

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	<i>Opx</i> in <i>Opx+Spl</i>	<i>Opx</i> in <i>Opx+Spl</i>	<i>Opx</i> in <i>Opx+Crn</i> (<i>sub</i> <i>parallel</i> <i>lamellae</i>)	<i>Opx</i> in <i>Opx+Crn</i> (<i>random</i> <i>lamellae</i>)	Large <i>Crn</i>	Large <i>Crn</i>	Altered xenomorphic <i>Crn</i> inside <i>Spl</i>	Subidiomorphic <i>Crn</i> cutting <i>Spl</i>	<i>Spl</i> in <i>Crn</i>	<i>Spl</i> in <i>Crn</i>	Large <i>Spl</i>	<i>Opx+Spl</i>	<i>Opx+Spl</i>	<i>Opx+Spl</i>	<i>Opx+Spl</i>	<i>Opx+Crn</i> (<i>random</i> <i>lamellae</i>)	<i>Opx+Crn</i> (<i>subparallel</i> <i>lamellae</i>)	Small <i>Grt</i> inside <i>Opx</i>	Small <i>Grt</i> inside <i>Opx</i>
# 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								
Fe ³⁺	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
Fe ²⁺	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%.