

Electron Microprobe Data

Ruff ID: **R060082** Mineral: **Anorthite**
Locality: Pinacate Mountains, Sonora, Mexico

Weight Percents

Analysis	#1	#2	#3	#4	#6	#7	#8	#9	#11	#12	#13	#15	#16	#18	#19	Average	StDev
SiO ₂	53.03	53.03	52.94	53.13	52.94	52.80	53.08	52.98	52.82	53.11	52.98	52.92	52.84	52.98	52.68	52.95	0.12
TiO ₂	0.06	0.10	0.05	0.08	0.06	0.12	0.07	0.05	0.10	0.09	0.02	0.12	0.18	0.09	0.09	0.09	0.04
Al ₂ O ₃	29.52	29.30	29.44	29.30	29.26	29.28	29.37	29.32	28.99	29.35	29.41	29.17	29.06	29.17	29.22	29.28	0.13
MgO	0.05	0.03	0.06	0.06	0.06	0.05	0.06	0.05	0.04	0.07	0.06	0.07	0.06	0.05	0.05	0.05	0.01
CaO	11.91	12.04	11.92	11.95	11.98	12.01	12.02	11.98	12.07	12.03	12.00	11.97	11.96	12.02	11.98	11.99	0.04
FeO	0.37	0.41	0.39	0.37	0.43	0.38	0.32	0.37	0.38	0.41	0.39	0.42	0.41	0.42	0.33	0.39	0.03
Na ₂ O	4.72	4.61	4.68	4.65	4.67	4.70	4.77	4.69	4.62	4.71	4.79	4.56	4.58	4.65	4.57	4.66	0.07
K ₂ O	0.31	0.32	0.31	0.30	0.31	0.30	0.33	0.30	0.32	0.31	0.32	0.31	0.31	0.32	0.30	0.31	0.01
Totals	99.98	99.83	99.80	99.83	99.69	99.63	100.02	99.73	99.35	100.09	99.97	99.55	99.42	99.70	99.22	99.72	0.25

Cation numbers normalized to 8 Oxygens

																ACN	StDev	NCN	CNISF*	
Si	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	2.41	0.00	2.41	2.42
Al	1.58	1.57	1.58	1.57	1.57	1.57	1.57	1.57	1.56	1.57	1.57	1.57	1.56	1.57	1.57	1.57	1.57	0.00	1.57	1.58
Ca	0.58	0.59	0.58	0.58	0.58	0.59	0.59	0.58	0.59	0.59	0.58	0.59	0.59	0.59	0.59	0.59	0.59	0.00	0.59	0.58
Na	0.42	0.41	0.41	0.41	0.41	0.42	0.42	0.41	0.41	0.41	0.42	0.40	0.41	0.41	0.41	0.41	0.41	0.01	0.41	0.40
K	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	0.02	0.00	0.02	0.02
Totals	5.00	4.99	5.00	4.99	4.99	5.00	5.00	5.00	5.00	5.00	5.01	4.99	4.99	4.99	4.99	4.99	4.99	0.01	5.00	

Ideal Chemistry: $\text{CaAl}_2\text{Si}_2\text{O}_8$

Calculated Chemistry: $(\text{Ca}_{0.58}\text{Na}_{0.40}\text{K}_{0.02})\text{Al}_{1.58}\text{Si}_{2.42}\text{O}_8$

minor amountf of Fe, Mg, Ti

Instrument: Cameca SX50
Sample Voltage: 15 kV
Acceleration Current: 20 nA
Beam Size: Spot
Date of Analysis: 06/10/06

ACN: Average Number of Cations
NCN: Normalized Cation Numbers =ACN*5/4.99
StDev: Standard Deviation
CNISF=Cation Numbers in structural formulae
*=cations normalized for each structural site

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	350	-600	Diopside
TAP	Al	Ka	20	10	600	-600	Anorthite-S
PET	K	Ka	20	10	600	-600	K-spar-OR1
PET	Ca	Ka	20	10	600	-600	Diopside
LIF	Fe	Ka	20	10	500	-500	Fayalite
LIF	Ti	Ka	20	10	500	-500	Rutile1