

Table 1 Representative chemical composition of various minerals from the granulite (Opx + Spl and Opx + Crn represent defocused beam analyses, while Opx + Crn 'calculated*' use modal proportion and individual phase analyses).

Mineral	Opx in Opx+Spl	Opx in Opx+Spl	Opx in Opx+Crn (sub parallel lamellae)	Opx in Opx+Crn (random lamellae)	Large Crn	Large Crn	Altered xenomorphic Crn inside Spl	Subidiomorphic Crn cutting Spl	Spl in Crn	Spl in Crn	Large Spl	Opx+Spl	Opx+Spl	Opx+Spl	Opx+Spl	Opx+Crn (random lamellae)	Opx+Crn (subparallel lamellae)	Small Grt inside Opx	Small Grt inside Opx
# of analysis	66	67	77	108	70	71	84	85	27	72	73	9	29	30	81	103	Calculated*	105	106
SiO ₂	49.36	49.51	49.86	49.24	0.00	0.00	0.00	0.01	0.06	0.06	0.04	37.85	39.33	37.99	39.39	40.08	41.63	35.82	35.06
TiO ₂	0.00	0.01	0.00	0.01	0.00	0.02	0.01	0.00	0.00	0.05	0.02	0.03	0.00	0.00	0.04	0.03	0.00	0.10	0.10
Al ₂ O ₃	6.49	6.72	5.90	7.28	98.25	98.22	89.05	97.98	50.79	49.12	59.44	21.00	19.17	20.60	18.45	27.18	21.43	22.14	22.07
Cr ₂ O ₃	0.02	0.01	0.04	0.02	0.12	0.16	1.29	0.14	10.05	9.70	0.98	0.02	0.09	0.07	0.05	0.00	0.03	0.15	0.22
V ₂ O ₃										0.35	0.17								
Fe ₂ O ₃												5.10	6.35	5.46	6.59			5.15	5.01
FeO	22.10	22.21	22.14	21.82	0.51	0.50	1.52	0.59	30.77	32.22	28.33	18.80	17.87	19.00	18.02	17.57	18.49	19.16	18.56
MnO	0.13	0.12	0.11	0.11	0.05	0.01	0.00	0.02	0.04	0.06	0.00	0.11	0.14	0.06	0.12	0.08	0.09	0.12	0.07
MgO	20.84	20.79	21.17	20.63	0.01	0.01	0.04	0.00	7.07	6.46	9.17	18.01	18.55	17.96	18.16	16.56	17.68	18.09	18.09
CaO	0.03	0.02	0.03	0.01	0.00	0.01	0.00	0.00	0.28	0.00	0.00	0.03	0.01	0.01	0.02	0.02	0.03	0.04	0.03
ZnO									0.00	0.43	0.51							0.17	0.26
NiO																		0.15	0.17
Na ₂ O	0.02	0.02	0.02	0.01	0.01	0.00	0.01	0.02											
K ₂ O	0.03	0.01	0.01	0.01	0.00	0.01	0.00	0.01											
Total	99.02	99.42	99.28	99.14	98.95	98.94	91.92	98.77	99.06	98.45	98.66	101.11	101.65	101.32	100.84	101.52	99.37	101.10	99.64
O	6	6	6	6	6	6	6	6	32	32	32	12	12	12	12	12	6	12	12
Si	1.852	1.849	1.865	1.841	0.000	0.000	0.000	0.000	0.014	0.014	0.009	2.815	2.903	2.825	2.932	2.829	1.532	2.681	2.661
Ti	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.009	0.003	0.002	0.000	0.000	0.002	0.002	0.000	0.006	0.006
Al-total	0.287	0.296	0.260	0.320	3.985	3.984	3.928	3.983	13.764	13.505	15.459	1.841	1.668	1.806	1.619	2.292	0.929	1.977	1.998
Al^{IV}	0.148	0.151	0.135	0.159												0.171	0.468	0.319	0.339
Al^{VI}	0.139	0.145	0.125	0.161												2.122	0.461	1.659	1.659
Cr	0.001	0.000	0.001	0.001	0.003	0.004	0.038	0.004	1.827	1.789	0.171	0.001	0.005	0.004	0.003	0.000	0.000	0.009	0.013
V										0.065	0.030								
Fe³⁺	0.018	0.010	0.017	0.000	0.015	0.014	0.048	0.017	0.382	0.595	0.316	0.285	0.353	0.305	0.369	0.000	0.000	0.290	0.286
Fe²⁺	0.674	0.683	0.675	0.682					5.535	5.690	4.912	1.169	1.103	1.182	1.122	1.196	0.527	1.200	1.178
Mn	0.004	0.004	0.003	0.003	0.001	0.000	0.000	0.001	0.008	0.012	0.000	0.007	0.009	0.004	0.008	0.005	0.002	0.008	0.004
Mg	1.165	1.158	1.180	0.150	0.001	0.001	0.002	0.000	2.424	2.247	3.017	1.996	2.041	1.990	2.014	1.743	0.883	2.019	2.047
Ca	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.001	0.001	0.002	0.002	0.001	0.003	0.002
Zn									0.048	0.074	0.083							0.009	0.015
Ni																		0.009	0.010
Na	0.001	0.001	0.001	0.001	0.001	0.000	0.001	0.001									0.000		
K	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000									0.000		
Total	4.005	4.003	4.005	3.999	4.006	4.005	4.017	4.007	24.000	24.000	24.000	8.119	8.083	8.117	8.070	8.068	3.993	8.211	8.220
X_{Mg}	0.634	0.629	0.636	0.628					0.291	0.283	0.380	0.631	0.649	0.627	0.642	0.593	0.626	0.627	0.635
X_{Fe3+}					0.004	0.004	0.012	0.004											
Cr/(Cr+Al)									0.117	0.117	0.011								
X_{Al}	0.072	0.074	0.065																

*Reintegrated composition using modal proportions involved: 1) BSE images taken of whole grains, 2) the identification of the constituent minerals using EPMA, and 3) the transfer of the data to sketch diagrams. The image-processing software was used to calculate the pixel proportions of minerals in terms of distinct colors of each mineral in the sketch diagrams. The error was less than 5%.