

## Electron Microprobe Data

Ruff ID: **R060276** Mineral: **Diopside**

Locality: Inagli, Yakutia, Siberia, Russia

### Weight Percents

Analysis	#41	#42	#45	#46	#47	#48	#49	#50	#52	#53	#56	#57	#58	#59	#60	Average	StDev
SiO <sub>2</sub>	55.35	55.26	55.09	55.23	55.35	55.29	55.28	55.48	55.22	55.03	55.36	55.23	55.18	55.05	55.19	55.24	0.12
TiO <sub>2</sub>	0.14	0.07	0.04	0.10	0.02	0.09	0.04	0.10	0.05	0.06	0.01	0.15	0.09	0.06	0.03	0.07	0.04
Al <sub>2</sub> O <sub>3</sub>	0.21	0.23	0.24	0.23	0.25	0.22	0.23	0.21	0.26	0.22	0.21	0.22	0.21	0.23	0.22	0.23	0.01
Cr <sub>2</sub> O <sub>3</sub>	0.59	0.54	0.66	0.61	0.66	0.68	0.64	0.67	0.65	0.65	0.58	0.52	0.70	0.65	0.59	0.63	0.05
MgO	18.11	18.00	17.99	18.11	18.02	18.02	18.07	17.98	17.98	18.01	17.98	18.19	17.98	18.01	17.94	18.03	0.06
CaO	24.47	24.62	24.54	24.57	24.43	24.59	24.47	24.30	24.48	24.52	24.57	24.39	24.46	24.64	24.45	24.5	0.09
MnO	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.06	0.06	0.00	0.00	0.06	0.06	0.03	0.03
FeO	1.24	1.21	1.13	1.13	1.20	1.25	1.12	1.15	1.15	1.19	1.12	1.18	1.21	1.17	1.20	1.18	0.04
Na <sub>2</sub> O	0.44	0.49	0.47	0.46	0.49	0.48	0.46	0.49	0.47	0.47	0.47	0.46	0.48	0.47	0.48	0.47	0.01
Totals	100.63	100.43	100.17	100.43	100.42	100.62	100.31	100.38	100.33	100.21	100.37	100.35	100.31	100.35	100.17	100.36	0.13

### Cation numbers normalized to 6 Oxygens

																	ACN	StDev	NCN	CNISF*
Si	1.99	1.99	1.99	1.99	1.99	1.99	1.99	2.00	1.99	1.99	2.00	1.99	1.99	1.99	2.00	1.99	0.00	1.99	0.994	
Al	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.005	
Cr	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.00	0.02	0.02	
Mg	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.98	0.97	0.97	0.97	0.97	0.00	0.96	0.96	
Ca	0.94	0.95	0.95	0.95	0.94	0.95	0.95	0.94	0.95	0.95	0.95	0.94	0.95	0.95	0.95	0.95	0.00	0.97	0.97	
Fe	0.04	0.04	0.03	0.03	0.04	0.04	0.03	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.00	0.03	0.03	
Na	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.03	0.03	
Totals	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.00	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	0.00	4.00	4.00	

Ideal Chemistry: CaMgSi<sub>2</sub>O<sub>6</sub>

Calculated Chemistry: (Na<sub>0.03</sub>Ca<sub>0.97</sub>)(Mg<sub>0.96</sub>Fe<sub>0.03</sub>Cr<sub>0.01</sub>)(Si<sub>0.99</sub>Al<sub>0.01</sub>)<sub>2</sub>O<sub>6</sub>

minor amounts of Mn and Ti

Instrument: Cameca SX50

Sample Voltage: 15 kV

Acceleration Current: 20 nA

Beam Size: Spot

Date of Analysis: 10/06/06

ACN: Average Number of Cations

NCN: Normalized Cation Numbers =ACN\*4/4.01

StDev: Standard Deviation

CNISF=Cation Numbers in structural formulae

\*=cations normalized for each structural site and charge balanced

### Microprobe Calibration Data

Xtal	El	Line	Pk(s)	Bkg(s)	Bkg(+)	Bkg(-)	Standards
TAP	Na	Ka	20	10	600	-600	Albite-Cr
TAP	Si	Ka	20	10	600	-600	Diopside
TAP	Mg	Ka	20	10	600	-600	Diopside
TAP	Al	Ka	20	10	600	-600	Anorthite-S
PET	Ca	Ka	20	10	600	-600	Diopside
PET	Mn	Ka	20	10	600	-600	Rhodonite-791
LIF	Fe	Ka	20	10	500	-500	Fayalite
LIF	Cr	Ka	20	10	500	-500	Chromite-S
LIF	Ti	Ka	20	10	500	-500	Rutile1