	0.42							0.28	0.37	0.32	0.09		
Volume (cm ³)	30.65	42.33						72.98	17.52	24.45	12.71	13.36		68.04
%Volume	42.00	58.00							25.74	35.94	18.68	19.64		