

Table S10 - Corundum

TAF500											
wt%	SiO <sub>2</sub>	TiO <sub>2</sub>	Cr <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	FeO	MnO	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	Σ
1	0.01	0.03	0	98.35	1.09	0	0.01	0.02	0	0	99.51
2	0.01	0.02	0	97.88	1.14	0	0.02	0.01	0	0	99.08
3	0	0.03	0	98.38	1.07	0	0	0.01	0	0	99.53
4	0.01	0.04	0	98.60	1.12	0	0	0	0.04	0	99.82
5	0.01	0.05	0	98.41	1.12	0	0.01	0.01	0	0	99.63
6	0.02	0.01	0	97.84	1.14	0	0.01	0.02	0	0	99.06
10	0.01	0.01	0	98.01	0.99	0	0	0	0.01	0	99.03
11	0	0.01	0	98.40	0.94	0	0.01	0	0	0	99.37
average	0.01	0.03		98.23	1.08		0.01	0.01	0.01		99.38
σ	0.01	0.02		0.28	0.07		0.01	0.01	0.01		0.30

SELECTED MEGACRYST												
wt %	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	Na <sub>2</sub> O	MgO	MnO	FeO	CaO	Cr <sub>2</sub> O <sub>3</sub>	Σ		
Corundum												
rim	97.58	0.13	0.05	0	0.02	0.02	1.88	0	0.06	97.87		
core	97.88	0.10	0.08	0	0	0.01	2.11	0	0.03	100.24		
rim	97.08	0.13	0	0	0	0	1.71	0	0.04	98.90		
average	97.52	0.12	0.05		0.01	0.01	1.91		0.05	99.03		
σ	0.40	0.02	0.04		0.01	0.01	0.28		0.02	1.19		
Ti-Magnetite inclusions												
3 / 1	1.80	0.01	26.12	0.07	1.67	1.38	69.37	0.02	0.21	100.65		
7 / 1	1.34	0.13	19.89	0	0.99	0.61	71.68	0	0.13	94.76		
11 / 1	1.94	0.11	15.47	0.03	1.70	0.44	74.77	0.01	0.17	94.64		
13 / 1	1.75	0.15	15.49	0	1.67	0.48	74.87	0.02	0.18	94.61		
average	1.71	0.10	19.24	0.03	1.51	0.72	72.67		0.17	96.16		
σ	0.26	0.06	5.03	0.03	0.34	0.44	2.65		0.04	2.99		
Stuck Orthopyroxene												
1 / 1	22.30	38.52	0	0.02	9.51	0.89	27.29	2.09	0.03	100.65		
5 / 1	22.54	38.84	0	0.02	9.72	0.99	27.75	2.07	0	101.93		
9 / 1	22.60	38.55	0.02	0.01	10.14	0.86	26.72	1.98	0.02	100.91		
average	22.48	38.64		0.02	9.79	0.92	27.25	2.04	0.02	101.17		
σ	0.16	0.18		0.01	0.32	0.01	0.52	0.06	0.01	0.67		
Trace elements in Corundum												
ppm	Ti	V	Cr	Mn	Co	Ni	Zn	Ga	Sr	Nb	Sn	Ta
An1	365.5	88.6	230.2	<8.6	2.8	<5.0	7.6	348.2	<0.4	<0.02	<1.3	0
An2	486.6	87.7	179.1	<9.2	7.6	<5.3	<4.8	315.1	<0.5	<0.02	<1.3	0
An3	313	87	281.1	<9.7	4.5	<5.8	<4.7	330.7	<05	<0.03	<1.3	<0.01
An4	670.8	91.3	93.6	<7.2	2.7	<4.3	5.47	305.7	<0.4	<0.03	<1.0	0
average	459	89	196		4			325				
σ	159	2	80		2			19				