

## Electron Microprobe Data

Rruff ID: **R050496** Mineral: **Diopside**

Locality: New City Quarry, Riverside, Riverside County, California, USA

### Weight Percents

Analysis	#2	#3	#5	#6	#9	#10	#11	#12	#13	#14	#15	#16	#17	#20	Average	StDev
SiO <sub>2</sub>	49.72	49.70	49.82	49.79	49.81	49.89	50.07	49.93	50.17	49.74	50.23	50.02	49.87	49.67	49.89	0.18
Al <sub>2</sub> O <sub>3</sub>	3.08	2.94	2.95	2.98	2.97	2.96	3.05	2.92	2.99	3.02	3.01	3.02	3.02	3.03	3.00	0.05
MgO	11.48	11.48	11.62	11.56	11.49	11.49	11.50	11.51	11.62	11.56	11.53	11.57	11.42	11.51	11.52	0.06
MnO	0.20	0.20	0.25	0.26	0.24	0.22	0.19	0.20	0.20	0.21	0.20	0.22	0.22	0.20	0.22	0.02
FeO	10.09	10.02	10.10	10.33	10.04	9.98	10.17	10.08	9.96	9.90	10.21	10.01	10.09	10.10	10.08	0.11
CaO	24.65	24.72	24.70	24.42	24.58	24.73	24.81	24.57	24.48	24.60	24.61	24.62	24.67	24.65	24.63	0.10
Na <sub>2</sub> O	0.09	0.06	0.10	0.09	0.10	0.10	0.07	0.09	0.06	0.08	0.08	0.09	0.12	0.08	0.09	0.02
TiO <sub>2</sub>	0.03	0.09	0.02	0.04	0.08	0.05	0.09	0.10	0.07	0.08	0.06	0.11	0.02	0.07	0.07	0.03
Totals	99.34	99.20	99.56	99.47	99.33	99.41	99.98	99.41	99.54	99.20	100.00	99.70	99.47	99.31	99.49	0.25

### Cation number normalized to 6 Oxygens

	ACN	StDev	NCN	CNISF*
Si	1.90	1.90	1.90	1.90
Al	0.14	0.13	0.13	0.13
Mg	0.65	0.65	0.66	0.66
Mn	0.01	0.01	0.01	0.01
Fe	0.32	0.32	0.33	0.32
Ca	1.01	1.01	1.01	1.01
Totals	4.03	4.03	4.03	4.03

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

Calculated Chemistry: Ca(Mg<sub>0.66</sub>Fe<sub>0.33</sub>Mn<sub>0.01</sub>)(Si<sub>0.95</sub>Al<sub>0.05</sub>)<sub>2</sub>O<sub>6</sub>

minor amounts of Na, 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\*4/4.02  
 StDev: Standard Deviation  
 CNISF=Cation Numbers in structural formulae  
 \*=cations normalized for each structural site

Microprobe Calibration Data							Standards
Xtal	El	Line	Pk(s)	Bkg(s)	Bkg(+)	Bkg(-)	
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