

Table S1. Probe Data - Silicates**Sample Classification**

Type I spinel lherzolites and hazrzburchites	Type I Websterite	Type II clinopyroxenites	Type II olivine clinopyroxenites	Type II amphibole clinopyroxenites $\pm$ olivine	Type II Wehrlite	Type II/II composite	Type II/I composite	Type I/I composite
pk-G-20-1 Type Ib	pk-G-23B-5	pk-G-21-3	pk-G-20-8	pk-G-22-1	pk-G-20-5	pk-G-20-11	pk-G-20-10a,b	pk-G-21-6
pk-G-20-12a Type Ib	82-4-5	22 MD	pk-G-21-2	pk-G-22-2	pk-G-20-6	pk-G-20-13	pk-G-22-16	pk-G-20-9
pk-G-20-12b Type Ib	82-4-6	90-22-1	pk-G-21-4	pk-G-22-3	pk-G-21-1	pk-G-21-7		pk-G-23B-3
pk-G-20-12c Type Ib		90-22-3	pk-G-21-10	pk-G-22-4	pk-G-54	pk-G-21-8a,b		
pk-G-20-2		90-30	pk-G-21-13	pk-G-22-7		pk-G-21-9		
20-7lherzType Ia		90-45-5	pk-G-23B-7	PK-G-22-8				
pk-G-21-12		90-47-1	90-6-1	pk-G-22-9				
pk-G-21-5		90-47-2		pk-G-22-10				
pk-G-23B-1		90-47-3		pk-G-22-11				
pk-G-23B-2 Type Ia		90-47-6		pk-G-22-12				
pk-G-23B-4 Type Ia				pk-G-22-13				
24 MD				pk-G-22-14				
723 MD				pk-G-22-15				
pk-G-ZH1 Type Ia				90-37				
pk-G-ZH5 Type Ib				90-37-2				

Olivine from Type I peridotites

Olivines from Type I xenoliths

Sample Name	pk-G-20-1		pk-G-20-7		pk-G-20-10 (host of Type II / Type I composite)						pk-G-20-11
	(3)	(6)	(3)	(5)							(1)
SiO ₂	40.71	40.81	40.46	40.57	40.18	40.24	40.17	40.29	39.94	38.84	41.00
TiO ₂											
Al ₂ O ₃					0.03	0.03	0.03	0.03	0.02	0.03	
V ₂ O ₃											
Cr ₂ O ₃					0.01	0.01	0.01	0.01	0.01	0.00	
FeO	9.32	9.32	10.70	10.67	12.06	12.15	12.07	12.16	12.14	12.06	9.25
MnO	0.15	0.16	0.18	0.18	0.16	0.16	0.16	0.16	0.16	0.16	0.16
MgO	49.59	49.45	48.28	48.14	46.36	46.39	46.50	46.50	46.42	46.40	49.54
NiO	0.42	0.41	0.43	0.41	0.34	0.34	0.33	0.34	0.34	0.34	0.43
CaO	0.06	0.06	0.07	0.06	0.00	0.00	0.00	0.01	0.00	0.00	0.07
Total	100.19	100.15	100.05	99.97	99.13	99.32	99.26	99.49	99.03	97.84	100.38
Fo	0.90	0.90	0.89	0.89	0.87	0.87	0.87	0.87	0.87	0.87	0.91

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1984))

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

Olivine from Type I peridotites

Olivines from T

Sample Name	90-12a	pk-G-21-6 (host of Type I/ Type I composite)							pk-G-23B-1		
	(4)	(1)	(2a)	(2b)	(3)	(4)	(5)	(6)	(1a)	(1b)	(2)
SiO ₂	40.83	39.92	40.17	40.15	40.21	39.86	40.13	40.25	40.75	40.58	40.42
TiO ₂											
Al ₂ O ₃											
V ₂ O ₃											
Cr ₂ O ₃											
FeO	9.41	12.52	12.16	11.77	12.29	12.21	12.38	12.36	10.19	10.04	10.06
MnO	0.15	0.22	0.21	0.22	0.22	0.19	0.22	0.20	0.18	0.17	0.15
MgO	49.71	46.60	46.89	47.54	47.21	46.87	46.91	46.58	49.21	48.66	48.71
NiO	0.42	0.36	0.38	0.40	0.40	0.39	0.40	0.39	0.37	0.39	0.39
CaO	0.06	0.08	0.09	0.08	0.10	0.11	0.12	0.08	0.22	0.06	0.07
Total	100.52	99.62	99.81	100.08	100.33	99.52	100.04	99.78	100.70	99.84	99.73
Fo	0.90	0.87	0.87	0.88	0.87	0.87	0.87	0.87	0.90	0.90	0.90

Olivine from Type I peridotites

Olivines from T

Sample Name			pk-G-23B-2		pk-G-23B-3 (host of Type I / Type I composite)					pk-G-23B-4	
	(3)	(4)	(2)	(3)	(1)	(2)	(3)	(4)	(5)		
SiO ₂	40.65	40.40	40.90	40.69	40.57	40.74	40.36	40.23	40.29	41.12	41.03
TiO ₂											
Al ₂ O ₃											
V ₂ O ₃											
Cr ₂ O ₃											
FeO	9.94	9.98	10.22	10.23	10.38	10.20	10.70	10.81	11.38	9.60	9.65
MnO	0.16	0.14	0.13	0.13	0.14	0.18	0.17	0.17	0.18	0.18	0.15
MgO	48.50	48.35	48.62	48.43	48.79	48.79	48.34	48.04	47.81	49.35	49.53
NiO	0.43	0.39	0.40	0.39	0.43	0.43	0.43	0.41	0.41	0.41	0.41
CaO	0.05	0.06	0.08	0.08	0.05	0.06	0.06	0.07	0.06	0.06	0.07
Total	99.68	99.26	100.27	99.87	100.31	100.34	100.00	99.66	100.07	100.66	100.77
Fo	0.90	0.90	0.89	0.89	0.89	0.90	0.89	0.89	0.88	0.90	0.90

Olivine from Type I peridotites

Olivines from T

Sample Name	pk-G-23B-5		ZH1		ZH5	
			(4)	(4)	(3)	(1)
SiO ₂	40.77	40.60	40.94	40.70	40.81	40.84
TiO ₂						
Al ₂ O ₃						
V ₂ O ₃						
Cr ₂ O ₃						
FeO	10.36	10.45	9.29	9.16	10.20	10.04
MnO	0.18	0.17	0.18	0.15	0.13	0.17
MgO	48.51	48.49	49.60	49.46	48.49	48.46
NiO	0.37	0.39	0.42	0.41	0.40	0.41
CaO	0.08	0.08	0.07	0.08	0.09	0.08
Total	100.19	100.10	100.43	99.88	100.03	99.92
Fo	0.89	0.89	0.90	0.91	0.89	0.90

Olivine from Type II pyroxenites

Olivines from Type II xenoliths

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1984))

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

Sample Name	pk-G-20-5		pk-G-20-5									
	(5)	(9)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (2)
SiO ₂	37.53	37.54	38.055	37.485	36.888	36.701	36.491	36.292	36.029	36.906	35.917	37.795
TiO ₂	nd	nd	0.000	0.003	0.010	0.010	0.016	0.014	0.012	0.003	0.010	0.000
Al ₂ O ₃	nd	nd	0.031	0.026	0.019	0.023	0.015	0.013	0.020	0.022	0.016	0.017
V ₂ O ₃	nd	nd	0.000	0.000	0.004	0.009	0.000	0.000	0.014	0.014	0.000	0.000
Cr ₂ O ₃	nd	nd	0.010	0.000	0.013	0.005	0.002	0.000	0.000	0.000	0.000	0.004
FeO	22.18	22.62	21.551	21.875	21.792	21.804	21.797	21.855	21.893	21.791	21.750	21.507
MnO	0.29	0.30	0.278	0.296	0.265	0.281	0.292	0.283	0.281	0.291	0.271	0.274
MgO	39.79	39.91	39.629	39.648	39.479	39.497	39.483	39.599	39.302	39.500	39.375	38.283
NiO	0.12	0.11	0.099	0.091	0.097	0.090	0.095	0.080	0.106	0.103	0.132	0.085
CaO	0.06	0.09	0.062	0.057	0.070	0.072	0.054	0.057	0.067	0.055	0.068	0.061
Total	99.97	100.57	99.715	99.480	98.637	98.490	98.244	98.193	97.724	98.685	97.538	98.026
Fo	0.76	0.76	0.77	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Al CDL99			0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL99			0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR			6.651	7.977	10.793	9.151	13.253	15.278	10.485	9.351	13.188	11.839

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-20-5			pk-G-20-6								
	Grain (2)	Grain (2)	Grain (2)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)
SiO ₂	37.951	38.239	38.041	38.608	38.523	38.532	38.506	38.526	38.557	38.448	38.461	38.547
TiO ₂	0.028	0.003	0.014	0.005	0.006	0.008	0.000	0.001	0.012	0.000	0.000	0.011
Al ₂ O ₃	0.048	0.011	0.015	0.015	0.013	0.011	0.010	0.015	0.017	0.010	0.008	0.010
V ₂ O ₃	0.001	0.004	0.000	0.010	0.001	0.000	0.003	0.000	0.008	0.000	0.000	0.014
Cr ₂ O ₃	0.019	0.021	0.000	0.014	0.000	0.005	0.000	0.003	0.005	0.011	0.000	0.004
FeO	21.199	21.410	21.438	19.821	19.741	19.847	19.723	19.740	19.903	19.949	19.988	19.971
MnO	0.290	0.260	0.301	0.255	0.274	0.253	0.226	0.277	0.255	0.276	0.256	0.252
MgO	38.334	38.679	38.494	41.114	41.182	41.168	40.921	41.046	41.013	41.143	40.982	41.253
NiO	0.081	0.091	0.114	0.125	0.102	0.116	0.098	0.136	0.119	0.114	0.122	0.126
CaO	0.159	0.054	0.065	0.072	0.079	0.066	0.094	0.082	0.067	0.046	0.076	0.062
Total	98.111	98.771	98.483	100.039	99.922	100.006	99.582	99.826	99.955	99.995	99.892	100.248
Fo	0.76	0.76	0.76	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR	4.403	18.136	13.803	13.731	16.000	18.143	19.556	13.708	11.897	19.791	24.124	20.239

Olivine from Type II pyroxenites

Olivines

Sample Name		pk-G-20-6										pk-G
	Grain (1)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	(5)
SiO ₂	38.548	38.349	38.520	38.175	38.467	38.182	38.371	38.205	38.372	38.298	38.358	36.87
TiO ₂	0.008	0.009	0.004	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.003	nd
Al ₂ O ₃	0.011	0.012	0.015	0.015	0.014	0.016	0.017	0.013	0.015	0.014	0.015	nd
V ₂ O ₃	0.000	0.000	0.027	0.014	0.015	0.010	0.000	0.000	0.000	0.006	0.031	nd
Cr ₂ O ₃	0.004	0.000	0.000	0.000	0.001	0.000	0.011	0.000	0.000	0.000	0.000	nd
FeO	19.721	20.002	19.919	20.094	19.993	19.952	19.963	19.879	19.681	19.903	19.912	24.50
MnO	0.264	0.250	0.248	0.265	0.289	0.271	0.265	0.268	0.267	0.274	0.269	0.34
MgO	41.057	41.262	41.148	41.326	41.359	41.336	41.225	41.213	41.125	41.286	41.246	38.16
NiO	0.148	0.126	0.121	0.134	0.130	0.116	0.123	0.126	0.119	0.121	0.121	0.04
CaO	0.068	0.074	0.074	0.068	0.060	0.068	0.080	0.082	0.067	0.082	0.094	0.14
Total	99.828	100.084	100.075	100.100	100.337	99.953	100.055	99.787	99.645	99.985	100.049	100.05
Fo	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.74
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Al %ERR	19.146	16.744	13.642	13.765	14.073	12.244	11.981	14.947	13.215	14.233	13.743	

Olivine from Type II pyroxenites

Olivines

Sample Name	-20-8	pk-G-21-2		pk-G-21-2								
	(10)	(7)	(4)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)
SiO ₂	36.97	37.33	37.23	37.478	37.513	37.667	37.594	38.313	37.844	37.862	37.951	37.798
TiO ₂	nd	nd	nd	0.002	0.001	0.000	0.000	0.000	0.016	0.009	0.000	0.006
Al ₂ O ₃	nd	nd	nd	0.007	0.016	0.009	0.012	0.010	0.011	0.010	0.008	0.008
V ₂ O ₃	nd	nd	nd	0.012	0.000	0.000	0.010	0.000	0.000	0.013	0.007	0.004
Cr ₂ O ₃	nd	nd	nd	0.000	0.000	0.005	0.000	0.000	0.006	0.011	0.005	0.011
FeO	24.29	22.64	22.61	21.778	21.711	21.746	21.645	21.616	21.730	21.865	21.698	21.522
MnO	0.34	0.31	0.29	0.291	0.273	0.305	0.280	0.306	0.299	0.282	0.257	0.300
MgO	38.17	39.39	39.27	39.096	39.082	39.286	39.038	39.554	39.127	39.260	39.063	38.935
NiO	0.03	0.13	0.14	0.082	0.104	0.102	0.095	0.092	0.101	0.098	0.092	0.080
CaO	0.13	0.07	0.07	0.059	0.065	0.062	0.070	0.065	0.061	0.065	0.060	0.075
Total	99.93	99.87	99.61	98.804	98.764	99.181	98.744	99.955	99.194	99.475	99.141	98.739
Fo	0.74	0.76	0.76	0.76	0.76	0.76	0.76	0.77	0.76	0.76	0.76	0.76
Al CDL99				0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9				0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR				29.218	12.803	22.352	16.768	19.914	18.480	20.539	25.651	24.295

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-21-2											
	Grain (1)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	
SiO ₂	38.086	37.877	37.620	37.732	37.740	37.820	37.708	37.931	38.031	37.871	38.248	37.59
TiO ₂	0.019	0.000	0.002	0.003	0.018	0.001	0.011	0.000	0.001	0.004	0.011	nd
Al ₂ O ₃	0.010	0.008	0.006	0.004	0.011	0.010	0.008	0.010	0.013	0.011	0.010	0.0638
V2O3	0.018	0.012	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.002	0.026	nd
Cr ₂ O ₃	0.011	0.000	0.011	0.000	0.015	0.000	0.009	0.013	0.000	0.000	0.010	0.00
FeO	21.727	21.551	21.782	21.621	21.564	21.585	21.535	21.568	21.617	21.546	21.606	21.89
MnO	0.287	0.283	0.286	0.302	0.294	0.282	0.275	0.276	0.270	0.285	0.290	0.30
MgO	39.152	39.172	39.398	39.272	39.337	39.291	39.309	39.396	39.353	39.284	39.439	38.46
NiO	0.099	0.097	0.095	0.107	0.085	0.083	0.102	0.112	0.098	0.102	0.098	0.05
CaO	0.062	0.063	0.053	0.057	0.068	0.055	0.061	0.053	0.064	0.064	0.050	0.15
Total	99.470	99.063	99.259	99.099	99.133	99.126	99.019	99.359	99.448	99.169	99.789	98.51
Fo	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.77	0.76	0.76	0.76	0.758
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Al %ERR	20.677	25.389	32.501	46.999	18.717	20.262	26.013	20.574	15.347	18.266	19.600	

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-21-3					pk-G-21-3						
SiO ₂	37.97	37.16	38.49	38.07	37.60	39.257	39.226	39.093	39.216	38.891	39.276	39.159
TiO ₂	nd	nd	nd	nd	nd	0.024	0.015	0.007	0.019	0.030	0.009	0.011
Al ₂ O ₃	0.0657	0.0645	0.1252	0.0639	0.0774	0.059	0.059	0.056	0.060	0.061	0.053	0.057
V2O3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cr ₂ O ₃	0.00	0.00	0.00	0.00	0.00	0.003	0.001	0.000	0.014	0.003	0.004	0.000
FeO	20.15	22.96	20.72	20.37	21.92	19.478	19.549	19.975	19.583	20.917	19.651	19.924
MnO	0.27	0.31	0.28	0.28	0.30	0.257	0.274	0.276	0.261	0.294	0.291	0.264
MgO	40.20	38.03	39.41	39.93	38.71	40.628	40.467	39.977	40.480	39.280	40.326	40.038
NiO	0.06	0.05	0.05	0.04	0.05	0.051	0.058	0.054	0.045	0.073	0.068	0.044
CaO	0.12	0.14	0.14	0.13	0.13	0.285	0.294	0.284	0.306	0.316	0.311	0.299
Total	98.83	98.71	99.21	98.88	98.77	100.041	99.943	99.721	99.983	99.865	99.990	99.796
Fo	0.781	0.747	0.772	0.777	0.759	0.788	0.787	0.781	0.787	0.770	0.785	0.782
Al CDL99												
Al ₂ O ₃ CDL9												
Al %ERR						3.595	3.573	3.749	3.518	3.470	3.967	3.681

Olivine from Type II pyroxenites

Olivines

Sample Name				pk-G-21-7				pk-G-				
				21-7a ol	21-7a ol	21-7a ol	21-7a ol	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)
SiO ₂	38.842	38.879	38.900	38.95	39.31	38.56	38.96	39.055	38.947	39.120	39.191	38.976
TiO ₂	0.025	0.011	0.015	nd	nd	nd	nd	0.000	0.002	0.006	0.002	0.014
Al ₂ O ₃	0.063	0.058	0.054	0.0459	0.0510	0.0484	0.0452	0.018	0.011	0.017	0.012	0.013
V2O3	nd	nd	nd	nd	nd	nd	nd	0.000	0.019	0.021	0.000	0.000
Cr ₂ O ₃	0.016	0.009	0.012	0.00	0.00	0.00	0.00	0.000	0.003	0.013	0.000	0.000
FeO	21.546	20.780	21.526	15.03	15.43	15.42	15.26	20.247	20.319	20.239	20.321	20.211
MnO	0.325	0.312	0.301	0.17	0.16	0.16	0.16	0.270	0.247	0.283	0.269	0.283
MgO	38.631	39.287	38.699	44.01	43.77	43.91	43.89	40.769	40.770	40.869	40.901	40.904
NiO	0.026	0.069	0.037	0.07	0.09	0.08	0.08	0.114	0.098	0.117	0.102	0.096
CaO	0.297	0.286	0.281	0.23	0.19	0.20	0.20	0.057	0.062	0.059	0.061	0.056
Total	99.771	99.691	99.825	98.50	99.01	98.37	98.61	100.530	100.478	100.744	100.859	100.553
Fo	0.762	0.771	0.762	0.839	0.835	0.835	0.837	0.78	0.78	0.78	0.78	0.78
Al CDL99								0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9								0.004	0.004	0.004	0.004	0.004
Al %ERR	3.436	3.680	3.940					10.935	18.071	12.184	16.591	15.736

Olivine from Type II pyroxenites

Olivines

Sample Name	21-7a					pk-G-21-7a						
	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)
SiO ₂	39.082	38.991	39.157	38.953	39.181	38.761	39.047	38.883	38.938	39.011	38.692	38.986
TiO ₂	0.002	0.005	0.002	0.000	0.004	0.000	0.011	0.023	0.009	0.010	0.006	0.019
Al ₂ O ₃	0.013	0.015	0.014	0.015	0.018	0.012	0.013	0.013	0.011	0.015	0.013	0.013
V ₂ O ₃	0.006	0.011	0.010	0.000	0.007	0.002	0.005	0.000	0.012	0.012	0.014	0.003
Cr ₂ O ₃	0.000	0.005	0.008	0.000	0.011	0.016	0.009	0.006	0.008	0.000	0.000	0.000
FeO	20.227	20.287	20.405	20.189	20.407	19.957	20.008	19.972	19.964	19.904	19.896	19.975
MnO	0.260	0.283	0.291	0.265	0.264	0.270	0.266	0.275	0.270	0.262	0.273	0.276
MgO	40.729	40.847	41.049	40.731	40.985	40.651	40.807	40.727	40.823	40.804	40.599	40.876
NiO	0.112	0.099	0.097	0.113	0.105	0.112	0.110	0.099	0.107	0.109	0.106	0.115
CaO	0.060	0.058	0.060	0.064	0.054	0.061	0.060	0.067	0.062	0.059	0.059	0.062
Total	100.491	100.601	101.094	100.330	101.035	99.841	100.337	100.064	100.206	100.184	99.657	100.324
Fo	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.79	0.78	0.78
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR	15.942	13.338	14.102	13.324	11.176	16.882	14.921	15.933	17.715	13.122	15.763	15.271

Olivines

Olivines

Olivine from Type II pyroxenites

Olivines

Sample Name		pk-G-22-9						pk-G-22-9				
		Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)
SiO ₂	36.62	38.002	37.948	37.742	38.022	37.546	37.484	37.616	37.707	38.807	37.405	37.294
TiO ₂	nd	0.001	0.013	0.017	0.039	0.017	0.008	0.018	0.030	0.011	0.015	0.023
Al ₂ O ₃	0.0453	0.049	0.050	0.049	0.055	0.049	0.048	0.049	0.048	0.064	0.052	0.051
V2O3	nd	0.025	0.000	0.002	0.007	0.010	0.000	0.013	0.001	0.010	0.000	0.004
Cr ₂ O ₃	0.00	0.001	0.000	0.002	0.000	0.000	0.005	0.000	0.000	0.000	0.002	0.001
FeO	22.96	22.023	22.015	21.874	21.972	21.976	21.991	22.126	22.205	22.098	22.102	22.117
MnO	0.31	0.330	0.317	0.308	0.305	0.311	0.292	0.351	0.317	0.311	0.335	0.297
MgO	38.08	38.765	38.820	39.086	38.899	38.998	38.889	39.085	39.204	39.518	38.982	39.038
NiO	0.06	0.064	0.071	0.068	0.064	0.078	0.076	0.070	0.070	0.054	0.054	0.062
CaO	0.08	0.154	0.163	0.159	0.168	0.160	0.153	0.152	0.140	0.153	0.157	0.140
Total	98.15	99.414	99.397	99.304	99.530	99.145	98.945	99.480	99.722	101.026	99.105	99.026
Fo	0.747	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Al CDL99		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR		4.322	4.303	4.387	3.896	4.352	4.498	4.418	4.488	3.463	4.164	4.191

Olivine from Type II pyroxenites

Olivines

Sample Name				pk-G-22-9							pk-G-22-11	
	Grain (2)	Grain (2)	Grain (2)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	(2)	(10)
SiO ₂	36.958	37.389	37.520	37.208	37.059	37.217	37.166	36.972	37.124	0.106	37.46	37.16
TiO ₂	0.015	0.000	0.029	0.016	0.023	0.026	0.016	0.017	0.020	0.005	nd	nd
Al ₂ O ₃	0.054	0.048	0.049	0.049	0.053	0.045	0.047	0.045	0.048	0.003	nd	nd
V ₂ O ₃	0.018	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	nd	nd
Cr ₂ O ₃	0.000	0.000	0.000	0.003	0.000	0.000	0.007	0.004	0.003	0.003	nd	nd
FeO	22.509	22.066	21.953	22.294	22.328	22.326	22.381	22.325	22.331	0.031	23.04	23.02
MnO	0.338	0.291	0.333	0.311	0.298	0.315	0.317	0.305	0.309	0.008	0.33	0.32
MgO	38.407	39.078	39.013	38.753	38.782	38.962	38.846	38.687	38.806	0.104	39.29	39.32
NiO	0.050	0.071	0.054	0.073	0.096	0.069	0.070	0.075	0.077	0.011	0.04	0.05
CaO	0.158	0.157	0.149	0.158	0.157	0.146	0.145	0.150	0.151	0.006	0.14	0.09
Total	98.507	99.100	99.100	98.864	98.797	99.104	98.994	98.580	98.868	0.200	100.30	99.96
Fo	0.75	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76		0.75	0.75
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.000		
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.000		
Al %ERR	3.980	4.530	4.397	4.362	4.074	4.738	4.524	4.796	4.499	0.294		

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-22-13				pk-G-22-13							
					Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)
SiO ₂	37.24	37.98	37.48	37.25	34.164	38.558	38.341	38.382	38.079	38.205	38.815	38.307
TiO ₂	nd	nd	nd	nd	0.019	0.002	0.003	0.008	0.001	0.019	0.000	0.019
Al ₂ O ₃	0.0347	0.0350	0.0351	0.0374	0.057	0.047	0.042	0.041	0.036	0.039	0.036	0.040
V ₂ O ₃	nd	nd	nd	nd	0.014	0.000	0.008	0.003	0.002	0.004	0.000	0.000
Cr ₂ O ₃	0.00	0.00	0.00	0.00	0.000	0.000	0.001	0.000	0.000	0.011	0.003	0.000
FeO	22.34	22.56	21.90	22.44	21.379	21.916	21.760	21.709	21.892	21.804	21.877	21.806
MnO	0.27	0.27	0.26	0.28	0.262	0.277	0.303	0.281	0.301	0.281	0.285	0.289
MgO	38.27	38.39	38.63	38.29	36.271	39.349	39.218	39.105	39.072	39.101	39.227	39.232
NiO	0.05	0.06	0.06	0.05	0.025	0.073	0.060	0.074	0.061	0.065	0.038	0.060
CaO	0.06	0.05	0.08	0.05	0.173	0.144	0.133	0.142	0.134	0.135	0.130	0.127
Total	98.27	99.35	98.45	98.40	92.364	100.364	99.869	99.745	99.580	99.664	100.412	99.880
Fo	0.753	0.752	0.759	0.753	0.75	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Al CDL99					0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9					0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR					3.638	4.527	5.014	5.118	5.796	5.497	5.844	5.357

Olivine from Type II pyroxenites

Olivines

Sample Name			pk-G-22-13									
	Grain (1)	Grain (1)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)	Grain (2)
SiO ₂	38.365	38.040	38.300	38.065	38.006	38.040	38.203	38.104	38.237	38.344	38.191	38.004
TiO ₂	0.019	0.012	0.012	0.016	0.009	0.013	0.010	0.005	0.011	0.008	0.012	0.012
Al ₂ O ₃	0.040	0.040	0.040	0.036	0.039	0.037	0.034	0.038	0.039	0.040	0.043	0.041
V ₂ O ₃	0.000	0.016	0.000	0.007	0.007	0.000	0.012	0.015	0.000	0.004	0.000	0.000
Cr ₂ O ₃	0.000	0.000	0.003	0.010	0.004	0.000	0.004	0.019	0.013	0.000	0.000	0.000
FeO	21.766	21.830	21.863	21.754	21.812	21.849	21.831	21.632	21.706	21.807	21.779	21.881
MnO	0.257	0.289	0.280	0.272	0.283	0.273	0.284	0.296	0.286	0.266	0.307	0.263
MgO	39.184	39.113	39.389	39.120	39.088	39.099	39.152	39.000	39.116	39.191	39.174	39.144
NiO	0.056	0.058	0.049	0.050	0.069	0.033	0.065	0.045	0.048	0.061	0.056	0.063
CaO	0.135	0.133	0.138	0.137	0.136	0.134	0.132	0.146	0.129	0.126	0.134	0.126
Total	99.822	99.530	100.075	99.466	99.452	99.477	99.727	99.300	99.586	99.846	99.695	99.535
Fo	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR	5.341	5.283	5.296	5.963	5.443	5.739	6.163	5.484	5.399	5.279	4.958	5.189

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-22-14	pk-G-22-14										
		Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (1)	Grain (3)
SiO ₂	37.01	38.257	38.476	38.495	38.381	38.438	38.526	38.471	38.594	38.476	38.467	38.515
TiO ₂	nd	0.023	0.011	0.029	0.017	0.023	0.012	0.014	0.014	0.010	0.027	0.025
Al ₂ O ₃	0.0423	0.053	0.052	0.056	0.049	0.051	0.057	0.056	0.058	0.058	0.058	0.053
V ₂ O ₃	nd	0.000	0.000	0.015	0.000	0.002	0.033	0.000	0.015	0.014	0.000	0.010
Cr ₂ O ₃	0.00	0.000	0.000	0.000	0.007	0.002	0.003	0.004	0.000	0.008	0.000	0.000
FeO	22.08	23.240	23.286	23.290	23.136	23.248	23.260	23.264	23.234	23.173	23.137	23.623
MnO	0.32	0.329	0.365	0.341	0.348	0.357	0.334	0.358	0.351	0.354	0.339	0.359
MgO	36.62	38.220	38.149	38.260	38.261	38.329	38.267	38.229	38.241	38.311	38.266	38.218
NiO	0.05	0.045	0.067	0.048	0.059	0.040	0.047	0.048	0.041	0.047	0.063	0.055
CaO	0.12	0.168	0.162	0.160	0.154	0.160	0.167	0.171	0.157	0.161	0.169	0.148
Total	96.25	100.335	100.569	100.694	100.411	100.649	100.705	100.613	100.704	100.613	100.526	101.006
Fo	0.747	0.75	0.74	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.74
Al CDL99		0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Al ₂ O ₃ CDL9		0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Al %ERR		4.067	4.210	3.848	4.445	4.221	3.798	3.884	3.729	3.737	3.767	4.094

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-22-14									pk-G-23B-7		
	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	Grain (3)	(2)	(8)	(12)
SiO ₂	38.450	38.484	38.577	38.574	38.742	38.461	38.605	38.515	38.604	37.73	37.58	37.63
TiO ₂	0.009	0.030	0.017	0.023	0.014	0.020	0.003	0.011	0.018	nd	nd	nd
Al ₂ O ₃	0.047	0.050	0.049	0.051	0.049	0.052	0.050	0.049	0.049	nd	nd	nd
V ₂ O ₃	0.000	0.014	0.008	0.003	0.008	0.000	0.000	0.019	0.000	nd	nd	nd
Cr ₂ O ₃	0.009	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.003	nd	nd	nd
FeO	23.654	23.575	23.483	23.507	23.586	23.387	23.452	23.467	23.440	20.63	20.73	20.63
MnO	0.357	0.357	0.352	0.359	0.362	0.368	0.354	0.353	0.349	0.27	0.27	0.28
MgO	38.257	38.178	38.083	38.128	38.307	38.112	38.133	38.154	38.236	41.05	40.95	40.98
NiO	0.057	0.052	0.040	0.044	0.045	0.056	0.053	0.042	0.075	0.07	0.07	0.08
CaO	0.148	0.147	0.153	0.156	0.153	0.160	0.157	0.156	0.159	0.13	0.11	0.11
Total	100.989	100.886	100.765	100.845	101.266	100.616	100.808	100.766	100.932	99.88	99.71	99.71
Fo	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.78	0.78	0.78
Al CDL99	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002			
Al ₂ O ₃ CDL9	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004			
Al %ERR	4.532	4.278	4.372	4.209	4.421	4.153	4.289	4.391	4.412			

Olivine from Type II pyroxenites

Olivines

Sample Name	pk-G-90-37		pk-G-54		
			(1)	(3)	(4)
SiO ₂	37.30	37.33	38.90	39.37	38.90
TiO ₂	nd	nd	nd	nd	nd
Al ₂ O ₃	nd	nd	nd	nd	nd
V ₂ O ₃	nd	nd	nd	nd	nd
Cr ₂ O ₃	nd	nd	nd	nd	nd
FeO	22.50	22.82	19.78	16.36	19.74
MnO	0.34	0.32	0.30	0.24	0.30
MgO	39.52	39.59	41.53	44.03	41.28
NiO	0.14	0.15	0.18	0.19	0.17
CaO	0.16	0.15	0.06	0.44	0.06
Total	99.96	100.36	100.75	100.63	100.45
Fo	0.76	0.76	0.79	0.83	0.79
Al CDL99					
Al ₂ O ₃ CDL9					
Al %ERR					

Clinopyroxene from discrete Type I peridotites

Clinopyroxene from discrete Type I lherzolites

Data collected on SMU JEOL microprobe (Unpublished data from

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

Type I	pk-G-20-1		pk-G-20-7	pk-G-20-12a			20-12b				
	(1a)	(1b)	(1)	(2)	(5)	(15)	(2)	(4)	(8)	(15)	(1)
SiO ₂	52.40	52.23	52.05	53.00	53.54	53.14	53.16	53.07	53.09	53.23	52.92
TiO ₂	0.34	0.32	0.56	0.07	0.10	0.04	0.08	0.09	0.03	0.01	0.03
Al ₂ O ₃	5.49	5.71	6.98	3.77	3.66	3.62	3.79	3.71	3.88	3.75	3.80
Cr ₂ O ₃	1.12	1.04	0.74	1.04	0.98	0.92	1.03	1.02	0.97	0.89	0.97
FeO	2.31	2.35	3.02	2.50	2.48	2.54	2.53	2.46	2.57	2.57	2.64
MnO	0.08	0.09	0.09	0.07	0.07	0.12	0.08	0.07	0.12	0.13	0.12
MgO	15.87	15.86	15.45	17.35	17.34	17.53	17.22	17.30	17.36	17.45	17.38
CaO	21.10	20.79	20.04	21.90	21.69	22.23	21.93	22.22	21.88	21.84	21.80
Na ₂ O	1.43	1.45	1.54	0.58	0.59	0.56	0.75	0.71	0.73	0.70	0.74
Total	100.14	99.84	100.47	100.28	100.45	100.70	100.57	100.65	100.63	100.57	100.40

Clinopyroxene from discrete Type I peridotites

Clinopyroxene Kempton (1984)

Type I	20-12c		pk-G-23B-1		pk-G-23B-2		pk-G-23B-4		pk-G-23B-5	
	(14)	(7)	(7)	(8)	(9)	(7)	(1)	(4)	(5)	(5)
SiO ₂	52.68	52.73	52.97	52.67	51.95	51.87	51.99	51.79	51.79	51.92
TiO ₂	0.03	0.02	0.25	0.47	0.41	0.44	0.44	0.44	0.48	0.47
Al ₂ O ₃	3.79	3.74	4.71	5.02	6.65	6.76	6.52	6.52	6.77	6.63
Cr ₂ O ₃	0.90	0.96	0.89	0.88	0.67	0.66	0.87	0.84	0.97	1.04
FeO	2.59	2.62	2.43	2.41	2.81	2.82	2.70	2.59	2.86	2.87
MnO	0.13	0.13	0.12	0.13	0.13	0.13	0.09	0.09	0.12	0.12
MgO	17.34	17.32	16.35	16.18	15.72	15.57	15.65	15.51	15.51	15.56
CaO	21.93	21.89	21.24	21.15	20.67	20.35	20.60	20.39	20.25	20.36
Na ₂ O	0.72	0.74	1.29	1.29	1.46	1.50	1.53	1.55	1.57	1.61
Total	100.11	100.15	100.25	100.20	100.47	100.10	100.39	99.72	100.32	100.58

Clinopyroxene from discrete Type I peridotites

Clinopyroxene

Type I	ZH1		ZH5	
	(1)	(4)	(6)	(7)
SiO ₂	51.58	51.72	52.41	52.20
TiO ₂	0.40	0.38	0.33	0.33
Al ₂ O ₃	6.09	6.11	5.65	5.52
Cr ₂ O ₃	0.84	0.86	1.05	1.07
FeO	2.66	2.69	2.82	2.94
MnO	0.09	0.09	0.15	0.15
MgO	15.79	15.76	15.95	15.92
CaO	20.62	20.58	20.50	20.25
Na ₂ O	1.34	1.36	1.51	1.53
Total	99.41	99.55	100.37	99.91

Clinopyroxene from discrete Type II pyroxenites

Clinopyroxenes from Type II clinopyroxenites and olivine clinopyroxenites

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

pk-G-20-5 (grain 4)												
clear region												
		btwn spinel exsol'n	near spinel exsol'n		btwn spinel exsol'n	near spinel exsol'n	between spinel exsol'n	near spinel exsol'n	adj to (14)	rim zone (1)	midpoint (2)	adj to exol'n (4)
	cpx (7)	(8)	(9)	cpx (10)	(11)	(12)	(13)	(14)				
SiO ₂	49.31	49.16	49.29	49.71	49.41	48.72	48.82	49.51	49.00	48.79	49.32	49.40
TiO ₂	1.45	1.51	1.34	1.23	1.35	1.22	1.46	1.27	1.45	1.48	1.31	1.34
Al ₂ O ₃	6.25	6.16	6.02	5.91	5.92	6.41	6.21	5.96	6.61	6.70	6.27	6.18
Cr ₂ O ₃	0.41	0.47	0.36	0.44	0.38	0.77	0.41	0.33	0.27	0.16	0.29	0.19
FeO	6.45	5.95	6.05	6.07	5.83	6.10	5.93	5.75	5.73	5.57	5.67	5.79
MnO	0.16	0.14	0.16	0.16	0.17	0.15	0.18	0.18	0.16	0.16	0.17	0.16
MgO	14.92	14.11	14.38	14.36	14.32	14.43	14.16	14.33	14.10	14.00	14.35	14.34
CaO	20.84	21.96	22.07	21.97	21.85	21.79	22.41	22.28	22.20	22.62	22.62	22.40
Na ₂ O	0.56	0.62	0.62	0.56	0.61	0.61	0.62	0.60	0.60	0.51	0.52	0.58
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.35	100.08	100.29	100.41	99.84	100.20	100.20	100.21	100.12	99.99	100.52	100.38
Mg# cpx	80.5	80.9	80.9	80.8	81.4	80.8	81.0	81.6	81.4	81.8	81.9	81.5
Liquid Mg#	53.1	53.8	53.8	53.7	54.6	53.7	53.9	55.0	54.7	55.2	55.4	54.8

Clinopyroxene from discrete Type II pyroxenites

Clinopyroxene¹⁹⁸⁴)
and olivine

	pk-G-20-5 (grain 4) traverse						pk-G-20-5 (grain 2) Traverse Rim to Rim					
	clear rim (1)	adj to exsol'n (2)	opx exsol'n (3)	adj to spinel exsol'n (4)	adj to spinel exsol'n (5)	btwn exsol'n lamellae (6)	clear rim (1)	(2)	adj to amph replacem ent (3)	near spinel exsol'n (4)	adj to exsol'n (5)	adj to spinel exsol'n (6)
SiO ₂	48.66	49.66	53.23	48.87	49.26	48.99	48.40	48.35	48.95	48.55	49.07	49.27
TiO ₂	1.63	1.18	0.28	1.52	1.44	1.51	1.50	1.63	1.34	1.43	1.45	1.36
Al ₂ O ₃	7.09	5.78	3.84	6.61	6.42	6.45	6.90	7.26	6.10	6.31	6.64	6.32
Cr ₂ O ₃	0.31	0.26	0.15	0.31	0.29	0.50	0.16	0.18	0.18	0.16	0.14	0.13
FeO	6.18	5.88	14.01	6.07	6.07	5.90	6.00	6.10	5.95	5.89	5.88	5.89
MnO	0.17	0.14	0.27	0.13	0.17	0.17	0.19	0.20	0.15	0.17	0.17	0.18
MgO	13.88	14.31	28.54	13.89	14.04	13.93	13.68	13.57	14.15	14.04	14.04	14.28
CaO	22.21	22.39	0.73	22.01	22.01	21.86	22.34	22.40	21.94	22.08	22.16	22.08
Na ₂ O	0.61	0.54	0.03	0.59	0.57	0.63	0.61	0.63	0.58	0.58	0.61	0.57
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.74	100.14	101.08	100.00	100.27	99.94	99.78	100.32	99.34	99.21	100.16	100.08
Mg# cpx	80.0	81.3	78.4	80.3	80.5	80.8	80.3	79.9	80.9	80.9	81.0	81.2
Liquid Mg#	52.4	54.4	50.0	52.9	53.1	53.6	52.8	52.2	53.8	53.9	53.9	54.3

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen and olivine

	pk-G- 20-5 (grain 1)											
	clear rim	btwn exso'n lamellae		adj to spinel exsol'n	adj to exsol'n	near exsol'n	near exsol'n	btwn exsol'n	opx exsol'n	adj to exsol'n	opx exsol'n	avg clear rim comp
	(7)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(11)	
SiO ₂	47.61	47.91	47.88	48.08	48.23	48.45	48.55	48.43	53.00	49.14	52.31	48.62
TiO ₂	1.66	1.76	1.72	1.59	1.65	1.47	1.51	1.51	0.17	1.21	0.20	1.50
Al ₂ O ₃	7.69	8.04	7.86	7.57	7.63	7.38	7.29	7.34	4.17	6.41	4.34	7.18
Cr ₂ O ₃	0.18	0.08	0.06	0.06	0.05	0.06	0.04	0.08	0.04	0.06	0.02	0.03
FeO	6.11	5.85	5.59	6.09	5.77	5.88	5.88	5.79	13.38	5.92	13.39	6.07
MnO	0.14	0.14	0.16	0.17	0.16	0.19	0.19	0.13	0.28	0.14	0.27	0.16
MgO	13.45	13.13	13.43	13.46	13.55	13.71	13.68	13.60	27.76	13.93	28.08	13.68
CaO	21.93	21.99	22.10	21.79	22.02	22.05	21.85	22.03	0.66	22.17	0.67	22.33
Na ₂ O	0.71	0.65	0.62	0.61	0.62	0.63	0.62	0.62	0.02	0.57	0.02	0.58
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.48	99.55	99.42	99.42	99.68	99.82	99.61	99.53	99.48	99.55	99.30	100.15
Mg# cpx	79.7	80.0	81.1	79.8	80.7	80.6	80.6	80.7	78.7	80.7	78.9	80.1
Liquid Mg#	51.9	52.4	54.1	52.0	53.5	53.3	53.3	53.5	50.4	53.6	50.7	52.5

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen and olivine

pk-G-20-5							pk-G-20-8					
			opx exsol'n	adj to exsol'n	adj to exsol'n	btwn exsol'n lamellae						
	rim (1)	(2)	(3)	(4)	(5)	(6)	average	(1)	(3)	grain 2: core to rim tra		
										Core -----		
SiO ₂	48.85	49.24	53.04	47.50	48.47	48.67	47.72	47.80	47.63	47.81	47.84	47.99
TiO ₂	1.38	1.27	0.21	1.24	1.41	1.38	1.97	1.98	1.96	2.02	1.96	1.82
Al ₂ O ₃	6.98	6.41	4.17	9.01	6.78	6.74	8.96	8.93	8.91	8.93	8.84	8.10
Cr ₂ O ₃	0.05	0.06	0.04	0.20	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00
FeO	5.91	6.00	13.33	6.57	5.82	5.94	7.99	7.86	7.82	7.89	7.69	7.25
MnO	0.13	0.17	0.23	0.14	0.17	0.13	0.17	0.17	0.15	0.11	0.16	0.16
MgO	13.82	14.10	28.00	14.23	13.88	13.90	12.96	12.84	12.86	13.00	12.96	13.68
CaO	22.25	22.20	0.75	20.77	22.09	22.21	19.28	19.26	19.17	19.38	19.25	20.15
Na ₂ O	0.56	0.55	0.02	0.54	0.58	0.54	1.34	1.33	1.32	1.34	1.36	0.91
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.93	100.00	99.79	100.20	99.32	99.60	100.39	100.17	99.82	100.48	100.06	100.06
Mg# cpx	80.7	80.7	78.9	79.4	81.0	80.7	74.3	74.4	74.6	74.6	75.0	77.1
Liquid Mg#	53.4	53.5	50.7	51.5	53.9	53.4	44.3	44.5	44.6	44.7	45.2	48.0

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen and olivine

				pk-G-21-2 (grain 5)	pk-G_21-2 traverse	pk-G-21-2 (grain 8)						
	nsect across melted rim			Clear Rim	Clear Rim	Exsolution			Between		(2)	
	-----> Rim			(1)	(2)	Lamellae, crystal center			Clear Rim	Lamellae	pyx (1)	adjacent to (1)
SiO ₂	47.50	48.40	47.98	49.76	49.78	49.44	49.19	49.14	48.54	49.23	50.24	49.95
TiO ₂	1.62	1.50	1.77	1.21	1.21	1.34	1.40	1.45	1.57	1.05	1.21	1.29
Al ₂ O ₃	7.98	7.70	7.66	6.02	6.04	6.39	6.40	6.43	7.20	5.57	5.74	5.87
Cr ₂ O ₃	0.00	0.00	0.00	0.18	0.11	0.23	0.32	0.32	0.25	0.95	0.55	0.38
FeO	6.55	6.32	6.90	5.57	5.48	5.66	5.63	5.47	5.66	6.34	5.58	5.70
MnO	0.13	0.12	0.11	0.18	0.19	0.16	0.17	0.16	0.19	0.15	0.12	0.14
MgO	13.61	14.28	13.91	14.54	14.34	14.48	14.45	14.31	14.02	14.66	14.48	14.54
CaO	20.11	20.85	20.87	22.65	22.49	22.49	22.38	22.47	22.83	21.88	22.48	22.63
Na ₂ O	0.70	0.64	0.62	0.47	0.48	0.50	0.48	0.49	0.47	0.43	0.48	0.48
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	98.20	99.81	99.82	100.58	100.12	100.69	100.42	100.24	100.73	100.26	100.88	100.98
Mg# cpx	78.7	80.1	78.2	82.3	82.3	82.0	82.1	82.3	81.5	80.5	82.2	82.0
Liquid Mg#	50.5	52.6	49.7	56.1	56.2	55.6	55.7	56.2	54.8	53.1	56.0	55.6

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen and olivine

pk-G-21-2 traverse								pk-G-21-3				
	(5) between spinel exsol'n(4)	(5) adjacent to exsol'n (6)	cpx btwn exsol'n (6)	adjacent to pyx exsol'n (7)	btwn exsol'n lamellae (8)	adjacent to pyx exsol'n (9)	adj to exsol'n					
SiO ₂	50.46	50.14	49.87	49.85	49.83	49.65	49.71	49.16	48.51	48.74	48.99	48.36
TiO ₂	1.13	1.25	1.21	1.29	1.27	1.22	1.21	1.66	1.64	1.68	1.64	1.73
Al ₂ O ₃	5.55	5.53	5.48	5.80	5.90	5.72	6.80	7.65	7.74	7.99	7.84	7.78
Cr ₂ O ₃	0.40	0.36	0.36	0.40	0.39	0.32	0.20	0.01	0.01	0.01	0.01	0.01
FeO	5.64	5.83	6.43	5.64	5.53	5.69	5.50	7.23	7.33	6.94	7.05	6.92
MnO	0.20	0.17	0.17	0.17	0.16	0.16	0.16	0.16	0.18	0.15	0.15	0.16
MgO	14.74	14.69	16.21	14.51	14.49	14.53	14.20	13.57	13.38	12.86	13.04	12.67
CaO	22.46	22.24	19.85	22.50	22.25	22.63	22.00	20.13	19.69	20.61	20.77	20.83
Na ₂ O	0.50	0.50	0.46	0.53	0.50	0.52	0.45	0.63	0.65	0.69	0.65	0.76
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	0.01	0.00	0.01	0.00	0.01
NiO	nd	nd	nd	nd	nd	nd	nd	bd	bd	bd	0.01	bd
Total	101.08	100.71	100.04	100.69	100.32	100.44	100.23	100.20	99.12	99.67	100.16	99.23
Mg# cpx	82.3	81.8	81.8	82.1	82.4	82.0	82.1	77.0	76.5	76.7	76.7	76.6
Liquid Mg#	56.2	55.3	55.3	55.8	56.2	55.6	55.9	47.9	47.2	47.6	47.6	47.3

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen
and olivine

pk-G-21-4 Traverse 1

SiO ₂	48.48	49.15	48.78	49.53	49.02	49.36	49.31	49.80	49.38	49.43	48.95	49.73
TiO ₂	1.68	1.50	1.51	1.43	1.43	1.41	1.39	1.23	1.32	1.23	1.26	1.22
Al ₂ O ₃	7.67	6.93	7.00	6.76	6.77	6.73	6.71	6.33	6.19	6.27	6.67	6.31
Cr ₂ O ₃	0.01	0.01	0.02	0.04	0.00	0.00	0.04	0.00	0.04	0.02	0.02	0.02
FeO	6.98	7.32	6.99	5.64	5.87	5.55	5.95	5.93	5.61	5.80	5.93	5.67
MnO	0.15	0.18	0.15	0.16	0.16	0.16	0.20	0.17	0.15	0.14	0.16	0.14
MgO	12.75	13.73	13.35	14.13	14.19	14.13	14.23	14.46	14.62	14.61	14.33	14.45
CaO	20.96	19.79	20.46	21.69	21.89	22.14	21.96	22.05	22.09	22.21	22.01	22.39
Na ₂ O	0.75	0.66	0.66	0.59	0.56	0.54	0.59	0.54	0.56	0.59	0.56	0.59
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	bd	0.02	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	0.00	bd	0.00	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.43	99.27	98.93	99.97	99.89	100.02	100.38	100.51	99.96	100.30	99.89	100.52
Mg# cpx	76.5	77.0	77.3	81.7	81.2	81.9	81.0	81.3	82.3	81.8	81.2	82.0
Liquid Mg#	47.2	47.9	48.3	55.1	54.2	55.5	54.0	54.4	56.1	55.3	54.2	55.5

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen and olivine

pk-G-21-4 Traverse 2								pk-G-21-4				
								(1)				(3)
SiO ₂	49.38	49.27	49.67	49.55	49.69	49.57	49.44	49.08	49.23	48.91	49.08	49.38
TiO ₂	1.30	1.52	1.32	1.31	1.32	1.16	1.41	1.36	1.37	1.42	1.36	1.38
Al ₂ O ₃	6.91	7.33	6.67	6.69	6.68	6.64	7.05	7.17	6.84	7.22	7.00	7.14
Cr ₂ O ₃	0.04	0.02	0.02	0.04	0.05	0.02	0.00	0.02	0.04	0.06	0.00	0.04
FeO	5.82	5.70	5.79	5.87	5.93	5.91	5.98	5.78	5.37	5.89	6.20	5.48
MnO	0.19	0.14	0.20	0.17	0.16	0.15	0.16	0.16	0.14	0.16	0.18	0.18
MgO	14.16	14.14	14.33	14.32	14.37	14.35	14.13	14.10	14.21	14.11	13.96	14.03
CaO	22.44	22.16	22.27	22.13	22.23	22.09	22.23	22.18	22.48	21.70	22.11	21.84
Na ₂ O	0.58	0.58	0.59	0.58	0.53	0.59	0.62	0.58	0.59	0.58	0.57	0.61
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.02
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.82	100.86	100.86	100.66	100.96	100.48	101.02	100.43	100.27	100.05	100.46	100.10
Mg# cpx	81.3	81.6	81.5	81.3	81.2	81.2	80.8	81.3	82.5	81.0	80.1	82.0
Liquid Mg#	54.4	54.9	54.8	54.5	54.3	54.3	53.7	54.5	56.5	54.0	52.5	55.7

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxen and olivine

	pk-G-21-4 traverse			pk-G-23B-7					pk-G-54		
	(4)	(5)	(6)	(1) avg	adj to opx exsol'n	(4)	(6)	(2) avg	rim (5)	core (5)	(9)
SiO ₂	49.13	48.68	48.59	48.65	48.81	48.45	48.70	48.83	48.15	50.70	49.87
TiO ₂	1.52	1.59	1.52	1.54	1.47	1.61	1.63	1.53	1.53	0.73	1.19
Al ₂ O ₃	7.46	7.90	7.96	8.69	8.63	8.75	8.86	8.64	8.27	5.71	6.38
Cr ₂ O ₃	0.04	0.03	0.02	0.20	0.30	0.13	0.10	0.13	0.20	0.12	0.16
FeO	5.77	5.62	5.69	6.84	6.83	6.84	6.76	6.84	5.40	4.88	4.95
MnO	0.25	0.20	0.18	0.18	0.17	0.18	0.18	0.22	0.13	0.19	0.16
MgO	13.74	13.83	13.80	14.03	14.03	13.84	13.75	14.04	14.36	15.16	14.57
CaO	21.93	21.49	21.58	18.66	18.70	18.75	18.84	18.71	21.88	22.66	22.31
Na ₂ O	0.62	0.61	0.70	1.39	1.41	1.35	1.34	1.37	0.50	0.50	0.57
K ₂ O	0.02	0.01	0.02	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.48	99.96	100.06	100.18	100.35	99.90	100.16	100.31	100.42	100.65	100.16
Mg# cpx	80.9	81.4	81.2	78.5	78.5	78.3	78.4	78.5	82.6	84.7	84.0
Liquid Mg#	53.9	54.7	54.3	50.1	50.2	49.8	49.9	50.2	56.6	60.4	59.1

Clinopyroxene from discrete Type II pyroxenites

Clinpyroxene and olivine

90-45

	(5)	(5)
SiO ₂	47.67	48.26
TiO ₂	1.46	1.48
Al ₂ O ₃	8.21	7.75
Cr ₂ O ₃	0.03	0.02
FeO	7.22	6.86
MnO	0.17	0.19
MgO	13.75	13.41
CaO	19.66	20.79
Na ₂ O	0.75	0.77
K ₂ O	nd	nd
CoO	nd	nd
NiO	nd	nd
Total	98.92	99.53
Mg# cpx	77.2	77.7
Liquid Mg#	48.3	48.9

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxene from amphibole-bearing Type II pyroxenites

Data collected on SMU JEOL microprobe (Unpublished data from Kemp

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

pk-G-22-1 (traverse away from amphibole
replacing cpx)

pk-G-22-1

pk-G-22-1 (grain 1 traverse)

pk-G-22-2 (r

Near amph-----> Away from amph

Near amph-----> Away from amph

	avg	(1)	(2)	(3)	(4)		(4)	(5)	(6)	(7)	Rim
SiO ₂	48.58	40.34	48.90	48.93	48.67	48.39	48.70	48.13	48.24	48.47	43.77
TiO ₂	1.36	5.08	1.29	1.44	1.46	1.42	1.35	1.48	1.42	1.55	5.29
Al ₂ O ₃	8.71	14.80	8.30	8.61	8.57	8.83	8.57	8.84	8.98	8.93	9.72
Cr ₂ O ₃	0.13	0.06	0.07	0.01	0.06	0.05	0.06	0.02	0.02	0.08	0.01
FeO	7.34	9.11	7.62	7.14	7.38	7.41	7.14	6.96	7.08	7.13	5.25
MnO	0.23	0.14	0.23	0.18	0.20	0.21	0.28	0.22	0.27	0.28	0.06
MgO	13.60	13.84	13.78	13.87	13.75	13.45	13.75	13.68	13.47	13.49	13.00
CaO	18.74	10.61	18.80	19.02	18.89	19.29	19.03	18.61	18.97	18.92	23.17
Na ₂ O	1.39	2.84	1.40	1.37	1.44	1.37	1.39	1.42	1.40	1.38	0.41
K ₂ O	nd	nd	nd	nd	nd	nd	0.01	0.01	0.01	0.02	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.08	96.82	100.39	100.57	100.42	100.42	100.28	99.37	99.86	100.25	100.68
Mg#cpx	76.76	73.03	76.32	77.59	76.86	76.39	77.44	77.79	77.23	77.13	81.53
Liquid Mg#	47.60	42.68	46.99	48.78	47.73	47.08	48.56	49.07	48.26	48.12	54.83

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxene (1984)

pyroxenites

	im - core - rim transect)		pk-G-22-2 (rim - core- rim transect)						pk-G-22-3 grain 5		
	Core	Rim	Rim (1)	(2)	Core (3)	Core (4)	(5)	Rim (6)	(7)	(8)	(9)
SiO ₂	37.03	41.75	42.50	41.98	42.50	43.58	39.04	38.38	49.04	49.01	48.41
TiO ₂	8.32	5.35	5.56	5.36	5.30	4.81	7.39	7.50	1.29	1.45	1.41
Al ₂ O ₃	15.56	11.50	10.74	11.06	11.40	10.81	14.02	13.61	8.61	8.83	8.91
Cr ₂ O ₃	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.02
FeO	6.07	6.77	5.37	6.66	5.53	5.30	5.71	5.65	7.14	7.04	7.29
MnO	0.05	0.07	0.08	0.07	0.07	0.05	0.06	0.04	0.20	0.14	0.23
MgO	9.71	11.21	12.31	11.77	12.21	12.61	10.48	10.66	13.60	13.53	13.55
CaO	22.17	22.71	23.04	21.81	22.29	22.05	22.31	23.03	19.23	19.13	19.14
Na ₂ O	0.73	0.54	0.41	0.66	0.56	0.56	0.68	0.50	1.29	1.38	1.34
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.64	99.90	100.01	99.37	99.86	99.77	99.69	99.38	100.42	100.52	100.30
Mg#cpx	74.03	74.69	80.34	75.90	79.74	80.92	76.59	77.08	77.25	77.40	76.81
Liquid Mg#	43.95	44.80	52.91	46.42	51.98	53.84	47.36	48.05	48.28	48.51	47.67

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxene pyroxenites

pk-G-22-3 (grain 5) traverse across cpx replaced by amphibole												
<-- cpx -----border w/ amphibole									traverse across amphibole re			
	cpx/amph											
	border								amph	amph		
	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(17)	(18)	(19)	(20)
SiO ₂	48.09	47.99	48.04	48.18	48.14	48.39	40.38	40.55	40.29	40.50	48.72	48.37
TiO ₂	1.67	1.62	1.55	1.52	1.60	1.54	5.02	4.94	4.46	4.43	1.22	1.38
Al ₂ O ₃	8.92	8.98	8.95	8.81	8.64	8.64	14.88	14.87	15.18	15.16	8.63	8.87
Cr ₂ O ₃	0.04	0.00	0.01	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.00
FeO	7.11	7.15	6.85	6.91	7.07	6.98	9.02	9.09	9.04	9.00	6.96	7.24
MnO	0.15	0.18	0.13	0.15	0.13	0.16	0.10	0.11	0.09	0.11	0.17	0.15
MgO	13.16	13.21	13.12	13.14	13.36	13.29	13.52	13.51	13.61	13.49	13.46	13.37
CaO	19.61	19.61	19.79	19.73	19.55	19.65	10.81	11.09	10.74	10.72	19.56	19.48
Na ₂ O	1.30	1.29	1.36	1.29	1.29	1.25	2.69	2.77	2.59	2.61	1.40	1.35
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.05	100.03	99.80	99.73	99.82	99.90	96.43	96.93	96.00	96.02	100.12	100.21
Mg#cpx	76.74	76.71	77.34	77.22	77.11	77.24	72.76	72.60	72.85	72.76	77.51	76.70
Liquid Mg#	47.57	47.52	48.42	48.24	48.09	48.27	42.35	42.15	42.46	42.35	48.66	47.51

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxene pyroxenites

pk-G-22-3 (grain 5)												
placeemnt boundary <-- amphib --- cpx -->						Taverse across amphibole replaceemnt boundary <-- cpx -->						
	(21)	(22)	(23)	(24)	avg	(9)	(10)	(8)	(11)	(12)	(13)	(7)
SiO ₂	48.07	48.39	48.64	48.12	47.79	48.47	48.34	48.29	48.50	48.36	47.64	48.85
TiO ₂	1.59	1.60	1.59	1.63	1.72	1.54	1.56	1.42	1.30	1.38	1.29	1.27
Al ₂ O ₃	8.85	8.87	8.77	8.75	9.16	9.01	9.04	8.96	8.83	8.81	8.87	8.74
Cr ₂ O ₃	0.00	0.03	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
FeO	6.96	7.11	7.18	7.06	7.11	7.14	7.02	7.00	7.23	6.96	7.04	7.07
MnO	0.18	0.14	0.18	0.14	0.14	0.17	0.15	0.17	0.20	0.11	0.14	0.17
MgO	13.28	13.30	13.32	13.30	13.13	13.16	13.14	13.20	13.39	13.37	13.08	13.39
CaO	19.17	19.49	19.25	19.45	19.51	19.38	19.41	19.55	19.48	19.72	19.46	19.57
Na ₂ O	1.34	1.39	1.35	1.39	1.33	1.32	1.33	1.32	1.37	1.39	1.30	1.29
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.44	100.32	100.28	99.84	99.89	100.20	100.00	99.91	100.30	100.10	98.82	100.35
Mg#cpx	77.28	76.93	76.78	77.05	76.70	76.66	76.94	77.07	76.75	77.40	76.81	77.15
Liquid Mg#	48.33	47.83	47.63	48.01	47.51	47.46	47.85	48.03	47.58	48.50	47.66	48.14

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxer pyroxenites

				pk-G-22-3		pk-G-22-9						
	: --- amph -->			grain 12	grain 3							
	(14)	(15)	amph (16)	avg	avg							
SiO ₂	48.47	41.08	40.43	47.99	48.20	48.60	48.65	48.51	48.78	48.88	48.91	48.43
TiO ₂	1.24	4.36	4.65	1.61	1.62	1.86	1.87	1.88	1.89	1.86	1.88	1.89
Al ₂ O ₃	8.54	14.41	15.02	8.97	9.03	8.64	8.64	8.86	8.87	8.80	8.80	8.13
Cr ₂ O ₃	0.00	0.00	0.02	0.00	0.00	0.03	0.03	0.03	0.03	0.03	0.03	0.03
FeO	7.17	8.94	8.93	6.93	7.06	7.00	7.18	7.46	7.40	7.37	7.31	7.34
MnO	0.17	0.12	0.12	0.14	0.14	0.16	0.16	0.17	0.17	0.18	0.18	0.16
MgO	13.42	13.78	13.66	13.15	13.24	12.93	12.76	12.89	12.83	12.86	12.82	12.85
CaO	19.68	11.36	10.84	19.79	19.64	19.18	19.15	19.14	19.16	19.23	19.24	19.35
Na ₂ O	1.33	2.44	2.65	1.26	1.32	1.62	1.62	1.64	1.65	1.65	1.62	1.27
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	0.02	0.01	0.00	0.01	0.01	0.01	0.00
NiO	nd	nd	nd	nd	nd	0.00	0.00	0.00	bd	0.02	0.00	0.01
Total	100.02	96.49	96.32	99.84	100.25	100.05	100.06	100.58	100.78	100.90	100.81	99.46
Mg#cpx	76.94	73.32	73.17	77.18	76.97	76.69	76.00	75.50	75.57	75.68	75.76	75.72
Liquid Mg#	47.85	43.04	42.85	48.19	47.90	47.50	46.54	45.88	45.96	46.11	46.22	46.17

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxer pyroxenites

				pk-G-22-11 (grain 1)						pk-G		
				(2)	(3)	(4)	(5)	(6)	avg	cpx near a		
SiO ₂	48.48	48.36	48.22	47.70	47.72	47.52	47.66	47.76	47.39	47.06	47.76	47.71
TiO ₂	1.88	1.91	1.89	2.05	2.16	2.22	2.16	2.27	2.20	2.27	1.80	1.80
Al ₂ O ₃	8.15	8.27	8.29	8.67	8.59	8.81	8.95	8.87	9.35	9.69	8.80	9.09
Cr ₂ O ₃	0.03	0.04	0.03	0.01	0.02	0.00	0.04	0.00	0.02	0.06	0.08	0.07
FeO	7.17	7.18	7.25	6.88	6.96	7.06	7.06	7.11	7.15	7.30	6.83	7.30
MnO	0.17	0.15	0.17	0.16	0.18	0.18	0.16	0.14	0.17	0.14	0.15	0.13
MgO	12.78	12.81	12.70	13.09	12.97	13.03	12.91	12.91	12.77	12.86	13.16	13.20
CaO	19.31	19.29	19.28	19.63	19.71	19.89	19.69	19.69	19.52	19.84	19.75	19.80
Na ₂ O	1.25	1.26	1.27	1.29	1.34	1.26	1.32	1.29	1.29	1.34	1.29	1.24
K ₂ O	nd	nd	nd	0.01	0.00	0.03	0.00	0.01	0.01	nd	nd	nd
CoO	0.02	0.02	0.03	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	0.00	0.01	0.02	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.25	99.29	99.14	99.48	99.65	99.97	99.95	100.04	99.86	100.56	99.62	100.34
Mg#cpx	76.05	76.06	75.73	77.23	76.86	76.69	76.52	76.40	76.10	75.85	77.45	76.32
Liquid Mg#	46.61	46.64	46.18	48.26	47.74	47.50	47.27	47.09	46.68	46.34	48.57	46.99

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxer pyroxenites

-22-11 (grain 4)					pk-G-22-11 (grain 5)							
amphibole replacment					(spot 4)	(spot 5)	(spot 6)	traverse from boundary w amphibole replacment				cpx nea
SiO ₂	47.81	47.27	47.75	47.54	47.52	47.66	47.76	47.73	47.73	48.32	48.03	47.30
TiO ₂	2.34	2.44	1.98	2.09	2.22	2.16	2.27	1.96	1.97	1.81	2.00	1.99
Al ₂ O ₃	9.07	9.38	8.86	9.09	8.81	8.95	8.87	8.66	8.69	9.07	8.79	9.16
Cr ₂ O ₃	0.02	0.07	0.12	0.04	0.00	0.04	0.00	0.03	0.02	0.00	0.00	0.00
FeO	7.30	7.36	7.33	7.14	7.06	7.06	7.11	7.28	7.11	7.12	7.39	7.39
MnO	0.14	0.15	0.16	0.12	0.18	0.16	0.14	0.16	0.16	0.16	0.14	0.16
MgO	12.98	13.45	13.26	13.08	13.03	12.91	12.91	12.84	12.75	12.51	12.94	12.96
CaO	19.69	18.93	19.91	20.01	19.89	19.69	19.69	19.95	19.74	19.45	19.86	19.12
Na ₂ O	1.42	1.48	1.23	1.31	1.26	1.32	1.29	1.27	1.33	1.32	1.30	1.36
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	100.77	100.53	100.60	100.42	99.97	99.95	100.04	99.88	99.50	99.76	100.45	99.44
Mg#cpx	76.02	76.51	76.33	76.56	76.69	76.52	76.40	75.87	76.17	75.80	75.73	75.76
Liquid Mg#	46.57	47.25	47.00	47.31	47.50	47.27	47.09	46.37	46.78	46.27	46.19	46.23

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxer pyroxenites

pk-G-22-11		pk-G-22-11								pk-G-	
r amphib replacment		(4)	(4)	(4)	(4)						
SiO ₂	47.64	47.76	47.06	47.76	47.71	47.81	47.27	47.75	47.54	49.48	49.34
TiO ₂	1.82	1.82	2.27	1.80	1.80	2.34	2.44	1.98	2.09	1.32	1.30
Al ₂ O ₃	8.99	8.99	9.69	8.80	9.09	9.07	9.38	8.86	9.09	7.82	7.82
Cr ₂ O ₃	0.04	0.05	0.06	0.08	0.07	0.02	0.07	0.12	0.04	0.00	0.01
FeO	7.30	6.96	7.30	6.83	7.30	7.30	7.36	7.33	7.14	6.97	7.08
MnO	0.16	0.16	0.14	0.15	0.13	0.14	0.15	0.16	0.12	0.16	0.17
MgO	12.86	12.84	12.86	13.16	13.20	12.98	13.45	13.26	13.08	13.36	13.37
CaO	19.74	19.45	19.84	19.75	19.80	19.69	18.93	19.91	20.01	18.48	18.52
Na ₂ O	1.30	1.29	1.34	1.29	1.24	1.42	1.48	1.23	1.31	1.35	1.36
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.01	0.01
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.01	0.03
Total	99.85	99.32	100.56	99.62	100.34	100.77	100.53	100.60	100.42	98.95	98.99
Mg#cpx	75.85	76.68	75.85	77.45	76.32	76.02	76.51	76.33	76.56	77.34	77.08
Liquid Mg#	46.34	47.49	46.34	48.57	46.99	46.57	47.25	47.00	47.31	48.42	48.05

Clinopyroxene from discrete Type II amphibole pyroxenites

Clinopyroxer pyroxenites

	22-13		pk-G-21-15				pk-G-29-2			
			(12)	(1)	(2)	(3)		(2)	(3)	(4)
SiO ₂	49.34	49.38	49.70	50.14	49.34	49.31	51.51	51.28	51.81	51.57
TiO ₂	1.30	1.33	1.11	1.07	1.17	1.33	0.26	0.35	0.25	0.30
Al ₂ O ₃	7.86	8.00	7.49	6.82	7.42	7.05	3.65	3.88	3.50	3.60
Cr ₂ O ₃	0.01	0.00	0.22	0.32	0.45	0.51	0.07	0.15	0.03	0.04
FeO	7.10	7.07	6.98	6.92	6.78	7.05	10.63	10.84	10.70	10.73
MnO	0.19	0.16	0.16	0.14	0.20	0.16	0.38	0.34	0.37	0.38
MgO	13.34	13.26	13.02	13.25	13.01	12.93	13.10	13.09	13.08	13.06
CaO	18.52	18.49	20.58	20.51	20.20	20.67	19.65	19.34	19.79	19.76
Na ₂ O	1.37	1.37	1.01	0.99	1.04	1.03	0.97	1.00	0.93	0.97
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	0.00	0.01	nd	nd	nd	nd	nd	nd	nd	nd
NiO	0.00	0.01	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.02	99.07	100.27	100.16	99.61	100.04	100.22	100.27	100.46	100.41
Mg#cpx	77.00	76.98	76.88	77.34	77.38	76.58	68.72	68.28	68.54	68.45
Liquid Mg#	47.93	47.91	47.76	48.41	48.47	47.34	37.66	37.18	37.47	37.37

Clinopyroxene from Type I / Type I composite xenoliths

Clinopyroxene from Type I / Type I composite

Data collected on SMU JEOL microprobe (Unpublished data from Kem)

	pk-G-20-2		pk-G-20-2		pk-G-20-2 traverse			pk-G-20-2				pk-G-
	Vein (3)	Vein (3)	rim	core	avg	rim	interior	vein	vein (2)	Host (16)	Host (20)	(5)
SiO ₂	51.89	51.66	52.19	51.52	51.80	51.81	51.39	51.81	51.52	52.30	52.11	51.91
TiO ₂	0.42	0.42	0.34	0.45	0.39	0.42	0.41	0.46	0.47	0.45	0.43	0.53
Al ₂ O ₃	6.72	7.38	7.16	7.71	7.12	6.82	7.36	7.45	7.98	6.85	6.71	6.57
Cr ₂ O ₃	0.66	0.70	0.74	0.67	0.61	0.64	0.63	0.64	0.59	0.63	0.59	0.73
FeO	2.66	2.70	2.72	2.96	2.70	2.59	2.62	2.77	2.78	2.56	2.61	2.81
MnO	0.04	0.05	0.04	0.04	0.05	0.02	0.05	0.04	0.10	0.04	0.10	0.11
MgO	16.07	15.41	15.59	15.41	15.64	15.80	15.46	15.55	15.26	15.78	15.84	15.66
CaO	20.68	20.51	20.57	20.44	20.80	20.98	20.86	20.57	20.50	20.79	20.93	20.61
Na ₂ O	1.28	1.39	1.34	1.42	1.38	1.35	1.37	1.39	1.43	1.35	1.32	1.38
Total	100.42	100.22	100.69	100.62	100.49	100.43	100.15	100.68	100.63	100.75	100.64	100.31
Mg # cpx	91.5	91.0	91.1	90.3	91.2	91.6	91.3	90.9	90.7	91.7	91.5	90.9

Clinopyroxene from Type I / Type I composite xenoliths

Clinopyroxene (1984)

	20-9b	pk-G-20-9a traverse from host to vein						pk-G-21-6				
	(8)	(11)	(14)	(5)	(3)	vein	host average	host (11)	host (9)	vein (13)	vein (12)	host (1)
SiO ₂	52.12	51.82	51.77	51.70	51.90	51.68	52.13	52.52	51.94	52.11	52.00	52.11
TiO ₂	0.49	0.57	0.57	0.53	0.56	0.49	0.50	0.33	0.45	0.36	0.43	0.31
Al ₂ O ₃	6.55	6.66	6.61	6.88	6.92	7.01	6.75	4.79	5.08	4.80	5.18	5.00
Cr ₂ O ₃	0.75	0.71	0.72	0.78	0.78	0.84	0.75	1.13	1.23	1.20	1.25	1.27
FeO	2.84	2.84	2.72	2.89	2.80	2.88	2.79	3.70	3.84	3.49	3.42	3.75
MnO	0.10	0.09	0.10	0.10	0.10	0.07	0.07	0.14	0.17	0.14	0.13	0.16
MgO	15.54	15.55	15.59	15.54	15.46	15.68	15.85	16.23	16.09	16.11	15.89	16.39
CaO	20.50	20.59	20.59	20.37	20.49	20.74	20.20	19.71	19.40	20.49	20.41	19.63
Na ₂ O	1.39	1.34	1.36	1.39	1.39	1.38	1.40	1.47	1.55	1.26	1.37	1.45
Total	100.28	100.17	100.03	100.18	100.40	100.77	100.44	100.02	99.75	99.96	100.08	100.07
Mg # cpx	90.7	90.7	91.1	90.6	90.8	90.7	91.0	88.7	88.2	89.2	89.2	88.6

Clinopyroxene from Type I / Type I composite xenoliths

Clinopyroxene

		pk-G-23B-3				
	host	vein	vein	vein	host	host
	(3)	(13)	(12)	(11)	(9)	(10)
SiO ₂	52.41	51.00	51.52	51.70	52.33	52.41
TiO ₂	0.30	0.86	0.69	0.71	0.34	0.48
Al ₂ O ₃	5.09	7.26	6.76	6.69	6.06	6.28
Cr ₂ O ₃	1.34	0.24	0.38	0.33	0.50	0.49
FeO	3.91	2.77	2.72	2.62	2.60	2.73
MnO	0.17	0.12	0.13	0.13	0.10	0.11
MgO	16.35	15.21	15.41	15.55	15.90	15.85
CaO	19.52	20.95	20.95	21.02	20.86	20.54
Na ₂ O	1.56	1.40	1.37	1.37	1.47	1.49
Total	100.65	99.81	99.93	100.12	100.16	100.38
Mg # cpx	88.2	90.7	91.0	91.4	91.6	91.2

Clinopyroxene from Type II / Type I composite xenoliths

Clinopyroxene from Type II / Type I composite

Data collected on SMU JEOL microprobe (Unpublished data from Kempton)

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

	Anhydrous vein											
	pk-G-20-10a trasect host to vein						pk-G-20-10					
	host (11)	host (14)	host (17)	host (19)	vein (20)	vein (21)	host	vein	host	host	host	host
SiO ₂	52.04	51.83	51.52	51.55	51.39	51.32	51.84	51.14	52.90	52.60	52.84	52.90
TiO ₂	0.59	0.63	0.68	0.66	0.69	0.66	0.56	0.62	0.58	0.60	0.57	0.58
Al ₂ O ₃	6.58	6.74	7.02	7.26	7.69	7.86	6.40	7.86	6.45	6.88	6.44	6.50
Cr ₂ O ₃	0.55	0.54	0.47	0.34	0.08	0.08	0.57	0.06	0.49	0.50	0.49	0.50
FeO	3.11	3.05	3.19	3.20	3.45	3.45	2.92	3.52	3.07	3.12	3.13	3.13
MnO	0.11	0.12	0.10	0.10	0.15	0.13	0.13	0.13	0.13	0.09	0.09	0.11
MgO	15.57	15.45	15.42	15.41	15.18	15.14	15.73	15.22	15.61	15.49	15.61	15.65
CaO	20.73	20.86	20.65	20.69	20.42	20.52	20.92	20.85	20.20	20.11	20.22	20.24
Na ₂ O	1.25	1.28	1.25	1.25	1.31	1.33	1.31	1.30	1.21	1.21	1.21	1.20
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	0.01	0.02	0.01	0.01
NiO	nd	nd	nd	nd	nd	nd	nd	nd	0.05	0.05	0.03	0.04
Total	100.53	100.50	100.30	100.46	100.36	100.49	100.38	100.70	100.70	100.64	100.66	100.89
Mg# cpx	89.92	90.03	89.60	89.57	88.69	88.66	90.57	88.52	90.06	89.86	89.89	89.90
Liquid Mg#	71.05	71.29	70.32	70.24	68.32	68.26	72.53	67.94	71.35	70.91	70.98	71.00

Clinopyroxene from Type II / Type I composite xenoliths

Clinopyroxene (1984)

	pk-G-20-10							pk-G-22-16 traverse from within host to			
	host	vein	vein	vein	vein	vein	vein	Host -----			
								1	2	3	4
SiO ₂	52.32	52.53	52.55	52.56	52.48	51.74	51.92	52.34	52.20	52.11	52.43
TiO ₂	0.59	0.61	0.61	0.60	0.61	0.64	0.63	0.36	0.44	0.44	0.41
Al ₂ O ₃	6.19	7.23	7.17	7.04	7.10	7.08	7.13	5.72	5.98	5.95	6.08
Cr ₂ O ₃	0.48	0.06	0.05	0.05	0.06	0.06	0.06	0.50	0.47	0.46	0.50
FeO	3.19	3.32	3.30	3.50	3.30	3.38	3.29	4.04	4.00	3.98	3.92
MnO	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.10	0.09	0.09	0.09
MgO	15.45	15.29	15.33	15.41	15.34	15.12	15.10	15.55	15.33	15.27	15.37
CaO	20.08	20.12	20.05	20.14	20.18	20.04	20.10	20.09	19.95	19.98	20.18
Na ₂ O	1.22	1.23	1.22	1.21	1.21	1.26	1.25	1.48	1.47	1.51	1.46
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	0.00	0.01	0.01	0.01	0.01	0.03	0.00	nd	nd	nd	nd
NiO	0.04	0.05	0.04	0.02	0.05	0.05	0.06	nd	nd	nd	nd
Total	99.65	100.54	100.45	100.64	100.45	99.52	99.66	100.18	99.93	99.79	100.44
Mg# cpx	89.61	89.14	89.22	88.71	89.22	88.86	89.10	87.28	87.23	87.24	87.48
Liquid Mg#	70.35	69.31	69.47	68.36	69.47	68.68	69.22	65.36	65.26	65.29	65.78

Clinopyroxene from Type II / Type I composite xenoliths

Clinopyroxene

	Hard amphibole vein		pk-G-22-16				Hydrous vein					
	-----> vein						pk-G-22-16 Traverse to Amphibole					
	5	6	11	10	7	2	1	2	3	4	5	6
SiO ₂	52.28	52.50	52.26	51.86	51.58	52.49	52.58	52.28	52.53	52.67	52.65	52.21
TiO ₂	0.33	0.20	0.46	0.49	0.59	0.32	0.32	0.45	0.40	0.32	0.33	0.32
Al ₂ O ₃	5.48	5.45	5.99	6.09	6.34	5.71	5.29	5.60	5.62	5.35	5.39	5.25
Cr ₂ O ₃	0.43	0.42	0.45	0.46	0.58	0.45	0.52	0.48	0.42	0.42	0.42	0.38
FeO	4.13	3.99	3.97	4.04	3.94	4.10	4.08	3.81	4.04	4.06	3.70	4.06
MnO	0.11	0.10	0.06	0.07	0.07	0.07	0.06	0.10	0.09	0.05	0.07	0.09
MgO	15.50	15.64	15.44	15.28	15.29	15.77	15.72	15.58	15.62	15.91	15.68	15.97
CaO	20.29	20.41	20.02	20.11	20.26	20.11	20.15	19.97	20.27	19.86	20.27	20.24
Na ₂ O	1.43	1.39	1.48	1.45	1.39	1.41	1.47	1.41	1.46	1.38	1.40	1.41
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	99.98	100.10	100.13	99.85	100.04	100.43	100.19	99.68	100.45	100.02	99.91	99.93
Mg# cpx	87.00	87.48	87.39	87.08	87.37	87.27	87.29	87.94	87.33	87.48	88.31	87.52
Liquid Mg#	64.78	65.77	65.59	64.96	65.54	65.34	65.38	66.72	65.46	65.76	67.50	65.85

Clinopyroxene from Type II / Type I composite xenoliths

Clinopyroxene

pk-G-22-16					
		1	2	3	4
SiO ₂	52.44	52.38	52.11	52.18	52.40
TiO ₂	0.48	0.40	0.35	0.40	0.38
Al ₂ O ₃	5.83	5.43	5.34	5.79	5.82
Cr ₂ O ₃	0.88	0.42	0.38	0.49	0.56
FeO	4.12	4.01	4.21	3.99	4.11
MnO	0.16	0.10	0.07	0.06	0.06
MgO	15.42	15.60	15.73	15.40	15.43
CaO	19.87	19.93	20.20	20.37	20.38
Na ₂ O	1.37	1.43	1.41	1.46	1.50
K ₂ O	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd
Total	100.57	99.70	99.80	100.14	100.64
Mg# cpx	86.96	87.40	86.94	87.31	87.00
Liquid Mg#	64.72	65.60	64.68	65.42	64.79

Clinopyroxene from Type II / Type II composite xenoliths

Clinopyroxene from Type II/Type II composite xenolith

Data collected on SMU JEOL microprobe (Unpublished)

Data collected Univ Colorado Boulder (July 2017)

Data collected Univ Colorado Boulder (June 2021)

pk-G-21-7 (thin section a)					pk-G-21-8 (traverse)						
					(2)	(6)	(9)	(10)	(14)	(20)	(21)
SiO ₂	49.39	49.37	49.40	48.86	50.30	50.11	49.73	49.36	48.63	49.12	48.82
TiO ₂	1.62	1.63	1.57	1.77	1.46	1.48	1.61	1.70	1.61	1.49	1.71
Al ₂ O ₃	6.56	6.72	6.48	7.04	6.01	6.38	7.16	7.07	7.58	7.18	7.41
Cr ₂ O ₃	0.01	0.01	0.02	0.02	0.43	0.36	0.17	0.09	0.07	0.06	0.05
FeO	5.86	6.08	5.78	5.98	4.03	4.25	4.34	4.64	5.57	5.66	6.18
MnO	0.14	0.13	0.14	0.15	0.17	0.17	0.17	0.13	0.13	0.20	0.20
MgO	13.75	13.74	13.81	13.55	14.94	14.71	14.48	14.58	14.44	14.52	13.73
CaO	21.37	21.29	21.47	21.26	22.38	22.12	21.93	21.82	21.18	21.37	21.53
Na ₂ O	0.60	0.64	0.58	0.65	0.67	0.68	0.63	0.67	0.65	0.57	0.66
K ₂ O	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
CoO	0.01	0.01	0.01	0.02	nd	nd	nd	nd	nd	nd	nd
NiO	0.01	0.01	0.00	bd	nd	nd	nd	nd	nd	nd	nd
Total	99.31	99.62	99.26	99.29	100.39	100.26	100.22	100.06	99.86	100.17	100.29
Mg#	80.71	80.13	80.98	80.16	86.86	86.05	85.61	84.85	82.21	82.06	79.84
Liquid Mg#	53.50	52.58	53.93	52.63	64.50	62.92	62.06	60.63	55.96	55.70	52.13

Clinopyroxene from Type II / Type II composite xenoliths

Clinopyroxene data from Kempton (1984)

		pk-G-21-8		pk-G-21-8		
	(1)	avg host	avg vein	host	host	host
SiO ₂	48.34	49.16	49.10	51.05	51.42	51.31
TiO ₂	1.52	1.51	1.47	1.43	1.35	1.41
Al ₂ O ₃	8.75	6.79	7.23	5.26	4.93	5.18
Cr ₂ O ₃	0.06	0.48	0.11	0.40	0.37	0.41
FeO	6.08	4.37	5.57	3.79	3.69	3.66
MnO	0.19	0.12	0.13	0.12	0.12	0.10
MgO	13.80	14.57	14.04	14.84	15.06	14.96
CaO	20.95	22.29	21.89	22.12	22.19	22.11
Na ₂ O	0.71	0.72	0.61	0.67	0.65	0.68
K ₂ O	nd	nd	nd	nd	nd	nd
CoO	nd	nd	nd	0.00	bd	0.00
NiO	nd	nd	nd	0.03	0.00	bd
Total	100.40	100.01	100.15	99.71	99.78	99.82
Mg#	80.18	85.60	81.79	87.47	87.92	87.93
Liquid Mg#	52.66	62.04	55.27	65.74	66.69	66.70

Opx from Type I peridotites

Orthopyroxene in Type Iherzolites

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1984))

	pk-G-20-1	pk-G-20-2 (grain 1)										
	(2)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	avg	(1)	(2)	(3)
SiO ₂	55.46	55.25	54.75	55.34	54.66	54.99	54.60	54.84	54.92	55.14	55.00	55.23
TiO ₂	0.06	0.06	0.05	0.05	0.07	0.05	0.09	0.10	0.07	0.04	0.00	0.01
Al ₂ O ₃	3.84	5.25	5.39	5.46	5.34	5.35	5.60	5.71	5.44	5.12	5.18	5.18
Cr ₂ O ₃	0.50	0.32	0.32	0.34	0.39	0.36	0.38	0.36	0.35	0.32	0.36	0.37
FeO	5.86	6.21	6.18	5.89	6.16	5.96	5.73	6.20	6.05	6.09	6.40	6.28
MnO	0.13	0.13	0.17	0.18	0.16	0.18	0.14	0.17	0.16	0.17	0.16	0.14
MgO	33.42	32.82	32.70	32.68	32.59	32.78	31.18	32.16	32.42	32.81	32.46	32.76
CaO	0.76	0.76	0.78	0.78	0.83	0.85	2.52	1.07	1.08	0.76	0.86	0.81
Na ₂ O	0.09	0.10	0.10	0.09	0.09	0.08	0.22	0.11	0.11	0.09	0.09	0.09
Total	100.12	100.90	100.44	100.81	100.29	100.60	100.46	100.72	100.60	100.54	100.51	100.87

Opx from Type I peridotites

Orthopyrox

	pk-G-20-2 (grain 3)						pk-G-20-2					pk-G-20-7
	(4)	(5)	(6)	(7)	(8)	avg	Host (14)	Host (18)	Host (22)	Vein (6)	Vein (5)	20-7-2
SiO ₂	54.98	54.78	54.60	53.93	55.21	54.86	55.33	55.31	55.37	54.96	54.73	54.77
TiO ₂	0.04	0.05	0.05	0.12	0.05	0.05	0.06	0.08	0.07	0.06	0.05	0.12
Al ₂ O ₃	5.35	5.52	5.55	6.07	5.56	5.44	5.03	4.84	4.94	5.38	5.75	4.99
Cr ₂ O ₃	0.39	0.43	0.38	0.45	0.45	0.39	0.32	0.29	0.33	0.36	0.38	0.34
FeO	6.27	6.15	6.30	5.34	6.10	6.12	5.96	6.00	6.02	6.17	6.25	6.78
MnO	0.17	0.14	0.14	0.16	0.12	0.15	0.14	0.17	0.17	0.17	0.15	0.17
MgO	32.66	32.34	32.52	28.07	32.57	32.02	32.87	32.93	32.89	32.68	32.45	32.30
CaO	0.78	1.02	0.81	6.36	0.82	1.53	0.78	0.81	0.82	0.81	0.81	0.80
Na ₂ O	0.09	0.12	0.10	0.46	0.08	0.14	0.09	0.09	0.10	0.10	0.10	0.12
Total	100.73	100.55	100.45	100.96	100.96	100.70	100.58	100.52	100.71	100.69	100.67	100.39

Opx from Type I peridotites

Orthopyrox

	pk-G-20-9a					pk-G-20-9b		pk-G-20-10a (host			
	(2)	(6)	(10)	(13)	Vein	(7)	(4)	(12)	(15)	(16)	
SiO ₂	54.90	55.40	55.16	55.06	55.20	55.48	55.35	54.82	54.71	55.22	55.02
TiO ₂	0.10	0.12	0.11	0.09	0.11	0.11	0.10	0.11	0.12	0.09	0.09
Al ₂ O ₃	4.99	4.75	4.99	4.77	4.91	4.71	4.85	4.72	4.75	4.93	4.62
Cr ₂ O ₃	0.39	0.38	0.28	0.27	0.36	0.36	0.29	0.16	0.23	0.25	0.34
FeO	6.34	6.36	6.34	6.31	6.41	6.21	6.19	7.39	7.48	7.24	7.29
MnO	0.16	0.18	0.18	0.18	0.17	0.18	0.18	0.18	0.15	0.20	0.20
MgO	32.68	32.59	32.66	32.73	32.68	32.71	32.71	32.20	32.11	31.97	32.32
CaO	0.84	0.88	0.85	0.82	0.83	0.82	0.83	0.83	0.84	0.80	0.81
Na ₂ O	0.09	0.10	0.09	0.09	0.09	0.10	0.09	0.09	0.08	0.09	0.08
Total	100.49	100.76	100.66	100.32	100.76	100.68	100.59	100.50	100.47	100.79	100.77

Opx from Type I peridotites

Orthopyrox

	20-12a			20-12b				20-12c				pk-G
	(12)			(15)	(9)	(1)	(4)	(1)	(2)	(15)	(6)	Host (7)
SiO ₂	55.89	55.37	55.88	55.90	55.68	55.73	55.58	56.04	55.79	55.79	55.73	55.07
TiO ₂	0.03	0.03	0.02	0.03	0.01	0.02	0.02	0.02	0.03	0.01	0.01	0.13
Al ₂ O ₃	3.23	3.26	3.24	3.23	3.46	3.37	3.29	3.13	3.12	3.20	3.23	3.20
Cr ₂ O ₃	0.58	0.64	0.62	0.55	0.66	0.61	0.66	0.57	0.57	0.60	0.59	0.66
FeO	5.82	5.81	5.93	5.90	5.85	5.96	6.08	5.94	5.95	5.95	5.80	7.40
MnO	0.17	0.14	0.13	0.17	0.19	0.14	0.16	0.17	0.20	0.20	0.17	0.15
MgO	33.61	33.74	33.67	33.57	33.35	33.69	33.70	33.52	33.29	33.55	33.41	31.92
CaO	0.90	0.92	0.91	0.88	0.98	0.97	0.91	0.88	0.86	0.88	0.88	1.09
Na ₂ O	0.04	0.03	0.04	0.06	0.07	0.05	0.05	0.06	0.05	0.06	0.06	0.14
Total	100.27	99.94	100.44	100.29	100.25	100.54	100.45	100.33	99.86	100.24	99.88	99.76

Opx from Type I peridotites

Orthopyrox

	-21-6	pk-G-22-16					pk-G-23B-1		pk-G-23B-2		pk-G-
	Host										
	(10)	(12)	(13)	(14)	(15)		(9)	(10)	(13)	(14)	(6)
SiO ₂	55.06	55.18	54.91	54.54	54.70	55.34	55.75	56.04	55.21	54.93	55.6
TiO ₂	0.11	0.12	0.11	0.07	0.10	0.06	0.04	0.07	0.09	0.10	0.06
Al ₂ O ₃	3.20	3.34	3.60	3.91	4.27	3.91	3.36	3.36	4.43	4.57	4.22
Cr ₂ O ₃	0.67	0.16	0.29	0.41	0.40	0.41	0.46	0.48	0.39	0.39	0.39
FeO	7.18	9.14	8.97	9.02	8.96	8.57	5.99	6.08	6.23	6.18	6.21
MnO	0.17	0.16	0.14	0.17	0.17	0.17	0.12	0.12	0.15	0.13	0.16
MgO	32.04	31.51	31.02	31.04	30.94	31.30	33.42	33.53	32.92	32.85	33.23
CaO	1.07	0.78	0.86	0.88	0.89	0.86	0.76	0.74	0.80	0.88	0.76
Na ₂ O	0.14	0.11	0.10	0.11	0.11	0.11	0.09	0.08	0.11	0.10	0.10
Total	99.64	100.50	100.00	100.15	100.54	100.73	99.99	100.50	100.33	100.13	100.73

Opx from Type I peridotites

Orthopyrox

	23B-3	pk-G-23B-4		pk-G-23B-5		ZH1		ZH5	
	(8)	(2)	(6)			(2)	(5)	(11)	(10)
SiO ₂	55.18	54.74	55.09	55.13	54.80	55.05	54.97	55.05	55.31
TiO ₂	0.05	0.06	0.03	0.11	0.10	0.11	0.10	0.05	0.04
Al ₂ O ₃	4.23	4.74	4.54	4.51	4.45	4.34	4.20	3.61	3.76
Cr ₂ O ₃	0.33	0.48	0.42	0.54	0.54	0.54	0.40	0.51	0.49
FeO	6.60	6.06	6.15	6.42	6.51	6.02	5.90	6.23	6.45
MnO	0.12	0.17	0.17	0.13	0.16	0.19	0.16	0.18	0.17
MgO	33.17	32.70	32.91	32.74	32.64	32.91	32.79	32.75	32.84
CaO	0.77	0.84	0.83	0.83	0.80	0.79	0.82	0.83	0.83
Na ₂ O	0.10	0.12	0.12	0.11	0.11	0.09	0.10	0.12	0.11
Total	100.55	99.91	100.26	100.52	100.11	100.04	99.44	99.33	100.00

Opx exsolution from Type II cpx

Orthopyroxene in Type Iherzolites

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1984))

	pk-G-20-5				pk-G-21-2	pk-G-21-4		pk-G-23B-7			
	exsol'n	exsol'n	exsol'n	exsol'n	exsol'n	exsol'n	exsol'n	exsol'n	exsol'n	exsol'n	
	(3)	(8)	(11)	(3)		(2)	(1)	exsol'n	exsol'n	(2)	(5.1)
SiO ₂	53.23	53.00	52.31	53.04	53.32	53.18	53.39	51.79	51.89	52.52	51.84
TiO ₂	0.28	0.17	0.20	0.21	0.26	0.22	0.25	0.44	0.44	0.46	0.34
Al ₂ O ₃	3.84	4.17	4.34	4.17	3.83	4.60	4.36	6.17	6.16	6.23	5.11
Cr ₂ O ₃	0.15	0.04	0.02	0.04	0.23	0.00	0.05	0.13	0.12	0.09	0.00
FeO	14.01	13.38	13.39	13.33	13.59	13.73	13.61	12.38	12.60	12.62	14.97
MnO	0.27	0.28	0.27	0.23	0.28	0.30	0.31	0.27	0.27	0.24	0.32
MgO	28.54	27.76	28.08	28.00	28.30	27.89	27.96	27.82	28.13	28.10	26.43
CaO	0.73	0.66	0.67	0.75	0.75	0.79	0.80	1.29	1.25	1.18	0.94
Na ₂ O	0.03	0.02	0.02	0.02	0.02	0.03	0.04	0.22	0.32	0.15	0.05
Total	101.08	99.48	99.30	99.79	100.58	100.74	100.77	100.51	101.18	101.59	100.00

Opx exsolution from Type II cpx

Orthopyrox

	90-45		pk-G-29-5
	exsol'n		
	(5.2)	(5.3)	
SiO ₂	51.63	51.83	51.23
TiO ₂	0.32	0.30	0.27
Al ₂ O ₃	5.54	5.11	4.91
Cr ₂ O ₃	0.01	0.00	0.19
FeO	14.77	14.82	17.72
MnO	0.34	0.31	0.39
MgO	26.02	26.37	24.21
CaO	1.00	0.97	1.08
Na ₂ O	0.05	0.05	0.11
Total	99.68	99.76	100.11

Amphibole

Amphibole

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1984))

	pk-G-20-5	pk-G_21-4						pk-G-21-4				
		21-4	21-4	21-4	21-4	21-4	(6)	cpx replc	(1)	(6)	cpx repl	cpx repl
SiO ₂	41.24	40.64	41.40	41.23	41.58	40.98	41.29	40.64	40.79	41.39	40.79	41.39
TiO ₂	3.89	5.89	4.54	6.27	3.99	4.06	3.90	5.89	6.01	3.89	6.01	3.89
Al ₂ O ₃	14.20	13.24	13.97	13.01	15.15	15.11	15.12	13.25	13.13	15.13	13.13	15.13
Cr ₂ O ₃	0.26	0.03	0.08	0.06	0.04	0.05	0.04	0.03	0.04	0.04	0.04	0.04
FeO	8.89	7.32	7.31	6.82	8.70	8.67	8.50	7.31	7.63	8.39	7.63	8.39
MnO	0.12	0.11	0.11	0.10	0.16	0.13	0.12	0.11	0.07	0.1	0.07	0.10
MgO	14.75	15.72	15.94	16.27	14.65	14.35	14.72	15.72	15.97	14.68	15.97	14.68
CaO	11.44	11.76	11.50	11.70	11.49	11.31	11.39	11.76	11.86	11.26	11.86	11.26
Na ₂ O	3.13	2.93	3.05	2.93	3.18	3.09	3.10	2.93	2.86	3.05	2.86	3.05
K ₂ O	nd	0.15	0.16	0.15	0.14	0.26	0.28	0.15	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	97.92	97.79	98.06	98.54	99.08	98.01	98.46	97.79	98.36	97.93	98.36	97.93
Mg # amph	74.73	79.29	79.54	80.96	75.01	74.68	75.53	79.31	78.86	75.72	78.86	75.72

Amphibole

Amphibole

	pk-G-21-15	pk-G-22-1 Type II amph cpxenite				pk-G-22-2	pk-G-22-3 1				
		(1)	(2)	(3)	(1)		(1)	(5-1)	(5-2)	(5-3)	(5-4)
SiO ₂	41.18	40.44	40.27	40.52	40.34	39.83	40.52	40.55	40.74	40.58	40.72
TiO ₂	4.64	4.88	4.76	4.85	5.08	5.57	5.04	4.58	4.63	4.76	4.75
Al ₂ O ₃	15.11	14.79	14.88	14.95	14.80	14.59	14.91	14.97	14.97	14.95	14.86
Cr ₂ O ₃	0.08	0.07	0.08	0.08	0.06	0.02	0.00	0.02	0.02	0.04	0.04
FeO	10.25	9.11	9.18	9.32	9.11	9.09	9.11	9.29	9.14	8.89	8.59
MnO	0.11	0.15	0.13	0.14	0.14	0.13	0.11	0.14	0.15	0.09	0.13
MgO	12.80	13.62	13.50	13.59	13.84	13.36	13.86	13.76	13.75	13.79	13.75
CaO	10.80	10.57	10.73	10.71	10.61	10.89	10.77	10.74	10.82	10.68	10.70
Na ₂ O	2.93	2.78	2.65	2.69	2.84	2.54	2.70	2.65	2.61	2.57	2.65
K ₂ O	nd	1.64	1.58	1.54	nd	1.75	1.47	1.65	1.64	1.64	1.66
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	97.90	98.05	97.76	98.39	96.82	97.77	98.49	98.35	98.47	97.99	97.85
Mg # amph	69.00	72.71	72.39	72.22	73.03	72.37	73.06	72.53	72.84	73.44	74.05

Amphibole

Amphibole

	type II amphibole clinopyroxenite							pk-G-22-3				
	(5-5)	(5-6)	(5-10)	(5-11)	(5-12)	(5-13)	(11)	(31)	(32)	(17)	(18)	(15)
SiO ₂	40.48	41.08	40.31	40.67	40.20	40.39	40.34	40.38	40.55	40.29	40.50	41.08
TiO ₂	4.75	4.34	5.17	5.12	5.01	5.08	5.11	5.02	4.94	4.46	4.43	4.36
Al ₂ O ₃	14.83	14.28	14.77	14.72	14.79	14.95	14.70	14.88	14.87	15.18	15.16	14.41
Cr ₂ O ₃	0.00	0.00	0.04	0.00	0.06	0.00	0.03	0.01	0.00	0.00	0.00	0.00
FeO	9.09	8.95	8.83	8.68	9.05	9.12	9.07	9.02	9.09	9.04	9.00	8.94
MnO	0.15	0.11	0.11	0.10	0.11	0.12	0.11	0.10	0.11	0.09	0.11	0.12
MgO	13.93	13.99	13.80	13.69	13.71	13.67	13.65	13.52	13.51	13.61	13.49	13.78
CaO	10.71	11.82	10.85	10.80	10.92	10.82	10.80	10.81	11.09	10.74	10.72	11.36
Na ₂ O	2.65	2.53	2.74	2.72	2.66	2.70	2.64	2.69	2.77	2.59	2.61	2.44
K ₂ O	1.70	1.50	1.48	1.52	1.43	1.48	1.52	nd	nd	nd	nd	nd
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	98.29	98.60	98.10	98.02	97.94	98.33	97.97	96.43	96.93	96.00	96.02	96.49
Mg # amph	73.20	73.59	73.58	73.76	72.97	72.76	72.84	72.76	72.60	72.85	72.76	73.32

Amphibole

Amphibole

		pk-G-22-9 (Type II amph cpxenite)				pk-G-22-11 (Type II amphibole clinopyroxenite)					pk-G-2
	(16)					(1)	(5)	(5-1)			
SiO ₂	40.43	40.90	40.94	41.00	41.03	40.10	40.03	40.10	40.24	40.63	40.92
TiO ₂	4.65	5.35	5.36	5.36	5.34	5.52	5.88	6.11	5.71	5.73	5.08
Al ₂ O ₃	15.02	14.25	14.27	14.23	14.24	14.52	14.64	14.54	14.79	14.78	14.41
Cr ₂ O ₃	0.02	0.04	0.04	0.04	0.04	0.01	0.01	0.03	0.07	0.11	0.01
FeO	8.93	9.52	9.55	9.50	9.46	9.41	9.33	9.29	9.65	9.48	9.26
MnO	0.12	0.12	0.12	0.11	0.10	0.13	0.13	0.15	0.13	0.11	0.10
MgO	13.66	13.09	13.12	13.11	13.13	13.38	13.20	13.28	13.64	13.58	13.17
CaO	10.84	10.48	10.44	10.44	10.44	10.81	10.82	10.97	10.94	10.95	8.68
Na ₂ O	2.65	2.55	2.51	2.53	2.54	2.61	2.58	2.58	2.74	2.64	2.59
K ₂ O	nd	1.51	1.48	1.51	1.49	1.42	1.56	1.60	nd	nd	1.44
CoO	nd	0.00	0.03	0.01	bd	nd	nd	nd	nd	nd	0.01
NiO	nd	0.03	0.01	0.04	0.01	nd	nd	nd	nd	nd	0.01
Total	96.32	97.82	97.86	97.87	97.81	97.91	98.18	98.65	97.91	98.01	95.66
Mg # amph	73.17	71.03	71.01	71.10	71.22	71.71	71.61	71.81	71.59	71.86	71.71

Amphibole

Amphibole

	2-13 (Type II amph cpxenite)			pk-G-22-14 (Type II amph cpxenite)							
								(8)	(1)	(5)	(2)
SiO ₂	40.96	40.79	40.96	40.47	40.42	40.50	40.35	42.90	43.07	42.91	42.96
TiO ₂	5.07	5.06	5.09	5.16	5.17	5.13	5.19	2.34	2.12	2.00	2.22
Al ₂ O ₃	14.32	14.56	14.57	13.82	13.60	13.74	13.54	14.57	14.42	14.48	14.39
Cr ₂ O ₃	0.01	0.01	0.01	0.03	0.02	0.03	0.03	1.40	1.32	1.32	1.28
FeO	9.21	9.16	9.28	9.73	9.96	10.23	9.77	5.40	5.33	5.46	5.43
MnO	0.10	0.11	0.11	0.12	0.12	0.12	0.11	0.06	0.10	0.10	0.09
MgO	13.23	13.28	13.12	12.66	12.72	12.88	12.74	16.62	16.77	16.55	16.70
CaO	8.76	8.75	8.74	9.04	8.98	9.00	8.98	10.51	10.52	10.57	10.60
Na ₂ O	2.58	2.60	2.61	2.40	2.36	2.37	2.34	3.59	3.46	3.46	3.39
K ₂ O	1.44	1.45	1.43	1.58	1.65	1.64	1.63	0.44	0.68	0.69	0.79
CoO	-0.01	0.01	0.00	0.04	0.01	0.01	-0.01	nd	nd	nd	nd
NiO	-0.01	0.04	0.01	0.01	0.02	0.02	0.02	nd	nd	nd	nd
Total	95.68	95.81	95.93	95.06	95.03	95.67	94.68	97.83	97.79	97.54	97.85
Mg # amph	71.91	72.09	71.58	69.88	69.48	69.17	69.91	84.58	84.87	84.38	84.57

Amphibole

Amphibole

	pk-G-22-16 (traverse from amphiboles in lherzolite host into ampbibole vein)											
	(2)	(3)	(30)	(25)	(26)	(26)	(26)	(26)	(26)	(26)	(27)	(27)
SiO ₂	42.96	42.76	43.18	42.75	42.95	42.77	42.89	42.75	42.44	42.76	42.84	42.48
TiO ₂	2.22	2.62	2.16	2.94	2.99	3.12	3.27	3.36	3.39	3.22	3.43	3.47
Al ₂ O ₃	14.39	14.27	14.42	14.14	14.19	14.32	14.34	14.38	14.85	14.41	14.52	14.73
Cr ₂ O ₃	1.28	1.05	1.28	0.98	1.01	0.96	0.77	0.61	0.36	0.74	0.39	0.31
FeO	5.43	5.37	5.43	5.67	5.46	5.59	5.73	5.80	5.77	5.67	5.55	5.64
MnO	0.09	0.07	0.09	0.12	0.10	0.09	0.13	0.07	0.10	0.10	0.12	0.09
MgO	16.70	16.66	16.78	16.48	16.52	16.51	16.65	16.62	16.64	16.59	16.50	16.40
CaO	10.60	10.50	10.61	10.34	10.46	10.15	10.34	10.29	10.48	10.34	10.44	10.30
Na ₂ O	3.39	3.38	3.48	3.36	3.36	3.26	3.40	3.30	3.40	3.34	3.41	3.36
K ₂ O	0.79	0.86	0.68	0.97	1.03	0.98	0.99	1.00	1.00	1.00	1.05	1.07
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	97.85	97.54	98.11	97.75	98.07	97.75	98.51	98.18	98.43	98.17	98.25	97.85
Mg # amph	84.57	84.69	84.63	83.82	84.36	84.04	83.82	83.63	83.71	83.91	84.12	83.83

Amphibole

Amphibole

							pk-G-23B-3 (amphibole in Type I/Type I composite)				
	(27)	(27)	(27)	(27)	(27)	(31)	(15)	(15)	(16)	(20)	(21)
SiO ₂	42.12	42.46	42.54	42.69	42.52	42.83	42.45	42.45	42.63	43.34	43.15
TiO ₂	3.33	3.62	3.50	3.30	3.44	3.25	2.17	2.17	2.26	0.79	1.30
Al ₂ O ₃	14.82	14.97	14.99	14.70	14.78	14.64	15.32	15.32	15.36	15.45	15.35
Cr ₂ O ₃	0.13	0.04	0.00	0.00	0.14	0.04	0.77	0.77	0.81	1.41	1.05
FeO	5.86	5.82	6.02	5.88	5.79	5.83	3.78	3.78	3.74	3.57	3.82
MnO	0.08	0.11	0.09	0.13	0.10	0.09	0.06	0.06	0.07	0.09	0.06
MgO	16.53	16.40	16.36	16.48	16.44	16.61	17.33	17.33	17.27	17.65	17.52
CaO	10.50	10.34	10.29	10.13	10.33	10.23	11.04	11.04	10.91	11.02	11.05
Na ₂ O	3.30	3.32	3.32	3.43	3.35	3.39	3.53	3.53	3.55	3.12	3.27
K ₂ O	1.04	1.05	1.09	1.04	1.05	1.00	0.46	0.46	0.41	1.30	0.99
CoO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Total	97.71	98.13	98.20	97.78	97.94	97.91	96.91	96.91	97.01	97.74	97.56
Mg # amph	83.41	83.40	82.89	83.32	83.50	83.55	89.10	89.10	89.17	89.81	89.10

Amphibole

Amphibole

	pk-G-29-2	82-4-2		Megacrysts pk-G-22	
		P5-1	(2)	M2	M3
SiO ₂	41.56	42.04	41.80	40.31	39.93
TiO ₂	3.09	3.77	3.89	5.51	5.64
Al ₂ O ₃	12.99	14.32	14.58	14.50	14.60
Cr ₂ O ₃	0.10	0.29	0.09	0.06	0.02
FeO	14.24	8.92	8.45	9.69	10.34
MnO	0.23	0.12	0.11	0.11	0.13
MgO	11.50	13.83	14.19	13.16	12.69
CaO	10.59	11.55	11.50	10.78	10.84
Na ₂ O	2.62	2.48	2.60	2.69	2.57
K ₂ O	nd	1.45	1.34	1.66	1.75
CoO	nd	nd	nd	nd	nd
NiO	nd	nd	nd	nd	nd
Total	96.92	98.77	98.55	98.47	98.51
Mg # amph	59.01	73.43	74.96	70.77	68.63

Phlogopite

Mica in amphibole selvage on Type I spinel lherzolite

Data collected on SMU JEOL microprobe (Unpublished data from Kempton (1984))

	pk-G-22-16		
	(29)	(28)	
SiO ₂	37.13	39.02	42.27
TiO ₂	4.81	5.32	3.47
Al ₂ O ₃	17.01	17.36	14.95
Cr ₂ O ₃	0.04	0.34	0.04
FeO	5.89	6.07	5.82
MnO	0.06	0.04	0.08
MgO	18.40	19.52	16.17
CaO	1.22	0.04	10.39
Na ₂ O	1.47	0.78	3.35
K ₂ O	7.39	8.09	1.04
Total	93.42	96.58	97.58