

676021  
Windy Craggy  
114P/13

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	49.000	49.420	46.773
Al2O3	14.600	14.725	16.424
Fe2O3	2.280	2.300	1.638
FeO	6.610	6.667	5.276
CaO	8.740	8.815	8.938
MgO	8.320	8.391	11.837
Na2O	3.640	3.671	6.736
K2O	1.130	1.140	1.376
TiO2	1.250	1.261	.897
MnO	.130	.131	.105
H2O	3.450	.000	.000
TOTAL	99.150	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	DR	AB	AN	LC	NE
CAT EQUIV	.00	.00	6.88	31.68	20.78	.00	1.20
WEIGHT %	.00	.00	6.98	30.28	21.06	.00	1.03
MINERAL	KP	AC	NS	KS	WD	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	19.13	.00
WEIGHT %	.00	.00	.00	.00	.00	19.52	.00
MINERAL	FD	FA	CS	MT	CM	HM	IL
CAT EQUIV	12.28	3.80	.00	2.46	.00	.00	1.79
WEIGHT %	10.49	4.71	.00	3.45	.00	.00	2.48
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	9.56	7.30	2.26	.00	.00	9.56	7.30	2.26	16.08
WT %	10.12	6.68	2.72	.00	.00	10.12	6.68	2.72	15.20

PROXENE COMPONENTS NORMALIZED TO 100%

CLINOPYROXENE: WO 50.00, EN 38.18, FS 11.82 (CAT %); WO 51.85, EN 34.22, FS  
 TOTAL PYROXENE: WO 50.00, EN 38.18, FS 11.82 (CAT %); WO 51.85, EN 34.22, FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 39.61 (CAT %); 41.02 (WT %)  
 AN/(AN+AB') = 38.16 CAT %  
 NORMALIZED TOTAL FELDSPAR (CATION %): AB' 54.91 OR 11.22 AN 33.88

SAMPLE 9-CAD-83-1

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 39.46 (CAT %) 40.65 (WT %)

TOTAL FEMICS = 39.458 (CAT %) 40.651 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 39.76 (CATION) 38.29 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 21.93 F= 39.82 M= 38.25 (WT %)

FE0 + 0.8998\*FE203 = 8.736 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE203+NA2O+K2O) (WT %) = 31.1028

TOTAL NA2O + K2O (WT %) = 4.811

ALBAITIC INDEX (NA2O+K2O)/AL2O3 = .4939 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 64.693 N= 26.943 K= 8.364

CATION %: C= 52.422 N= 39.508 K= 8.070

(FE0+FE203)/(FE0+FE203+MGO) = .5166 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .6320

AL2O3/(0.5\*CAO + NA2O + K2O) = .9633

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	51.600	51.750	49.137
Al2O3	14.600	14.642	16.385
Fe2O3	1.890	1.895	1.354
FeO	4.800	4.814	3.822
CaO	11.000	11.032	11.222
MgO	5.650	5.666	8.019
Na2O	4.530	4.543	8.363
K2O	.590	.592	.717
TiO2	1.200	1.203	.859
MnO	.150	.150	.121
H2O	3.700	.000	.000
TOTAL	99.710	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	3.58	36.88	18.26	.00	2.96
WEIGHT %	.00	.00	3.63	35.21	18.49	.00	2.55

MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	30.28	.00
WEIGHT %	.00	.00	.00	.00	.00	30.85	.00

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	3.30	.99	.00	2.03	.00	.00	1.72
WEIGHT %	2.81	1.22	.00	2.85	.00	.00	2.37

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

CLINOPYROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	15.14	11.64	3.49	.00	.00	15.14	11.64	3.49	4.28
WT %	16.01	10.64	4.20	.00	.00	16.01	10.64	4.20	4.04

CLINOPYROXENE COMPONENTS NORMALIZED TO 100%

CLINOPYROXENE:	WO 50.00,	EN 38.46,	FS 11.54 (CAT %);	WO 51.90,	EN 34.50,	FS
TOTAL PYROXENE:	WO 50.00,	EN 38.46,	FS 11.54 (CAT %);	WO 51.90,	EN 34.50,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 33.12 (CAT %);	34.44 (WT %)
AN/(AN+AB') = 30.40 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 65.68 OR 5.63 AN 28.69

SAMPLE 12-CAD-83-1

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM  
NCI = 38.31 (CAT %) 40.11 (WT %)

TOTAL FEMICS = 38.313 (CAT %) 40.110 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS  
DI = 43.42 (CATION) 41.40 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 29.65 F= 37.64 M= 32.71 (WT %)

FE0 + 0.8998\*FE2O3 = 6.520 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 25.0221

TOTAL NA2O + K2O (WT %) = 5.135

AGPAITIC INDEX (NA2O+K2O)/AL2O3 = .5542 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 68.238 N= 28.102 K= 3.660

CATION %: C= 55.276 N= 41.194 K= 3.530

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .5421 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .5198

AL2O3/(0.5\*CAO + NA2O + K2O) = .8071

SAMPLE 13A-CAD-83-1

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	51.100	51.926	48.921
Al2O3	16.300	16.563	18.390
Fe2O3	2.990	3.038	2.154
FeO	5.290	5.375	4.235
CaO	8.300	8.434	8.513
MgO	5.040	5.121	7.192
Na2O	3.910	3.973	7.257
K2O	1.710	1.738	2.088
TiO2	1.580	1.606	1.137
MnO	.140	.142	.114
H2O	2.050	.000	.000
TOTAL	98.410	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	10.44	36.28	22.61	.00	.00
WEIGHT %	.00	.00	10.49	34.34	22.69	.00	.00

MINERAL	KP	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	15.96	4.77
WEIGHT %	.00	.00	.00	.00	.00	16.11	4.63

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	3.41	1.01	.00	3.23	.00	.00	2.27
WEIGHT %	2.89	1.24	.00	4.50	.00	.00	3.11

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

PROXENE AND OLIVINE COMPOSITIONS, WO GROUPED WITH CPX.

	TOTAL PX			DPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
CAT %	7.98	9.83	2.92	3.68	1.09	7.98	6.15	1.83	4.43
WT %	8.36	8.90	3.47	3.33	1.30	8.36	5.57	2.17	4.13

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPIROXENE:	EN 77.12,	FS 22.88 (CAT %);	EN 71.94,	FS 28.06 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 38.56,	FS 11.44 (CAT %);	WO 51.91,	EN 34.60,	FS
TOTAL PYROXENE:	WO 38.50,	EN 47.43,	FS 14.07 (CAT %);	WO 40.33,	EN 42.93,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) =	38.39 (CAT %);	39.79 (WT %)
AN/(AN+AB')	= 38.39 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 52.33	OR 15.06 AN 32.61

SAMPLE 13A-CAD-83-1

RMATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 30.66 (CAT %) 32.48 (WT %)

TOTAL FEMICS = 30.661 (CAT %) 32.483 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 46.73 (CATION) 44.82 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 30.15 F= 42.81 M= 27.04 (WT %)

FE0 + 0.8998\*FE2O3 = 8.109 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 20.5212

TOTAL NA2O + K2O (WT %) = 5.711

ALBAITIC INDEX (NA2O+K2O)/AL2O3 = .5082 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 59.626 N= 28.089 K= 12.284

CATION %: C= 47.669 N= 40.637 K= 11.693

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .6216 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .6974

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.0298

SAMPLE 20-CAD-83-1

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	50.700	51.415	48.868
Al2O3	15.900	16.124	18.061
Fe2O3	2.210	2.241	1.603
FeO	7.070	7.170	5.698
CaO	6.280	6.369	6.485
MgO	5.990	6.074	8.605
Na2O	3.520	3.570	6.578
K2O	2.300	2.332	2.828
TiO2	1.600	1.623	1.160
MnO	.140	.142	.114
H2O	2.900	.000	.000
TOTAL	98.610	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	14.14	32.89	21.64	.00	.00
WEIGHT %	.00	.00	14.20	31.12	21.72	.00	.00

MINERAL	KF	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	8.63	10.13
WEIGHT %	.00	.00	.00	.00	.00	8.81	10.06

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	5.42	2.43	.00	2.40	.00	.00	2.32
WEIGHT %	4.59	2.98	.00	3.35	.00	.00	3.17

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

DIOPHASE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

WT %	TOTAL PX			DPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	4.31	9.98	4.47	7.00	3.13	4.31	2.98	1.33	7.85
WT %	4.52	9.04	5.31	6.34	3.73	4.52	2.70	1.59	7.57

DIOPHASE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 69.08,	FS 30.92 (CAT %);	EN 62.97,	FS 37.03 (WT %)
CLINOPYROXENE:	WO 50.00,	EN 34.54,	FS 15.46 (CAT %);	WO 51.33, EN 30.65, FS
TOTAL PYROXENE:	WO 23.00,	EN 53.19,	FS 23.81 (CAT %);	WO 23.95, EN 47.88, FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 39.69 (CAT %);	41.10 (WT %)
AN/(AN+AB') = 39.69 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 47.90 OR 20.59 AN 31.51

SAMPLE 20-CAD-83-1

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 31.33 (CAT %) 32.96 (WT %)

TOTAL FEMICS = 31.333 (CAT %) 32.961 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 47.03 (CATION) 45.32 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 27.89 F= 43.41 M= 28.70 (WT %)

FE0 + 0.8998\*FE2O3 = 9.186 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 22.2594

TOTAL NA2O + K2O (WT %) = 5.902

ALGAPAITIC INDEX (NA2O+K2O)/AL2O3 = .5208 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 51.901 N= 29.091 K= 19.008

CATION %: C= 40.810 N= 41.394 K= 17.796

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .6077 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .8072

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.1366



SAMPLE DY2725

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	56.500	58.110	54.166
Al2O3	13.000	13.370	14.688
Fe2O3	1.880	1.934	1.356
FeO	5.990	6.161	4.802
CaO	6.480	6.665	6.655
MgO	4.840	4.978	6.916
Na2O	5.760	5.924	10.706
K2O	.060	.062	.073
TiO2	.750	.771	.541
MnO	.120	.123	.097
H2O	1.850	.000	.000
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TOTAL	97.230	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	2.62	.00	.37	53.53	9.77	.00	.00
WEIGHT %	2.87	.00	.37	51.10	9.89	.00	.00

MINERAL	KP	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	18.80	11.79
WEIGHT %	.00	.00	.00	.00	.00	19.47	11.95

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	.00	.00	.00	2.03	.00	.00	1.08
WEIGHT %	.00	.00	.00	2.86	.00	.00	1.49

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

WT %	TOTAL PX			DPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	9.40	13.83	7.36	7.70	4.10	9.40	6.14	3.27	.00
WT %	9.94	12.64	8.84	7.03	4.92	9.94	5.61	3.92	.00

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 65.27,	FS 34.73 (CAT %);	EN 58.85,	FS 41.15 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 32.63,	FS 17.37 (CAT %);	WO 51.06,	EN 28.80,	FS
TOTAL PYROXENE:	WO 30.73,	EN 45.21,	FS 24.06 (CAT %);	WO 31.64,	EN 40.23,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 15.44 (CAT %);	16.22 (WT %)
AN/(AN+AB') = 15.44 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 84.08 OR .58 AN 15.35

SAMPLE DY2725

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 33.71 (CAT %) 35.77 (WT %)

CAL FEMICS = 33.710 (CAT %) 35.768 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 56.52 (CATION) 54.34 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 31.73 F= 41.88 M= 26.39 (WT %)

FE0 + 0.8998\*FE203 = 7.900 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE203+NA2O+K2O) (WT %)= 19.8768

TOTAL NA2O + K2O (WT %) = 5.986

ALUMINIC INDEX (NA2O+K2O)/AL2O3 = .7339 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 52.683 N= 46.829 K= .488

CATION %: C= 38.174 N= 61.405 K= .421

(FE0+FE203)/(FE0+FE203+MGO) = .6192 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .6097

AL2O3/(0.5\*CAO + NA2O + K2O) = .8425

SAMPLE DY2735

OXIDE	WEIGHT %	NORMALIZED	CATION %
SI02	53.300	53.172	50.042
AL2O3	14.900	14.864	16.486
FE2O3	2.010	2.005	1.420
FEO	7.500	7.482	5.888
CAO	5.710	5.696	5.743
MGO	7.790	7.771	10.901
NA2O	4.380	4.370	7.972
K2O	.890	.888	1.066
TI02	.500	.499	.353
MNO	.160	.160	.127
H2O	3.100	.000	.000
TOTAL	100.240	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	5.33	39.86	18.62	.00	.00
WEIGHT %	.00	.00	5.41	38.15	18.90	.00	.00
MINERAL	KP	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	8.08	18.09
WEIGHT %	.00	.00	.00	.00	.00	8.34	18.20
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	4.94	2.24	.00	2.13	.00	.00	.71
WEIGHT %	4.23	2.78	.00	3.00	.00	.00	.98
MINERAL	SF	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS, WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	4.04	15.22	6.91	12.44	5.65	4.04	2.78	1.26	7.18
CAT %	4.28	13.94	8.32	11.40	6.80	4.28	2.54	1.52	7.01

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 68.76,	FS 31.24 (CAT %);	EN 62.62,	FS 37.38 (WT %)
CLINOPYROXENE:	WO 50.00,	EN 34.38,	FS 15.62 (CAT %);	WO 51.31, EN 30.49, FS
TOTAL PYROXENE:	WO 15.43,	EN 58.15,	FS 26.42 (CAT %);	WO 16.13, EN 52.52, FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) =	31.84 (CAT %);	33.13 (WT %)
AN/(AN+AB')	= 31.84 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 62.47	OR 8.35 AN 29.18

SAMPLE DY2735

FORMATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 36.19 (CAT %) 37.53 (WT %)

TOTAL FEMICS = 36.188 (CAT %) 37.531 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 45.19 (CATION) 43.57 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 23.56 F= 41.61 M= 34.83 (WT %)

FE0 + 0.8998\*FE203 = 9.286 (WT %)

SOLIDIFICATION INDEX = MG0/(MG0+FE0+FE203+NA20+K20) (WT %)= 27.9813

TOTAL NA20 + K20 (WT %) = 5.257

ALGPAITIC INDEX (NA20+K20)/AL203 = .5482 (CAT %)

CAO, K20, NA20 NORMALIZED TO 100%

WEIGHT %: C= 52.004 N= 39.891 K= 8.106

CATION %: C= 38.855 N= 53.935 K= 7.211

(FE0+FE203)/(FE0+FE203+MG0) = .5497 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL203/(CAO + NA20 + K20) = .8032

AL203/(0.5\*CAO + NA20 + K20) = 1.1153

SAMPLE DY2749

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	52.200	53.517	50.424
Al2O3	16.100	16.506	18.328
Fe2O3	1.650	1.692	1.199
FeO	4.770	4.890	3.853
CaO	4.430	4.542	4.584
MgO	6.600	6.766	9.502
Na2O	4.120	4.224	7.716
K2O	2.820	2.891	3.475
TiO2	1.130	1.158	.821
MnO	.120	.123	.098
H2O	3.600	.000	.000
TOTAL	97.540	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	17.37	38.58	17.84	.00	.00
WEIGHT %	.00	.00	17.74	37.11	18.21	.00	.00
MINERAL	KF	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	4.06	8.70
WEIGHT %	.00	.00	.00	.00	.00	4.16	8.54
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	7.90	2.10	.00	1.80	.00	.00	1.64
WEIGHT %	6.79	2.62	.00	2.55	.00	.00	2.28
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	2.03	8.47	2.26	6.87	1.83	2.03	1.60	.43	10.00
WT %	2.16	7.80	2.73	6.33	2.21	2.16	1.48	.52	9.41

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 78.97,	FS 21.03 (CAT %);	EN 74.08,	FS 25.92 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 39.48,	FS 10.52 (CAT %);	WO 52.05,	EN 35.52,	FS
TOTAL PYROXENE:	WO 15.91,	EN 66.40,	FS 17.68 (CAT %);	WO 17.04,	EN 61.45,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) =	31.63 (CAT %);	32.91 (WT %)
AN/(AN+AB')	= 31.63 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 52.28	OR 23.54 AN 24.18

SAMPLE DY2749

FORMATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM  
NCI = 26.20 (CAT %) 26.94 (WT %)

TOTAL FEMICS = 26.204 (CAT %) 26.943 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS  
DI = 55.95 (CATION) 54.85 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 35.06 F= 31.60 M= 33.34 (WT %)

FE0 + 0.8998\*FE2O3 = 6.412 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %) = 24.5353

TOTAL NA2O + K2O (WT %) = 7.115

ALGAPAITIC INDEX (NA2O+K2O)/AL2O3 = .6106 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 38.962 N= 36.236 K= 24.802

CATION %: C= 29.062 N= 48.911 K= 22.027

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .4931 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .9002

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.1619

SAMPLE DY2756

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	50.100	50.714	48.298
Al2O3	17.000	17.208	19.314
Fe2O3	1.990	2.014	1.443
FeO	5.260	5.324	4.240
CaO	7.400	7.491	7.643
MgO	7.540	7.632	10.834
Na2O	3.020	3.057	5.644
K2O	1.610	1.630	1.980
TiO2	.720	.729	.522
MnO	.100	.101	.082
H2O	4.050	.000	.000
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TOTAL	98.790	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	9.90	28.22	29.22	.00	.00
WEIGHT %	.00	.00	10.04	26.97	29.63	.00	.00
MINERAL	KP	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	7.19	16.33
WEIGHT %	.00	.00	.00	.00	.00	7.32	15.98
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	4.61	1.31	.00	2.17	.00	.00	1.04
WEIGHT %	3.94	1.62	.00	3.05	.00	.00	1.44
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			DPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	3.60	15.52	4.41	12.72	3.61	3.60	2.80	.80	5.92
CAT %	3.81	14.20	5.30	11.64	4.34	3.81	2.56	.96	5.56

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 77.87,	FS 22.13 (CAT %);	EN 72.81,	FS 27.19 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 38.94,	FS 11.06 (CAT %);	WO 51.97,	EN 34.98,	FS
TOTAL PYROXENE:	WO 15.28,	EN 65.97,	FS 18.74 (CAT %);	WO 16.33,	EN 60.92,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 50.87 (CAT %);	52.34 (WT %)
AN/(AN+AB') = 50.87 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 41.91 OR 14.70 AN 43.40

SAMPLE DY2756

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 32.65 (CAT %) 33.36 (WT %)

TOTAL FEMICS = 32.655 (CAT %) 33.357 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 38.12 (CATION) 37.02 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 24.09 F= 36.68 M= 39.23 (WT %)

FE0 + 0.8998\*FE2O3 = 7.137 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %) = 31.3514

TOTAL NA2O + K2O (WT %) = 4.687

ALGPAITIC INDEX (NA2O+K2O)/AL2O3 = .3947 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 61.513 N= 25.104 K= 13.383

CATION %: C= 50.061 N= 36.971 K= 12.968

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .4902 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .8431

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.2651



SAMPLE DY2758

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	49.400	49.778	46.866
Al2O3	15.900	16.022	17.777
Fe2O3	2.330	2.348	1.663
FeO	5.090	5.129	4.038
CaO	11.000	11.084	11.180
MgO	8.010	8.071	11.326
Na2O	3.060	3.083	5.628
K2O	.600	.605	.726
TiO2	.980	.988	.699
MnO	.120	.121	.096
H2O	2.750	.000	.000
TOTAL	99.240	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	3.63	28.14	28.56	.00	.00
WEIGHT %	.00	.00	3.67	26.84	28.88	.00	.00
MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	21.87	4.85
WEIGHT %	.00	.00	.00	.00	.00	22.12	4.69
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	7.36	1.69	.00	2.49	.00	.00	1.40
WEIGHT %	6.28	2.09	.00	3.50	.00	.00	1.93
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

DIOPHASE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

WT %	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	10.94	12.84	2.95	3.94	.91	10.94	8.89	2.04	9.05
WT %	11.55	11.72	3.54	3.60	1.09	11.55	8.12	2.45	8.37

DIOPHASE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 81.31,	FS 18.69 (CAT %);	EN 76.80,	FS 23.20 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 40.65,	FS 9.35 (CAT %);	WO 52.22,	EN 36.70,	FS
TOTAL PYROXENE:	WO 40.92,	EN 48.03,	FS 11.04 (CAT %);	WO 43.09,	EN 43.71,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 50.37 (CAT %);	51.84 (WT %)
AN/(AN+AB') = 50.37 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 46.65 OR 6.02 AN 47.34

SAMPLE DY2758

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 39.67 (CAT %) 40.61 (WT %)

TOTAL FEMICS = 39.672 (CAT %) 40.606 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 31.77 (CATION) 30.51 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 19.41 F= 38.11 M= 42.48 (WT %)

FE0 + 0.8998\*FE203 = 7.242 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE203+NA2O+K2O) (WT %)= 35.2088

TOTAL NA2O + K2O (WT %) = 3.688

AGPAITIC INDEX (NA2O+K2O)/AL2O3 = .3574 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 75.034 N= 20.873 K= 4.093

CATION %: C= 63.761 N= 32.098 K= 4.141

(FE0+FE203)/(FE0+FE203+MGO) = .4809 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .6191

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.0138

SAMPLE DY2762

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	50.500	50.566	48.169
Al2O3	15.900	15.921	17.873
Fe2O3	2.110	2.113	1.514
FeO	5.400	5.407	4.307
CaO	10.800	10.814	11.036
MgO	6.100	6.108	8.672
Na2O	2.840	2.844	5.252
K2O	1.710	1.712	2.081
TiO2	1.370	1.372	.983
MnO	.140	.140	.113
H2O	3.000	.000	.000
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TOTAL	99.870	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	10.40	26.26	26.35	.00	.00
WEIGHT %	.00	.00	10.43	24.81	26.41	.00	.00

MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	23.06	5.23
WEIGHT %	.00	.00	.00	.00	.00	23.27	5.08

MINERAL	FD	FA	CS	MT	CM	HM	IL
CAT EQUIV	3.41	1.05	.00	2.27	.00	.00	1.97
WEIGHT %	2.88	1.29	.00	3.16	.00	.00	2.69

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

ROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	11.53	12.80	3.96	3.99	1.23	11.53	8.81	2.72	4.46
WT %	12.07	11.58	4.70	3.61	1.47	12.07	7.97	3.24	4.17

ROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 76.39,	FS 23.61 (CAT %);	EN 71.12,	FS 28.88 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 38.19,	FS 11.81 (CAT %);	WO 51.86,	EN 34.24,	FS
TOTAL PYROXENE:	WO 40.76,	EN 45.25,	FS 13.99 (CAT %);	WO 42.57,	EN 40.84,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 50.09 (CAT %);	51.56 (WT %)
AN/(AN+AB') = 50.09 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 41.67 OR 16.51 AN 41.82

SAMPLE DY2762

RMATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 36.99 (CAT %) 38.35 (WT %)

TOTAL FEMICS = 36.986 (CAT %) 38.354 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 36.66 (CATION) 35.24 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 25.35 F= 40.66 M= 33.99 (WT %)

FE0 + 0.8998\*FE2O3 = 7.308 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %) = 26.8604

TOTAL NA2O + K2O (WT %) = 4.556

ALGPAITIC INDEX (NA2O+K2O)/AL2O3 = .4102 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 70.358 N= 18.502 K= 11.140

CATION %: C= 60.082 N= 28.591 K= 11.327

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .5518 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .6078

AL2O3/(0.5\*CAO + NA2O + K2O) = .9730

SAMPLE DY2786

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	47.100	47.885	48.262
Al2O3	15.900	16.165	19.200
Fe2O3	2.600	2.643	2.005
FeO	11.200	11.387	9.596
CaO	5.250	5.338	5.763
MgO	3.230	3.284	4.933
Na2O	3.860	3.924	7.668
K2O	1.140	1.159	1.490
TiO2	1.180	1.200	.909
MnO	.200	.203	.174
H2O	6.700	.000	.000
TOTAL	98.360	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	7.45	38.34	25.11	.00	.00
WEIGHT %	.00	.00	7.35	35.63	24.75	.00	.00
MINERAL	KP	AC	NS	KS	WD	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	2.97	12.95
WEIGHT %	.00	.00	.00	.00	.00	3.10	13.74
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	3.23	5.14	.00	3.01	.00	.00	1.82
WEIGHT %	2.68	6.19	.00	4.11	.00	.00	2.44
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WD GROUPED WITH CPX.

WT %	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WD	EN	FS	EN	FS	WD	EN	FS	
WT %	1.48	5.57	8.87	4.99	7.95	1.48	.57	.91	8.36
WT %	1.53	4.95	10.36	4.44	9.30	1.53	.51	1.07	8.87

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPIROXENE:	EN 38.56,	FS 61.44 (CAT %);	EN 32.33,	FS 67.67 (WT %)		
CLINOPYROXENE:	WD 50.00,	EN 19.28,	FS 30.72 (CAT %);	WD 49.23,	EN 16.41,	FS
TOTAL PYROXENE:	WD 9.32,	EN 34.97,	FS 55.71 (CAT %);	WD 9.07,	EN 29.39,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 39.57 (CAT %);	40.99 (WT %)
AN/(AN+AB') = 39.57 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 54.08 OR 10.51 AN 35.41

SAMPLE DY2786

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 29.10 (CAT %) 32.27 (WT %)

TOTAL FEMICS = 29.104 (CAT %) 32.267 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 45.79 (CATION) 42.98 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 22.97 F= 62.19 M= 14.84 (WT %)

FE0 + 0.8998\*FE203 = 13.765 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE203+NA2O+K2O) (WT %)= 11.9497

TOTAL NA2O + K2O (WT %) = 5.083

ALBAITIC INDEX (NA2O+K2O)/AL2O3 = .4770 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 51.220 N= 37.659 K= 11.122

CATION %: C= 38.624 N= 51.390 K= 9.986

(FE0+FE203)/(FE0+FE203+MGO) = .8103 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .9283

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.2868

SAMPLE 41919

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	42.000	41.929	44.910
Al2O3	14.700	14.675	18.524
Fe2O3	2.240	2.236	1.802
FeO	6.840	6.828	6.116
CaO	13.100	13.078	15.007
MgO	2.650	2.646	4.223
Na2O	2.900	2.895	6.012
K2O	1.640	1.637	2.237
TiO2	.980	.978	.788
MnO	.420	.419	.380
H2O	12.700	.000	.000
TOTAL	100.170	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	11.18	7.53	25.69	.00	13.52
WEIGHT %	.00	.00	11.08	7.03	25.43	.00	11.39
MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	1.68	36.12	.00
WEIGHT %	.00	.00	.00	.00	1.73	37.50	.00
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	.00	.00	.00	2.70	.00	.00	1.58
WEIGHT %	.00	.00	.00	3.71	.00	.00	2.13
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	19.74	8.45	9.61	.00	.00	19.74	8.45	9.61	.00
CAT %	20.40	7.55	11.29	.00	.00	20.40	7.55	11.29	.00

PROXENE COMPONENTS NORMALIZED TO 100%

CLINOPYROXENE: WO 52.22, EN 22.35, FS 25.44 (CAT %); WO 52.00, EN 19.23, FS  
 TOTAL PYROXENE: WO 52.22, EN 22.35, FS 25.44 (CAT %); WO 52.00, EN 19.23, FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 77.33 (CAT %); 78.34 (WT %)

AN/(AN+AB') = 46.08 CAT %

NORMALIZED TOTAL FELDSPAR (CATION %): AB' 44.91 OR 16.71 AN 38.38

SAMPLE 41919

RELATIVE COLOUR INDEX (NCI) = DL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 40.40 (CAT %) 43.34 (WT %)

TOTAL FEMICS = 42.078 (CAT %) 45.073 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 32.23 (CATION) 29.50 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 28.29 F= 55.19 M= 16.52 (WT %)

FE0 + 0.8998\*FE203 = 8.841 (WT %)

SOLIDIFICATION INDEX = MG0/(MG0+FE0+FE203+NA20+K20) (WT %)= 12.7343

TOTAL NA20 + K20 (WT %) = 4.532

ALGPAITIC INDEX (NA20+K20)/AL203 = .4453 (CAT %)

CAO, K2O, NA20 NORMALIZED TO 100%

WEIGHT %: C= 74.263 N= 16.440 K= 9.297

CATION %: C= 64.530 N= 25.851 K= 9.619

(FE0+FE203)/(FE0+FE203+MG0) = .7741 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL203/(CAO + NA20 + K20) = .4841

AL203/(0.5\*CAO + NA20 + K20) = .7966



SAMPLE 41920 ✓

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	50.900	50.895	48.503
Al2O3	16.800	16.798	18.866
Fe2O3	2.390	2.390	1.714
FeO	6.390	6.389	5.092
CaO	11.600	11.599	11.842
MgO	6.400	6.399	9.090
Na2O	2.280	2.280	4.212
K2O	.190	.190	.231
TiO2	.450	.450	.322
MnO	.160	.160	.129
H2O	2.450	.000	.000
TOTAL	100.010	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	2.99	.00	1.15	21.06	36.06	.00	.00
WEIGHT %	3.22	.00	1.15	19.78	35.91	.00	.00
MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	18.52	17.00
WEIGHT %	.00	.00	.00	.00	.00	18.76	16.76
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	.00	.00	.00	2.57	.00	.00	.64
WEIGHT %	.00	.00	.00	3.55	.00	.00	.88
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS, WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	9.26	18.18	8.08	11.77	5.23	9.26	6.41	2.85	.00
WT %	9.63	16.34	9.55	10.58	6.18	9.63	5.76	3.37	.00

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 69.22,	FS 30.78 (CAT %);	EN 63.12,	FS 36.88 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 34.61,	FS 15.39 (CAT %);	WO 51.34,	EN 30.71,	FS
TOTAL PYROXENE:	WO 26.07,	EN 51.18,	FS 22.75 (CAT %);	WO 27.12,	EN 46.00,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 63.13 (CAT %); 64.49 (WT %)

AN/(AN+AB') = 63.13 CAT %

NORMALIZED TOTAL FELDSPAR (CATION %): AB' 36.14 OR 1.98 AN 61.88

SAMPLE 41920

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 38.74 (CAT %) 39.95 (WT %)

TOTAL FEMICS = 38.738 (CAT %) 39.945 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KF CORRECTED FOR NS,KS

DI = 25.20 (CATION) 24.14 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 14.19 F= 49.05 M= 36.76 (WT %)

FE0 + 0.8998\*FE2O3 = 8.540 (WT %)

SOLIDIFICATION INDEX = MG0/(MG0+FE0+FE2O3+NA2O+K2O) (WT %)= 31.8091

TOTAL NA2O + K2O (WT %) = 2.470

ALUMINA INDEX (NA2O+K2O)/AL2O3 = .2355 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 82.445 N= 16.205 K= 1.350

CATION %: C= 72.717 N= 25.864 K= 1.418

(FE0+FE2O3)/(FE0+FE2O3+MG0) = .5784 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .6708

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.1585

SAMPLE 41921 ✓

OXIDE	WEIGHT %	NORMALIZED	CATION %
SI02	48.300	49.422	50.254
AL2O3	15.300	15.655	18.760
FE2O3	2.250	2.302	1.761
FEO	5.490	5.618	4.776
CAO	7.130	7.296	7.948
MGO	4.080	4.175	6.327
NA2O	3.340	3.418	6.737
K2O	1.740	1.780	2.309
TIO2	1.080	1.105	.845
MNO	.320	.327	.282
H2O	8.700	.000	.000
TOTAL	97.730	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.65	.00	11.55	33.69	24.29	.00	.00
WEIGHT %	.70	.00	11.55	31.74	24.27	.00	.00

MINERAL	KF	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	12.36	13.14
WEIGHT %	.00	.00	.00	.00	.00	12.63	13.13

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	.00	.00	.00	2.64	.00	.00	1.69
WEIGHT %	.00	.00	.00	3.66	.00	.00	2.30

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	6.18	12.65	6.67	8.61	4.53	6.18	4.05	2.13	.00
CAT %	6.45	11.41	7.90	7.76	5.37	6.45	3.65	2.53	.00

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE: EN 65.50, FS 34.50 (CAT %); EN 59.09, FS 40.91 (WT %)  
 CLINOPYROXENE: WO 50.00, EN 32.75, FS 17.25 (CAT %); WO 51.07, EN 28.91, FS  
 TOTAL PYROXENE: WO 24.24, EN 49.62, FS 26.14 (CAT %); WO 25.04, EN 44.30, FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 41.89 (CAT %); 43.33 (WT %)  
 AN/(AN+AB') = 41.89 CAT %  
 NORMALIZED TOTAL FELDSPAR (CATION %): AB' 48.46 OR 16.61 AN 34.93

SAMPLE 41921

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 29.83 (CAT %) 31.73 (WT %)

TOTAL FEMICS = 29.833 (CAT %) 31.732 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 45.88 (CATION) 44.00 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 30.47 F= 45.07 M= 24.47 (WT %)

FE0 + 0.8998\*FE2O3 = 7.689 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 18.5623

TOTAL NA2O + K2O (WT %) = 5.198

ALGPAITIC INDEX (NA2O+K2O)/AL2O3 = .4822 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 58.395 N= 27.355 K= 14.251

CATION %: C= 46.767 N= 39.644 K= 13.589

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .6548 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .7522

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.1039

SAMPLE 41922 ✓

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	51.800	52.350	48.943
Al2O3	16.600	16.776	18.484
Fe2O3	2.100	2.122	1.493
FeO	3.190	3.224	2.520
CaO	12.300	12.431	12.451
MgO	6.020	6.084	8.478
Na2O	3.680	3.719	6.741
K2O	.330	.334	.398
TiO2	.580	.586	.412
MnO	.100	.101	.080
H2O	2.250	.000	.000
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TOTAL	98.950	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	1.99	33.70	28.36	.00	.00
WEIGHT %	.00	.00	2.02	32.20	28.74	.00	.00

MINERAL	KP	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	27.11	4.22
WEIGHT %	.00	.00	.00	.00	.00	27.31	4.04

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	1.32	.22	.00	2.24	.00	.00	.82
WEIGHT %	1.13	.28	.00	3.15	.00	.00	1.14

MINERAL	SP	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

TOTAL PX			DPX		CLINOPYROXENE			OLIVINE	
WO	EN	FS	EN	FS	WO	EN	FS		
WT %	13.56	15.19	2.58	3.61	.61	13.56	11.59	1.97	1.55
WT %	14.34	13.89	3.11	3.30	.74	14.34	10.59	2.37	1.41

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 85.46,	FS 14.54 (CAT %);	EN 81.73,	FS 18.27 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 42.73,	FS 7.27 (CAT %);	WO 52.53,	EN 38.80,	FS
TOTAL PYROXENE:	WO 43.26,	EN 48.49,	FS 8.25 (CAT %);	WO 45.76,	EN 44.33,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) =	45.70 (CAT %);	47.16 (WT %)
AN/(AN+AB')	= 45.70 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 52.62	OR 3.10 AN 44.28

SAMPLE 41922

EMATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 35.94 (CAT %) 37.04 (WT %)

TOTAL FEMICS = 35.943 (CAT %) 37.038 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 35.69 (CATION) 34.22 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 26.54 F= 33.62 M= 39.84 (WT %)

FE0 + 0.8998\*FE2O3 = 5.133 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 31.1433

TOTAL NA2O + K2O (WT %) = 4.053

AGPAITIC INDEX (NA2O+K2O)/AL2O3 = .3862 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 75.414 N= 22.563 K= 2.023

CATION %: C= 63.558 N= 34.411 K= 2.030

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .4677 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .5769

AL2O3/(0.5\*CAO + NA2O + K2O) = .9436

SAMPLE 41923 ✓

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	51.800	52.118	48.961
Al2O3	14.400	14.488	16.040
Fe2O3	2.050	2.063	1.458
FeO	6.670	6.711	5.272
CaO	5.690	5.725	5.762
MgO	8.820	8.874	12.425
Na2O	4.600	4.628	8.429
K2O	.500	.503	.603
TiO2	1.320	1.328	.938
MnO	.140	.141	.112
H2O	3.400	.000	.000
TOTAL	99.390	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	3.01	42.15	17.52	.00	.00
WEIGHT %	.00	.00	3.08	40.55	17.88	.00	.00

MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	9.03	13.60
WEIGHT %	.00	.00	.00	.00	.00	9.27	13.43

MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	8.18	2.45	.00	2.19	.00	.00	1.88
WEIGHT %	7.04	3.05	.00	3.10	.00	.00	2.61

MINERAL	SF	PF	RU	AP	PR	CC
CAT EQUIV	.00	.00	.00	.00	.00	.00
WEIGHT %	.00	.00	.00	.00	.00	.00

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	4.52	13.94	4.17	10.47	3.13	4.52	3.48	1.04	10.63
WT %	4.81	12.84	5.05	9.64	3.79	4.81	3.20	1.26	10.09

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 76.98,	FS 23.02 (CAT %);	EN 71.78,	FS 28.22 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 38.49,	FS 11.51 (CAT %);	WO 51.90,	EN 34.53,	FS
TOTAL PYROXENE:	WO 19.95,	EN 61.61,	FS 18.43 (CAT %);	WO 21.20,	EN 56.57,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 29.36 (CAT %);	30.60 (WT %)
AN/(AN+AB') = 29.36 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 67.24 OR 4.81 AN 27.95

SAMPLE 41923

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 37.32 (CAT %) 38.49 (WT %)

TOTAL FEMICS = 37.31WBJ 38.494 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 45.16 (CATION) 43.63 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 22.73 F= 37.95 M= 39.31 (WT %)

FE0 + 0.8998\*FE2O3 = 8.567 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %) = 31.7952

TOTAL NA2O + K2O (WT %) = 5.131

AGPAITIC INDEX (NA2O+K2O)/AL2O3 = .5631 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 52.734 N= 42.632 K= 4.634

CATION %: C= 38.947 N= 56.978 K= 4.075

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .4971 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .7803

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.0843



SAMPLE 41924

OXIDE	WEIGHT %	NORMALIZED	CATION %
SI02	53.300	53.525	50.725
AL2O3	14.600	14.662	16.375
FE2O3	1.320	1.326	.945
FE0	5.360	5.383	4.265
CAO	5.930	5.955	6.046
MGO	6.800	6.829	9.645
NA2O	5.150	5.172	9.502
K2O	1.370	1.376	1.663
TI02	1.030	1.034	.737
MNO	.120	.121	.097
H2O	4.600	.000	.000
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TOTAL	99.580	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	8.32	47.51	13.02	.00	.00
WEIGHT %	.00	.00	8.52	45.88	13.34	.00	.00
MINERAL	KF	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	13.76	1.84
WEIGHT %	.00	.00	.00	.00	.00	14.21	1.83
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	9.54	3.12	.00	1.42	.00	.00	1.47
WEIGHT %	8.24	3.90	.00	2.01	.00	.00	2.06
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			DPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	6.88	6.57	2.15	1.39	.45	6.88	5.19	1.70	12.66
CAT %	7.36	6.07	2.61	1.28	.55	7.36	4.79	2.06	12.14

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 75.37,	FS 24.63 (CAT %);	EN 69.95,	FS 30.05 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 37.68,	FS 12.32 (CAT %);	WO 51.78,	EN 33.73,	FS
TOTAL PYROXENE:	WO 44.11,	EN 42.12,	FS 13.77 (CAT %);	WO 45.88,	EN 37.86,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 21.52 (CAT %);	22.53 (WT %)
AN/(AN+AB') = 21.52 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 69.00 OR 12.08 AN 18.92

SAMPLE 41924

EMATIVE COLOUR INDEX (NCI) = QL+CPX+OPX+AC+MT+IL+HM+CM  
NCI = 31.15 (CAT %) 32.26 (WT %)

TAL FEMICS = 31.151 (CAT %) 32.256 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS  
DI = 55.82 (CATION) 54.40 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 32.82 F= 32.96 M= 34.23 (WT %)

FE0 + 0.8998\*FE203 = 6.575 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE203+NA20+K20) (WT %)= 25.6410

TOTAL NA20 + K20 (WT %) = 6.547

ALUMINATIC INDEX (NA20+K20)/AL203 = .6818 (CAT %)

CAO, K20, NA20 NORMALIZED TO 100%

WEIGHT %: C= 47.631 N= 41.365 K= 11.004

CATION %: C= 35.129 N= 55.208 K= 9.663

(FE0+FE203)/(FE0+FE203+MGO) = .4955 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL203/(CAO + NA20 + K20) = .7041

AL203/(0.5\*CAO + NA20 + K20) = .9514

SAMPLE 41925

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	49.800	50.197	47.768
Al2O3	15.100	15.220	17.069
Fe2O3	2.710	2.732	1.956
FeO	4.830	4.868	3.874
CaO	12.200	12.297	12.537
MgO	4.960	4.999	7.091
Na2O	4.450	4.485	8.275
K2O	.440	.444	.538
TiO2	1.100	1.109	.793
MnO	.120	.121	.097
H2O	3.500	.000	.000
TOTAL	99.210	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	2.69	30.91	20.64	.00	6.28
WEIGHT %	.00	.00	2.72	29.39	20.81	.00	5.39
MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	33.64	.00
WEIGHT %	.00	.00	.00	.00	.00	34.15	.00
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	1.01	.31	.00	2.93	.00	.00	1.59
WEIGHT %	.86	.39	.00	4.11	.00	.00	2.18
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	16.82	12.84	3.98	.00	.00	16.82	12.84	3.98	1.32
WT %	17.71	11.68	4.76	.00	.00	17.71	11.68	4.76	1.24

PROXENE COMPONENTS NORMALIZED TO 100%

CLINOPYROXENE: WO 50.00, EN 38.16, FS 11.84 (CAT %); WO 51.85, EN 34.20, FS  
 TOTAL PYROXENE: WO 50.00, EN 38.16, FS 11.84 (CAT %); WO 51.85, EN 34.20, FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 40.04 (CAT %); 41.46 (WT %)  
 AN/(AN+AB') = 33.28 CAT %  
 NORMALIZED TOTAL FELDSPAR (CATION %): AB' 63.94 OR 4.16 AN 31.90

SAMPLE 41925

FORMATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 39.48 (CAT %) 41.69 (WT %)

TOTAL FEMICS = 39.480 (CAT %) 41.687 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KF CORRECTED FOR NS,KS

DI = 39.88 (CATION) 37.50 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 28.57 F= 42.46 M= 28.97 (WT %)

FE0 + 0.8998\*FE2O3 = 7.326 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 22.2621

TOTAL NA2O + K2O (WT %) = 4.929

ALGAPAITIC INDEX (NA2O+K2O)/AL2O3 = .5163 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 71.387 N= 26.039 K= 2.575

CATION %: C= 58.720 N= 38.759 K= 2.522

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .6032 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .5037

AL2O3/(0.5\*CAO + NA2O + K2O) = .7995

SAMPLE 41926 ✓

OXIDE	WEIGHT %	NORMALIZED	CATION %
SI02	55.600	55.919	52.203
AL2O3	18.100	18.204	20.028
FE2O3	2.840	2.856	2.006
FE0	5.430	5.461	4.263
CAO	4.380	4.405	4.406
MGO	2.520	2.534	3.526
NA2O	7.130	7.171	12.978
K2O	.120	.121	.144
TIO2	.450	.453	.318
MNO	.160	.161	.127
H2O	2.700	.000	.000
TOTAL	99.430	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.00	.00	.72	64.89	17.26	.00	.00
WEIGHT %	.00	.00	.73	62.37	17.60	.00	.00
MINERAL	KP	AC	NS	KS	WO	CPX	OPX
CAT EQUIV	.00	.00	.00	.00	.00	3.81	4.82
WEIGHT %	.00	.00	.00	.00	.00	4.04	5.08
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	2.59	2.26	.00	3.01	.00	.00	.64
WEIGHT %	2.23	2.81	.00	4.26	.00	.00	.88
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.00	.00	.00	
WEIGHT %	.00	.00	.00	.00	.00	.00	

DIOPHASE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

	TOTAL PX			OPX		CLINOPYROXENE			OLIVINE
	WO	EN	FS	EN	FS	WO	EN	FS	
WT %	1.91	3.59	3.13	2.57	2.24	1.91	1.02	.89	4.85
WT %	2.03	3.31	3.78	2.37	2.71	2.03	.94	1.07	5.04

DIOPHASE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 53.46,	FS 46.54 (CAT %);	EN 46.65,	FS 53.35 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 26.73,	FS 23.27 (CAT %);	WO 50.24,	EN 23.21,	FS
TOTAL PYROXENE:	WO 22.09,	EN 41.65,	FS 36.26 (CAT %);	WO 22.25,	EN 36.27,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) =	21.01 (CAT %);	22.01 (WT %)
AN/(AN+AB')	= 21.01 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 78.30	OR .87 AN 20.83

SAMPLE 41926

RELATIVE COLOUR INDEX (NCI) = OL+CPX+OPX+AC+MT+IL+HM+CM

NCI = 17.13 (CAT %) 19.30 (WT %)

TOTAL FEMICS = 17.125 (CAT %) 19.298 (WT %)

DIFFERENTIATION INDEX (DI) = QU+DR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 65.61 (CATION) 63.10 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 40.83 F= 44.97 M= 14.19 (WT %)

FE0 + 0.8998\*FE2O3 = 8.031 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 9.9644

TOTAL NA2O + K2O (WT %) = 7.292

AGPAITIC INDEX (NA2O+K2O)/AL2O3 = .6552 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 37.661 N= 61.307 K= 1.032

CATION %: C= 25.136 N= 74.044 K= .820

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .7665 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .9131

AL2O3/(0.5\*CAO + NA2O + K2O) = 1.1426

SAMPLE 78614

OXIDE	WEIGHT %	NORMALIZED	CATION %
SiO2	51.000	50.822	47.974
Al2O3	14.100	14.051	15.631
Fe2O3	2.900	2.890	2.053
FeO	8.380	8.351	6.591
CaO	11.300	11.261	11.388
MgO	7.400	7.374	10.375
Na2O	2.800	2.790	5.106
K2O	.100	.100	.120
TiO2	.500	.498	.354
P2O5	.210	.209	.167
MnO	.170	.169	.135
S	.060	.060	.106
H2O	1.430	.000	.000
TOTAL	100.350	100	100

NORMS (MOLECULAR AND WEIGHT PERCENT)

MINERAL	Q	C	OR	AB	AN	LC	NE
CAT EQUIV	.31	.00	.60	25.53	26.01	.00	.00
WEIGHT %	.34	.00	.60	23.90	25.83	.00	.00
MINERAL	KP	AC	NS	KS	WO	CPX	DPX
CAT EQUIV	.00	.00	.00	.00	.00	23.63	19.52
WEIGHT %	.00	.00	.00	.00	.00	23.96	19.35
MINERAL	FO	FA	CS	MT	CM	HM	IL
CAT EQUIV	.00	.00	.00	3.08	.00	.00	.71
WEIGHT %	.00	.00	.00	4.24	.00	.00	.96
MINERAL	SP	PF	RU	AP	PR	CC	
CAT EQUIV	.00	.00	.00	.45	.16	.00	
WEIGHT %	.00	.00	.00	.49	.34	.00	

PROXENE AND OLIVINE COMPOSITIONS. WO GROUPED WITH CPX.

TOTAL PX			OPX		CLINOPYROXENE			OLIVINE	
WO	EN	FS	EN	FS	WO	EN	FS		
WT %	11.81	20.75	10.59	12.93	6.60	11.81	7.82	3.99	.00
CAT %	12.25	18.59	12.47	11.58	7.77	12.25	7.01	4.70	.00

PROXENE COMPONENTS NORMALIZED TO 100%

ORTHOPYROXENE:	EN 66.21,	FS 33.79 (CAT %);	EN 59.86,	FS 40.14 (WT %)		
CLINOPYROXENE:	WO 50.00,	EN 33.11,	FS 16.89 (CAT %);	WO 51.12,	EN 29.26,	FS
TOTAL PYROXENE:	WO 27.38,	EN 48.09,	FS 24.54 (CAT %);	WO 28.28,	EN 42.93,	FS

RELATIVE FELDSPAR RATIOS. AB' = AB+5/3NE

AN/(AN+AB) = 50.47 (CAT %);	51.94 (WT %)
AN/(AN+AB') = 50.47 CAT %	
NORMALIZED TOTAL FELDSPAR (CATION %):	AB' 48.96 OR 1.15 AN 49.89

SAMPLE 78614

OMATIVE COLOUR INDEX (NCI) = DL+CPX+DPX+AC+MT+IL+HM+CM

NCI = 46.94 (CAT %) 48.51 (WT %)

TOTAL FEMICS = 47.542 (CAT %) 49.339 (WT %)

DIFFERENTIATION INDEX (DI) = QU+OR+AB+NE+LC+KP CORRECTED FOR NS,KS

DI = 26.45 (CATION) 24.83 (WEIGHT)

THE FOLLOWING QUANTITIES ARE CALCULATED FROM NORMALIZED DATA, AFTER ANY FE MODIFICATION

A-F-M COMPONENTS: A= 13.62 F= 51.62 M= 34.76 (WT %)

FE0 + 0.8998\*FE2O3 = 10.951 (WT %)

SOLIDIFICATION INDEX = MGO/(MGO+FE0+FE2O3+NA2O+K2O) (WT %)= 30.2288

TOTAL NA2O + K2O (WT %) = 2.890

AGPAITIC INDEX (NA2O+K2O)/AL2O3 = .3344 (CAT %)

CAO, K2O, NA2O NORMALIZED TO 100%

WEIGHT %: C= 79.577 N= 19.718 K= .704

CATION %: C= 68.543 N= 30.735 K= .722

(FE0+FE2O3)/(FE0+FE2O3+MGO) = .6039 (WT %)

SHAND'S ALUMINA SATURATION INDEX (FROM MOLECULAR PROPORTIONS):

AL2O3/(CAO + NA2O + K2O) = .5582

AL2O3/(0.5\*CAO + NA2O + K2O) = .9408