

Appendix 1

Chemical composition of phases in run products at 850°C (synthesized from Mixture-2).

<i>P</i> (kbar)	18 kbar							
Phase	St	S.E.	Glass-1	S.E.	Opx (Q.C.)	S.E.	Glass-2 (Q.C.)	S.E.
<i>N</i>	28		5		9		8	
SiO ₂	28.48	0.55	25.38	1.94	52.24	1.09	60.83	2.97
Al ₂ O ₃	56.28	1.47	43.26	2.23	12.45	1.05	14.89	5.34
FeO	5.70	2.06	3.92	0.31	8.45	0.83	0.86	0.30
MgO	7.55	0.51	8.90	0.76	24.74	0.65	3.24	0.84
Total	98.02		81.45		97.88		79.81	
Oxygen	46				6			
Si	7.596				1.885			
Al	17.690				0.529			
Fe ³⁺					0.000			
Fe ²⁺	1.272				0.255			
Mg	3.002				1.331			
Total cation	29.559				4.000			
Mg/(Fe+Mg)	0.702		0.802		0.839		0.871	
Mg/(Fe ²⁺ +Mg)					0.839			

<i>P</i> (kbar)	16 kbar			
Phase	Yod	S.E.	Opx (Q.C.)	S.E.
<i>N</i>	23		1	
SiO ₂	36.33	0.45	53.79	n.d.
Al ₂ O ₃	42.16	0.94	11.17	n.d.
FeO	5.89	0.88	2.83	n.d.
MgO	11.59	0.33	27.21	n.d.
Total	95.96		95.00	
Oxygen	19		6	
Si	4.029		1.958	
Al	5.510		0.479	
Fe ³⁺	0.433		0.000	
Fe ²⁺	0.113		0.086	
Mg	1.915		1.477	
Total cation	12.000		4.000	
Mg/(Fe+Mg)	0.778		0.945	
Mg/(Fe ²⁺ +Mg)	0.944		0.945	

<i>P</i> (kbar)	13 kbar							
Phase	Crd	S.E.	Opx	S.E.	Krn	S.E.	Glass	S.E.
<i>N</i>		20		12		11		9
SiO ₂	49.27	0.41	51.32	0.86	30.29	0.49	63.67	0.62
Al ₂ O ₃	33.27	0.43	13.42	0.38	43.02	0.77	11.80	0.25
FeO	1.22	0.11	5.85	0.60	6.26	0.32	0.81	0.05
MgO	12.82	0.31	26.85	1.36	18.21	0.18	3.93	0.20
Total	96.58		97.44		97.78		80.21	
Oxygen	18		6		21.5			
Si	4.990		1.832		3.853			
Al	3.971		0.565		6.450			
Fe ³⁺	0.050		0.000					
Fe ²⁺	0.054		0.175		0.666			
Mg	1.936		1.429		3.453			
Total cation	11.000		4.000		14.422			
Mg/(Fe+Mg)	0.949		0.891		0.838		0.896	
Mg/(Fe ²⁺ +Mg)	0.973		0.891					

<i>P</i> (kbar)	12 kbar							
Phase	Crd	S.E.	Opx	S.E.	Krn ?	S.E.	Glass	S.E.
<i>N</i>		12		19		1		12
SiO ₂	49.25	0.39	47.93	0.69	18.98	n.d.	66.22	0.79
Al ₂ O ₃	32.61	0.15	15.08	0.63	47.10	n.d.	12.99	0.55
FeO	2.93	0.29	12.11	0.50	12.28	n.d.	1.68	0.10
MgO	11.55	0.33	20.89	0.34	19.94	n.d.	1.58	0.11
Total	96.34		96.01		98.29		82.47	
Oxygen	18		6		21.5			
Si	5.046		1.792		2.531			
Al	3.938		0.664		7.403			
Fe ³⁺	0.000		0.000					
Fe ²⁺	0.251		0.379		1.370			
Mg	1.765		1.164		3.964			
Total cation	11.000		4.000		15.267			
Mg/(Fe+Mg)	0.875		0.755		0.743		0.626	
Mg/(Fe ²⁺ +Mg)	0.875		0.755					

Appendix 2

Chemical composition of phases in run products at 950°C (synthesized from Mixture-2).

<i>P</i> (kbar)	18 kbar (for 67 hours)					
Phase	St	S.E.	Glass	S.E.	Opx (Q.C.)	S.E.
<i>N</i>	21		14		6	
SiO ₂	28.24	0.71	59.85	2.01	53.23	0.94
Al ₂ O ₃	55.97	0.89	11.00	0.48	9.61	1.28
FeO	6.35	0.36	1.06	0.05	5.20	0.26
MgO	8.24	0.19	3.10	0.21	32.15	0.44
Total	98.80		75.02		100.19	
Oxygen	46				6	
Si	7.508				1.822	
Al	17.538				0.388	
Fe ³⁺					0.000	
Fe ²⁺	1.412				0.149	
Mg	3.264				1.641	
Total cation	29.723				4.000	
Mg/(Fe+Mg)	0.698		0.839		0.917	
Mg/(Fe ²⁺ +Mg)					0.917	

<i>P</i> (kbar)	16 kbar					
Phase	St	S.E.	Opx	S.E.	Glass	S.E.
<i>N</i>	22		14		17	
SiO ₂	27.45	0.56	49.51	1.35	56.30	1.44
Al ₂ O ₃	55.15	0.91	12.88	1.76	12.49	1.15
FeO	8.84	1.01	8.66	0.68	1.61	0.16
MgO	7.42	0.25	28.88	0.79	3.43	0.33
Total	98.86		99.94		73.83	
Oxygen	46		6			
Si	7.390		1.722			
Al	17.501		0.528			
Fe ³⁺			0.027			
Fe ²⁺	1.992		0.225			
Mg	2.978		1.498			
Total cation	29.860		4.000			
Mg/(Fe+Mg)	0.599		0.856		0.791	
Mg/(Fe ²⁺ +Mg)			0.870			

<i>P</i> (kbar)	15 kbar					
Phase	St	S.E.	Opx	S.E.	Glass	S.E.
<i>N</i>		17		16		13
SiO ₂	27.67	0.59	48.59	0.62	62.37	1.27
Al ₂ O ₃	53.51	0.74	13.97	1.42	12.98	1.05
FeO	9.99	0.62	9.46	0.26	2.16	0.23
MgO	7.16	0.29	27.42	0.65	4.63	0.50
Total	98.33		99.44		82.13	
Oxygen	46		6			
Si	7.533		1.707			
Al	17.169		0.579			
Fe ³⁺			0.007			
Fe ²⁺	2.275		0.271			
Mg	2.906		1.436			
Total cation	29.883		4.000			
Mg/(Fe+Mg)	0.561		0.838		0.793	
Mg/(Fe ²⁺ +Mg)			0.841			

<i>P</i> (kbar)	14 kbar			
Phase	Opx	S.E.	Glass	S.E.
<i>N</i>		14		13
SiO ₂	49.15	0.74	59.63	1.18
Al ₂ O ₃	12.16	0.63	12.47	0.58
FeO	10.74	0.53	1.77	0.13
MgO	27.68	0.44	3.26	0.23
Total	99.74		77.13	
Oxygen	6			
Si	1.729			
Al	0.504			
Fe ³⁺	0.039			
Fe ²⁺	0.277			
Mg	1.451			
Total cation	4.000			
Mg/(Fe+Mg)	0.821		0.767	
Mg/(Fe ²⁺ +Mg)	0.840			

<i>P</i> (kbar)	12 kbar					
Phase	Glass	S.E.	Crn (Rim)	S.E.	Krn ?	S.E.
<i>N</i>		7		3		1
SiO ₂	60.98	0.84	0.06	0.01	26.51	n.d.
Al ₂ O ₃	13.46	0.69	94.61	0.06	44.37	n.d.
FeO	1.27	0.06	5.38	0.28	9.01	n.d.
MgO	4.91	0.21	0.03	0.00	19.67	n.d.
Total	80.62		100.08		99.55	
Oxygen					21.5	
Si					3.386	
Al					6.680	
Fe ³⁺						
Fe ²⁺					0.963	
Mg					3.746	
Total cation					14.774	
Mg/(Fe+Mg)	0.873				0.796	
Mg/(Fe ²⁺ +Mg)						

Appendix 3

Chemical composition of phases in run products at 950°C (synthesized from Mixture-4).

<i>P</i> (kbar)	14 kbar					
Phase	St	S.E.	Opx	S.E.	Glass	S.E.
<i>N</i>	18		15		13	
SiO ₂	27.48	0.37	49.77	0.72	60.57	0.65
Al ₂ O ₃	54.55	0.59	11.77	0.97	12.72	0.46
FeO	7.72	0.18	8.11	1.11	1.43	0.09
MgO	7.92	0.13	29.29	1.06	4.15	0.30
Total	97.67		98.94		78.88	
Oxygen	46		6			
Si	7.450		1.745			
Al	17.430		0.486			
Fe ³⁺			0.024			
Fe ²⁺	1.751		0.214			
Mg	3.203		1.531			
Total cation	29.835		4.000			
Mg/(Fe+Mg)	0.647		0.866		0.838	
Mg/(Fe ²⁺ +Mg)			0.878			

<i>P</i> (kbar)	13 kbar			
Phase	Spr	S.E.	Glass	S.E.
<i>N</i>	18		16	
SiO ₂	15.67	0.70	60.62	0.78
Al ₂ O ₃	53.71	1.40	13.98	0.28
FeO	9.74	0.80	1.38	0.09
MgO	20.26	0.68	5.25	0.75
Total	99.39		81.23	
Oxygen	20			
Si	1.870			
Al	7.553			
Fe ³⁺	0.706			
Fe ²⁺	0.266			
Mg	3.604			
Total cation	14.000			
Mg/(Fe+Mg)	0.788		0.871	
Mg/(Fe ²⁺ +Mg)	0.931			

Appendix 4

Chemical composition of phases in run products at 1050°C (synthesized from Mixture-2).

<i>P</i> (kbar)	19 kbar					
Phase	St	S.E.	Opx	S.E.	Glass	S.E.
<i>N</i>	17		12		20	
SiO ₂	27.59	0.39	51.58	1.72	59.07	1.71
Al ₂ O ₃	55.69	0.61	9.99	2.43	12.99	0.70
FeO	6.10	0.18	6.42	0.54	1.67	0.17
MgO	8.11	0.25	31.13	1.18	3.48	0.39
Total	97.48		99.13		77.21	
Oxygen	46		6			
Si	7.429		1.792			
Al	17.676		0.409			
Fe ³⁺			0.007			
Fe ²⁺	1.373		0.180			
Mg	3.255		1.612			
Total cation	29.733		4.000			
Mg/(Fe+Mg)	0.703		0.896		0.788	
Mg/(Fe ²⁺ +Mg)			0.900			

<i>P</i> (kbar)	18 kbar					
Phase	St	S.E.	Opx	S.E.	Glass	S.E.
<i>N</i>	10		16		6	
SiO ₂	27.62	0.34	50.63	1.39	55.41	2.56
Al ₂ O ₃	54.96	0.39	11.67	1.56	19.38	3.70
FeO	8.45	0.11	8.00	0.42	1.89	0.18
MgO	7.97	0.29	29.74	0.76	3.27	0.38
Total	99.01		100.04		79.95	
Oxygen	46		6			
Si	7.414		1.755			
Al	17.389		0.477			
Fe ³⁺			0.014			
Fe ²⁺	1.898		0.218			
Mg	3.190		1.537			
Total cation	29.891		4.000			
Mg/(Fe+Mg)	0.627		0.869		0.755	
Mg/(Fe ²⁺ +Mg)			0.876			