



Petrology of Early Proterozoic Granitoids in the Halls Creek Mobile Zone, Northern Australia

By

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A thesis submitted in partial fulfilment of the
requirements for the degree of
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Adelaide

1996

Table A8-1. Results of Electron Microprobe Analysis

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(1996)

Petrology of the Early Proterozoic Granitoids
in the Halls Creek Mobile Zone, northern Australia

Ph.D. Thesis

The University of Adelaide

Table A8-1 Results of electron microprobe analysis

Note for a samples list

1 Unit (Rock Unit)

- TM Tickalara Metamorphics
- AM Amphibolite
- FT Fine grained tonalite
- MG Meta-gabbro
- EG Eastern Leucocratic Granite
- DU Dougalls Granitoid Suite
- OR Ord River Tonalite Suite
- WG Western Porphyritic Granite
- MD Meta-dolerite
- CG Central Leucocratic Granite
- UM Hornblendite and Mela-gabbro
- SA Sally Downs Tonalite
- ME Mafic microgranular enclaves in the Sally Downs Tonalite
- SY Syn plutonic dyke in the Sally Downs Tonalite
- SG Granite dyke in the Sally Downs Tonalite
- MA Mabel Downs Granitoid
- SO Sophie Downs Granitoid
- BR Bow River Granitoid
- KL Granitoids from the King Leopold Mobile Zone
- WV Whitewater Volcanics

2 Probe

- 733 JEOL Superprobe 733 at the University of Adelaide
- 5A JEOL JXA-5A at Melbourne University

3 Mineral Names

Numbers in mineral columns denote number of analyses

- Ol Olivine
- Px pyroxenes
- Amp Amphibole
- Mica Mica
- Gar Garnet
- Epi Epidote
- Spn Spinel
- Fel1 Feldspar (results of full analysis)
- Fel3 Feldspar (results of partial analysis, i.e., Ca, Na, and K)

Note for Data Tables

1. Mineral Names

Ol Olivine

Px pyroxenes

Amph Amphibole

Mica Mica

Bi Biotite

Gar Garnet

Epi Epidote

Spin Spinel

FELD Feldspar

Feld(3) Feldspar (results of partial analyses based on Ca, Na, and K)

2. Others

FeO Total Fe as FeO

NOOX Number of oxygens in structural formula

Ca Ca $\text{Ca}/\text{Ca}+\text{Mg}+\text{Fe}$ for amphibole and pyroxene or $\text{Ca}/\text{Ca}+\text{Na}+\text{K}$ for feldspars

Mg Na $\text{Mg}/\text{Ca}+\text{Mg}+\text{Fe}$ for amphibole and pyroxene or $\text{Na}/\text{Ca}+\text{Na}+\text{K}$ for feldspars

Fe K $\text{Fe}/\text{Ca}+\text{Mg}+\text{Fe}$ for amphibole and pyroxene or $\text{K}/\text{Ca}+\text{Na}+\text{K}$ for feldspars

Sample list

	Sample	Unit	Probe	Ol	Px	Amp	Mica	Gar	Epi	Spin	Fel1	Fel3	Total	Page
1	11110	FT	733			10	5				6		21	1
2	11203	OR	733				10	6			15		31	5
3	11301	FT	733				8				19		27	10
4	11309	UM	733	6	19	8	2				4		39	14
5	12702	DU	733		6	4	5				23		38	20
6	12703	DU	5A			2	2					5	10	26
7	13104	KI	733		2	9	4		1		18		34	28
8	20606	MD	733		8	10	3				18		39	33
9	20904	AM	733		2			1			3		6	39
10	20907	DU	733		4	6	6				9		25	40
11	21502	DU	5A			2	2					3	7	44
12	21603	AM	733		6	6					6		18	45
13	21902	DU	5A				2					4	6	48
14	22101	MG	733			5			2		4		11	49
15	22102	MG	733		2	2			3		1		8	51
16	22105	AM	733		4	2		3			5		14	53
17	30608	SO	5A									5	5	55
18	30706	SO	733				8				9		17	56
19	30802	SO	5A									3	3	59
20	31501A	SO	5A									5	5	60
21	32903A	SA	5A			2	2		1		4		9	61
22	40201	MD	733		10	5					7		22	63
23	40204	TM	733		7	5	7	5			12		36	67
24	40206	UM	733	3	3	3	1						10	73
25	40206	UM	5A	4	3	1	1						9	75
26	40306	EG	5A				3	4				7	14	77
27	40406	SA	733				3				20		23	79
28	40406	SA	5A				2		1				3	83
29	41702	EG	5A				2	3				8	13	84
30	41803	UM	5A	3	4	2	2				1	1	13	86
31	41901	SA	5A			2	2						4	88
32	42402	SA	733			2	4				16		22	89
33	42402	SA	5A			2	2		1		3		8	93
34	42706	DU	5A			7	2		1			3	7	95
35	50203B	SA	5A				2						2	96
36	50602A	ME	733			6	5		4		17		32	97
37	50602B	ME	733			3	5		5		21		38	102
38	50801	SA	733				5				19		24	108
39	50801	SA	5A				2		1		4		7	112
40	51006	MD	733		6	6					12		24	113
41	51302	OR	5A			2	2		1		2		7	117
42	51501	SY	733			7	2				8		17	118

	Sample	Unit	Probe	Ol	Px	Amp	Mica	Gar	Epi	Spin	Fel1	Fel3	Total	Page
43	51504	SY	733			10	8				16		34	121
44	51505	MD	733			4	3				8		15	126
45	51508	UM	5A		1	3						2	6	129
46	51603	EG	5A				1	3				5	9	130
47	51604	DU	733		4	1	10	6			17		38	132
48	51605	DU	5A		2	2	2				3		9	138
49	51607	EG	5A				2	2				4	8	140
50	51702	ME	733			5	4				19		28	142
51	51702	ME	5A			2	2		1		2		7	146
52	51706	SA	733			2	2				23		27	147
53	51706	SA	5A			2	2		1		5		10	151
54	51913	OR	733				5		5		22		32	153
55	51918	WG	733				8				32		40	158
56	52006	MA	5A			2	2						4	164
57	52008	DU	733		9	4	4				24		41	165
58	52008	DU	5A		2	2	2				4		10	171
59	52009	BR	733						1		18		19	173
60	52101A	CG	733				6				24		30	176
61	52103	WG	5A				2					5	7	181
62	73103	MD	733		13	5					9		27	182
63	90601	CG	5A				2		1			8	11	186
64	90807	OR	5A				2		1			6	9	188
65	91502	DU	5A		4		2					5	11	190
66	91508	BR	5A				2					5	7	192
67	91608	WV	733								8		8	193
68	92006	SO	5A				2					5	7	195
69	92404	MA	5A			2	2		1				5	196
	Total			16	121	165	190	33	27	5	520	90	1167	

Electron Microprobe Analyses (by JEOL 733)

Sample 11110

Mineral	Amph	Amph	Amph	Amph	Amph	Amph
SiO2	44.69	45.37	46.26	46.16	45.36	45.87
TiO2	1.12	1.02	1.13	1.07	1.09	0.96
Al2O3	11.26	10.45	10.83	10.51	11.05	10.94
FeO	16.58	16.88	16.40	16.20	16.27	16.29
MnO	0.34	0.40	0.40	0.44	0.28	0.31
MgO	10.60	11.05	11.25	11.60	11.44	11.48
CaO	11.23	11.72	11.33	11.41	11.86	11.71
Na2O	1.41	1.37	1.27	1.39	1.31	1.36
K2O	0.75	0.76	0.73	0.61	0.79	0.68
Cr2O3	0.00	0.10	0.05	0.08	0.00	0.12
Total	97.98	99.12	99.65	99.47	99.45	99.72

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	23.
Si	6.640	6.682	6.730	6.729	6.633	6.679
Al ^{iv}	1.360	1.318	1.270	1.271	1.367	1.321
Al ^{vi}	0.612	0.496	0.588	0.535	0.539	0.557
Ti	0.125	0.113	0.124	0.117	0.120	0.105
Fe	2.060	2.079	1.995	1.975	1.990	1.984
Mn	0.043	0.050	0.049	0.054	0.035	0.038
Hg	2.347	2.425	2.439	2.520	2.493	2.491
Ca	1.788	1.850	1.766	1.782	1.850	1.827
Na	0.406	0.391	0.358	0.393	0.371	0.384
K	0.142	0.143	0.135	0.113	0.147	0.126
Cr	0.000	0.012	0.006	0.009	0.000	0.014
Total	15.523	15.559	15.461	15.499	15.554	15.526
Hg/Hg+Fe	0.533	0.538	0.550	0.561	0.556	0.557
Ca Ca	0.289	0.291	0.285	0.284	0.293	0.290
Hg Na	0.379	0.382	0.393	0.401	0.393	0.395
Fe K	0.333	0.327	0.322	0.315	0.314	0.315

NO.OX. = Number of oxygens in structural formula

Electron Microprobe Analyses (by JEOL 733)

Sample 11110

Mineral	Amph	Amph	Amph	Amph	Bi	Bi	Bi
SiO2	45.19	46.22	45.91	45.24	38.33	37.26	38.19
TiO2	0.92	1.17	0.90	1.00	2.63	2.55	2.45
Al2O3	11.13	10.66	11.23	11.11	16.78	16.30	17.05
FeO	15.71	16.50	16.95	16.96	16.48	16.39	16.57
MnO	0.30	0.44	0.27	0.35	0.19	0.14	0.16
MgO	11.15	11.56	11.05	11.08	13.45	13.12	12.94
CaO	11.07	11.23	11.47	11.75	0.00	0.00	0.05
Na2O	1.36	1.30	1.33	1.35	0.10	0.34	0.14
K2O	0.81	0.66	0.72	0.77	8.51	9.79	9.69
Cr2O3	0.08	0.00	0.00	0.07	0.00	0.00	0.00
Total	97.72	99.74	99.83	99.68	96.47	95.89	97.24

Structural Formula

NO.OX.	23.	23.	23.	23.	22.	22.	22.
Si	6.695	6.721	6.685	6.623	5.629	5.571	5.606
Al iv	1.305	1.279	1.315	1.377	2.371	2.429	2.394
Al vi	0.639	0.549	0.613	0.541	0.534	0.445	0.557
Ti	0.103	0.128	0.099	0.110	0.290	0.287	0.270
Fe	1.947	2.007	2.064	2.077	2.024	2.050	2.034
Mn	0.038	0.054	0.033	0.043	0.024	0.018	0.020
Mg	2.462	2.505	2.398	2.418	2.944	2.924	2.831
Ca	1.757	1.750	1.790	1.843	0.000	0.000	0.008
Na	0.391	0.367	0.376	0.383	0.028	0.099	0.040
K	0.153	0.122	0.134	0.144	1.594	1.868	1.815
Cr	0.009	0.000	0.000	0.008	0.000	0.000	0.000
Total	15.498	15.482	15.507	15.562	15.439	15.688	15.575
Mg/Mg+Fe	0.558	0.555	0.537	0.538	0.593	0.588	0.582
Ca Ca	0.285	0.279	0.286	0.291	0.000	0.000	0.000
Mg Na	0.399	0.400	0.384	0.381	0.000	0.000	0.000
Fe K	0.316	0.320	0.330	0.328	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11110

Mineral	Bi	Bi	FELD	FELD	FELD	FELD	FELD
SiO2	37.69	37.95	57.76	59.22	57.35	60.52	59.36
TiO2	2.14	2.58	0.00	0.00	0.00	0.00	0.00
Al2O3	17.00	16.69	27.49	26.96	25.91	26.40	26.55
FeO	15.99	16.35	0.16	0.04	0.15	0.05	0.03
MnO	0.17	0.16	0.00	0.05	0.00	0.00	0.00
MgO	13.27	13.41	0.00	0.00	0.00	0.00	0.00
CaO	0.05	0.00	9.04	8.37	8.30	8.23	8.08
Na2O	0.10	0.13	6.76	7.15	6.50	7.06	6.96
K2O	9.67	9.62	0.08	0.07	0.08	0.05	0.05
Cr2O3	0.00	0.07	0.00	0.00	1.91	0.00	0.00
Total	96.08	96.96	101.29	101.86	100.20	102.31	101.03

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	5.592	5.587	10.237	10.404	10.301	10.556	10.487
Al iv	2.408	2.413	5.744	5.584	5.487	5.429	5.530
Al vi	0.566	0.484	0.000	0.000	0.000	0.000	0.000
Ti	0.239	0.286	0.000	0.000	0.000	0.000	0.000
Fe	1.984	2.013	0.024	0.006	0.023	0.007	0.004
Mn	0.021	0.020	0.000	0.007	0.000	0.000	0.000
Mg	2.934	2.942	0.000	0.000	0.000	0.000	0.000
Ca	0.008	0.000	1.717	1.576	1.597	1.538	1.530
Na	0.029	0.037	2.323	2.436	2.264	2.388	2.384
K	1.830	1.807	0.018	0.016	0.018	0.011	0.011
Cr	0.000	0.008	0.000	0.000	0.271	0.000	0.000
Total	15.612	15.597	20.062	20.029	19.961	19.929	19.946
Mg/Mg+Fe	0.597	0.594	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.423	0.391	0.412	0.391	0.390
Mg Na	0.000	0.000	0.572	0.605	0.584	0.606	0.607
Fe K	0.000	0.000	0.004	0.004	0.005	0.003	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11110

Mineral	FELD
SiO2	59.92
TiO2	0.00
Al2O3	26.05
FeO	0.10
MnO	0.00
MgO	0.07
CaO	7.89
Na2O	7.56
K2O	0.00
Cr2O3	0.00
Total	101.59

Structural Formula

NO.OX.	32.
Si	10.542
Al iv	5.403
Al vi	0.000
Ti	0.000
Fe	0.015
Mn	0.000
Mg	0.018
Ca	1.487
Na	2.579
K	0.000
Cr	0.000

Total 20.045

Mg/Mg+Fe 0.555

Ca Ca	0.366
Mg Na	0.634
Fe K	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11203

Mineral	B1	B1	B1	B1	B1	B1	B1
SiO2	35.87	36.05	35.90	35.66	35.18	35.67	35.41
TiO2	1.33	2.76	2.99	3.10	2.58	2.62	2.07
Al2O3	18.57	18.16	17.70	17.26	17.45	17.77	17.98
FeO	21.82	22.32	21.36	22.02	22.92	22.40	22.48
MnO	0.00	0.10	0.16	0.14	0.00	0.10	0.09
HgO	8.42	7.56	7.96	7.69	7.41	7.61	7.79
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na2O	0.12	0.10	0.00	0.00	0.00	0.07	0.00
K2O	8.91	9.27	9.04	9.09	8.83	9.00	9.06
Cr2O3	0.00	0.00	0.00	0.00	0.05	0.00	0.00
Total	95.04	96.32	95.11	94.96	94.42	95.24	94.88

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	22.	22.
Si	5.512	5.493	5.514	5.513	5.489	5.500	5.486
Al iv	2.488	2.507	2.486	2.487	2.511	2.500	2.514
Al vi	0.876	0.755	0.720	0.659	0.699	0.731	0.770
Ti	0.154	0.316	0.345	0.360	0.303	0.304	0.241
Fe	2.804	2.844	2.744	2.847	2.991	2.889	2.913
Mn	0.000	0.013	0.021	0.018	0.000	0.013	0.012
Hg	1.928	1.717	1.822	1.772	1.723	1.749	1.799
Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Na	0.036	0.030	0.000	0.000	0.000	0.021	0.000
K	1.747	1.802	1.772	1.793	1.758	1.771	1.791
Cr	0.000	0.000	0.000	0.000	0.006	0.000	0.000
Total	15.544	15.476	15.423	15.450	15.479	15.476	15.526
Hg/Hg+Fe	0.407	0.376	0.399	0.384	0.366	0.377	0.382
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11203

Mineral	Bi	Bi	Bi	Gar	Gar	Gar	Gar
SiO2	35.41	35.88	35.56	37.46	37.47	37.45	37.52
TiO2	1.84	2.05	2.97	0.00	0.00	0.00	0.00
Al2O3	18.06	18.33	17.26	21.11	20.94	21.46	21.38
FeO	22.52	21.86	22.34	33.82	34.48	34.53	34.67
MnO	0.00	0.09	0.16	4.14	3.84	4.47	4.55
MgO	7.92	8.15	7.76	1.92	1.80	1.57	1.64
CaO	0.00	0.00	0.00	1.78	1.90	1.87	1.85
Na2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K2O	9.00	8.78	8.98	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	94.75	95.14	95.03	100.23	100.43	101.35	101.61

Structural Formula

NO.OX.	22.	22.	22.	12.	12.	12.	12.
Si	5.490	5.506	5.501	3.021	3.022	2.999	2.999
Al ^{iv}	2.510	2.494	2.499	0.000	0.000	0.000	0.000
Al ^{vi}	0.791	0.822	0.648	2.007	1.991	2.026	2.015
Ti	0.215	0.237	0.346	0.000	0.000	0.000	0.000
Fe	2.920	2.805	2.890	2.281	2.326	2.312	2.318
Mn	0.000	0.012	0.021	0.283	0.262	0.303	0.308
Mg	1.830	1.864	1.789	0.231	0.216	0.187	0.195
Ca	0.000	0.000	0.000	0.154	0.164	0.160	0.158
Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K	1.780	1.719	1.772	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.535	15.459	15.466	7.976	7.982	7.988	7.993
Mg/Mg+Fe	0.385	0.399	0.382	0.092	0.085	0.075	0.078
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11203

Mineral	Gar	Gar	FELD	FELD	FELD	FELD	FELD
SiO2	37.73	38.28	60.62	62.46	61.69	61.86	62.07
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	21.12	21.18	24.00	24.20	24.65	24.77	24.22
FeO	33.84	32.88	0.03	0.00	0.00	0.05	0.03
MnO	2.65	2.83	0.00	0.06	0.00	0.00	0.00
HgO	2.89	3.24	0.00	0.00	0.00	0.00	0.00
CaO	1.95	1.90	6.02	5.61	6.22	6.07	5.90
Na2O	0.00	0.00	7.98	7.89	8.03	7.77	8.17
K2O	0.00	0.00	0.16	0.14	0.10	0.41	0.15
Cr2O3	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.25	100.31	98.83	100.36	100.69	100.93	100.54

Structural Formula

NO.OX.	12.	12.	32.	32.	32.	32.	32.
Si	3.022	3.047	10.897	11.011	10.877	10.885	10.953
Al _{iv}	0.000	0.000	5.086	5.030	5.124	5.138	5.039
Al _{vi}	1.994	1.987	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	2.267	2.189	0.005	0.000	0.000	0.007	0.004
Mn	0.180	0.191	0.000	0.009	0.000	0.000	0.000
Hg	0.345	0.384	0.000	0.000	0.000	0.000	0.000
Ca	0.167	0.162	1.160	1.060	1.175	1.144	1.116
Na	0.000	0.000	2.782	2.697	2.745	2.651	2.796
K	0.000	0.000	0.041	0.031	0.022	0.092	0.034
Cr	0.004	0.000	0.000	0.000	0.000	0.000	0.000
Total	7.979	7.960	19.971	19.838	19.944	19.918	19.942
Hg/Mg+Fe	0.132	0.149	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.291	0.280	0.298	0.294	0.283
Hg Na	0.000	0.000	0.698	0.712	0.696	0.682	0.709
Fe K	0.000	0.000	0.010	0.008	0.006	0.024	0.009

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11203

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	65.12	63.26	62.99	63.07	61.66	62.10	62.63
TiO2	0.05	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	18.59	23.86	23.45	23.55	24.33	24.00	23.87
FeO	0.00	0.00	0.02	0.06	0.00	0.00	0.02
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	5.20	5.46	5.05	6.14	5.78	5.87
Na2O	0.67	8.46	8.38	8.40	7.91	8.41	8.44
K2O	13.92	0.23	0.16	0.55	0.37	0.18	0.13
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	98.35	101.01	100.46	100.68	100.41	100.47	100.96

Structural formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	12.065	11.084	11.103	11.105	10.912	10.973	11.009
Al iv	4.060	4.929	4.873	4.888	5.076	4.999	4.947
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.003	0.009	0.000	0.000	0.003
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.976	1.031	0.953	1.164	1.094	1.106
Na	0.241	2.874	2.864	2.868	2.714	2.881	2.877
K	3.290	0.051	0.036	0.124	0.084	0.041	0.029
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.663	19.914	19.910	19.946	19.949	19.988	19.970
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.250	0.262	0.242	0.294	0.272	0.276
Hg Na	0.068	0.737	0.729	0.727	0.685	0.717	0.717
Fe K	0.932	0.013	0.009	0.031	0.021	0.010	0.007

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11203

Mineral	FELD	FELD	FELD
SiO2	65.13	62.88	62.25
TiO2	0.00	0.00	0.00
Al2O3	18.37	24.13	24.29
FeO	0.03	0.01	0.00
MnO	0.00	0.00	0.00
HgO	0.00	0.00	0.00
CaO	0.00	5.64	5.75
Na2O	0.45	8.23	7.99
K2O	15.05	0.15	0.15
Cr2O3	0.00	0.00	0.09
Total	99.03	101.04	100.52

Structural Formula

NO.OX.	32.	32.	32.
Si	12.061	11.022	10.971
Al iv	4.010	4.986	5.047
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.005	0.001	0.000
Mn	0.000	0.000	0.000
Hg	0.000	0.000	0.000
Ca	0.000	1.059	1.086
Na	0.162	2.797	2.731
K	3.556	0.034	0.034
Cr	0.000	0.000	0.013
Total	19.793	19.900	19.881
Hg/Hg+Fe	0.000	0.000	0.000
Ca Ca	0.000	0.272	0.282
Hg Na	0.043	0.719	0.709
Fe K	0.957	0.009	0.009

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11301

Mineral	B1	B1	B1	B1	B1	B1	B1
SiO2	37.91	37.58	36.80	37.82	36.95	37.70	37.27
TiO2	3.13	3.11	2.93	3.12	2.68	3.15	2.97
Al2O3	16.27	16.08	16.26	16.41	17.10	15.62	16.50
FeO	19.76	20.38	20.63	20.02	19.53	20.58	20.72
MnO	0.18	0.13	0.16	0.14	0.16	0.22	0.09
HgO	10.09	10.18	10.13	10.18	10.09	10.61	10.26
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na2O	0.06	0.00	0.06	0.07	0.06	0.00	0.06
K2O	9.77	9.99	10.03	9.78	9.79	9.72	9.49
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.17	97.45	97.00	97.54	96.36	97.60	97.36

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	22.	22.
Si	5.662	5.625	5.556	5.634	5.569	5.636	5.578
Al iv	2.338	2.375	2.444	2.366	2.431	2.364	2.422
Al vi	0.526	0.463	0.451	0.515	0.607	0.388	0.489
Ti	0.352	0.350	0.333	0.350	0.304	0.354	0.334
Fe	2.468	2.551	2.605	2.494	2.462	2.573	2.594
Mn	0.023	0.016	0.020	0.018	0.020	0.028	0.011
Hg	2.246	2.271	2.280	2.260	2.266	2.364	2.289
Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Na	0.017	0.000	0.018	0.020	0.018	0.000	0.017
K	1.862	1.908	1.932	1.859	1.882	1.854	1.812
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.494	15.560	15.638	15.515	15.558	15.561	15.547
Hg/Mg+Fe	0.476	0.471	0.467	0.475	0.479	0.479	0.469
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11301

Mineral	Bi	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	37.64	57.13	56.87	58.57	57.69	59.54	60.51
TiO2	3.04	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	16.09	27.23	27.85	26.56	26.58	25.93	25.62
FeO	20.02	0.14	0.08	0.02	0.22	0.08	0.22
MnO	0.21	0.06	0.00	0.00	0.00	0.00	0.00
HgO	10.51	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	8.98	9.81	7.75	7.83	8.11	7.90
Na2O	0.13	6.75	6.29	7.64	7.70	7.18	7.06
K2O	9.52	0.15	0.08	0.24	0.28	0.25	0.27
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.16	100.34	100.98	100.78	100.30	101.09	101.58

Structural Formula

NO.OX.	22.	32.	32.	32.	32.	32.	32.
Si	5.630	10.228	10.126	10.413	10.336	10.537	10.640
Al _{iv}	2.370	5.747	5.846	5.567	5.614	5.410	5.311
Al _{vi}	0.467	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.342	0.000	0.000	0.000	0.000	0.000	0.000
Fe	2.504	0.021	0.012	0.003	0.033	0.012	0.032
Mn	0.027	0.009	0.000	0.000	0.000	0.000	0.000
Hg	2.343	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	1.704	1.872	1.476	1.503	1.538	1.488
Na	0.038	2.343	2.172	2.634	2.675	2.464	2.407
K	1.817	0.034	0.018	0.054	0.064	0.056	0.061
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.537	20.087	20.046	20.148	20.226	20.018	19.939
Hg/Hg+Fe	0.483	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.417	0.461	0.355	0.354	0.379	0.376
Hg Na	0.000	0.574	0.535	0.632	0.631	0.607	0.608
Fe K	0.000	0.008	0.004	0.013	0.015	0.014	0.015

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11301

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.98	59.03	61.19	61.43	60.11	59.35	58.83
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	25.91	26.59	25.56	24.64	25.26	26.54	26.34
FeO	0.19	0.00	0.00	0.07	0.04	0.07	0.03
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.35	7.39	7.43	7.66	8.59	8.51	9.67
Na2O	6.90	7.91	7.35	7.25	6.80	7.26	6.20
K2O	0.08	0.12	0.14	0.14	0.13	0.09	0.08
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.41	101.04	101.67	101.19	100.93	101.82	101.15

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.568	10.451	10.714	10.812	10.639	10.441	10.419
Al _{iv}	5.382	5.550	5.276	5.113	5.271	5.504	5.499
Al _{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.028	0.000	0.000	0.010	0.006	0.010	0.004
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.576	1.402	1.394	1.445	1.629	1.604	1.035
Na	2.357	2.715	2.495	2.474	2.334	2.476	2.129
K	0.018	0.027	0.031	0.031	0.029	0.020	0.018
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.929	20.145	19.911	19.885	19.907	20.056	19.905
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.399	0.338	0.356	0.366	0.408	0.391	0.461
Hg Na	0.597	0.655	0.636	0.626	0.585	0.604	0.535
Fe K	0.005	0.007	0.008	0.008	0.007	0.005	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11301

Mineral	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.46	59.30	59.78	58.47	60.01	59.97
TiO2	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	24.76	26.68	25.41	25.95	25.36	25.46
FeO	0.02	0.03	0.03	0.14	0.07	0.06
MnO	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.03	9.06	8.82	9.22	8.49	8.53
Na2O	7.07	6.60	6.82	6.14	7.23	7.02
K2O	0.10	0.10	0.08	0.29	0.13	0.08
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.44	101.77	100.94	100.21	101.29	101.12

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.
Si	10.734	10.428	10.590	10.455	10.603	10.602
Al iv	5.182	5.531	5.307	5.470	5.282	5.306
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.003	0.004	0.004	0.021	0.010	0.009
Mn	0.000*	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.528	1.707	1.674	1.766	1.607	1.616
Na	2.434	2.250	2.343	2.129	2.477	2.406
K	0.023	0.022	0.018	0.066	0.029	0.018
Cr	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.903	19.943	19.937	19.907	20.009	19.957
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.383	0.429	0.415	0.446	0.391	0.400
Hg Na	0.611	0.565	0.581	0.537	0.602	0.596
Fe K	0.006	0.006	0.004	0.017	0.007	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11309

Mineral	01	01	01	01	01	01	Px
SiO2	39.06	38.92	38.61	39.20	38.95	39.49	55.80
TiO2	0.00	0.00	0.05	0.00	0.00	0.00	0.08
Al2O3	0.00	0.00	0.00	0.00	0.00	0.01	1.09
FeO	21.45	21.06	21.41	21.82	21.93	22.19	13.77
MnO	0.25	0.22	0.30	0.19	0.30	0.29	0.40
MgO	36.90	38.60	38.96	39.28	39.18	39.65	28.78
CaO	0.00	0.00	0.00	0.00	0.01	0.00	0.32
Na2O	0.01	0.00	0.00	0.02	0.02	0.00	0.00
K2O	0.02	0.00	0.00	0.00	0.00	0.20	0.03
Cr2O3	0.06	0.01	0.00	0.02	0.00	0.00	0.08
Total	99.75	98.81	99.33	100.53	100.39	101.83	100.35

Structural Formula

NO.OX.	4.	4.	4.	4.	4.	4.	6.
Si	1.012	1.016	1.006	1.009	1.006	1.006	1.983
Al iv	0.000	0.000	0.000	0.000	0.000	0.000	0.017
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.028
Ti	0.000	0.000	0.001	0.000	0.000	0.000	0.002
Fe	0.465	0.460	0.467	0.470	0.474	0.473	0.409
Mn	0.005	0.005	0.007	0.004	0.007	0.008	0.012
Mg	1.503	1.502	1.513	1.507	1.508	1.505	1.524
Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.012
Na	0.001	0.000	0.000	0.001	0.001	0.000	0.000
K	0.000	0.000	0.000	0.000	0.000	0.007	0.001
Cr	0.001	0.000	0.000	0.000	0.000	0.000	0.002
Total	2.988	2.984	2.993	2.991	2.995	2.997	3.992
Mg/Mg+Fe	0.764	0.766	0.764	0.762	0.761	0.761	0.788
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.006
Mg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.783
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.210

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11309

Mineral	Px	Px	Px	Px	Px	Px	Px
SiO2	56.39	52.30	53.38	53.76	54.41	52.41	52.11
TiO2	0.00	0.59	0.33	0.29	0.08	0.20	0.39
Al2O3	1.06	3.09	2.40	1.93	1.92	1.92	2.72
FeO	13.11	5.58	5.27	4.88	14.02	4.71	5.48
MnO	0.21	0.09	0.15	0.10	0.29	0.10	0.04
MgO	28.61	15.67	15.12	15.82	26.82	15.36	15.49
CaO	0.33	22.26	22.98	22.22	1.36	23.12	21.78
Na2O	0.01	0.50	0.26	0.25	0.04	0.22	0.35
K2O	0.00	0.06	0.00	0.02	0.00	0.00	0.01
Cr2O3	0.09	0.25	0.26	0.18	0.07	0.20	0.20
Total	99.81	100.39	100.15	99.45	99.01	98.24	98.57

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	6.
Si	2.003	1.917	1.956	1.974	1.968	1.957	1.939
Al iv	0.000	0.083	0.044	0.026	0.032	0.043	0.061
Al vi	0.044	0.050	0.060	0.058	0.050	0.042	0.058
Ti	0.000	0.016	0.009	0.008	0.002	0.006	0.011
Fe	0.389	0.171	0.161	0.150	0.424	0.147	0.171
Mn	0.006	0.003	0.005	0.003	0.009	0.003	0.001
Mg	1.515	0.856	0.826	0.866	1.446	0.855	0.859
Ca	0.013	0.874	0.902	0.874	0.053	0.925	0.868
Na	0.000	0.036	0.018	0.018	0.003	0.016	0.025
K	0.000	0.003	0.000	0.000	0.000	0.000	0.000
Cr	0.003	0.007	0.008	0.005	0.002	0.006	0.006
Total	3.974	4.016	3.989	3.983	3.989	4.000	4.000
Mg/Mg+Fe	0.795	0.833	0.836	0.852	0.773	0.853	0.834
Ca Ca	0.007	0.460	0.478	0.463	0.027	0.480	0.458
Mg Na	0.790	0.450	0.437	0.458	0.752	0.444	0.453
Fe K	0.203	0.090	0.085	0.079	0.221	0.076	0.090

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11309

Mineral	Px	Px	Px	Px	Px	Px	Px
SiO2	54.31	53.35	53.07	53.72	53.40	52.70	52.87
TiO2	0.07	0.06	0.23	0.09	0.05	0.42	0.29
Al2O3	1.01	2.73	1.55	2.01	2.97	2.79	1.91
FeO	5.09	15.84	4.95	14.16	14.76	4.88	5.15
MnO	0.03	0.25	0.12	0.29	0.31	0.09	0.17
HgO	15.67	26.14	15.33	27.00	26.86	15.32	15.61
CaO	24.22	0.79	23.64	1.20	0.35	22.39	23.88
Na2O	0.17	0.02	0.21	0.02	0.01	0.35	0.24
K2O	0.02	0.00	0.00	0.02	0.00	0.00	0.02
Cr2O3	0.09	0.01	0.17	0.08	0.18	0.37	0.37
Total	100.68	99.19	99.27	98.59	98.89	99.31	100.51

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	6.
Si	1.982	1.941	1.965	1.955	1.938	1.943	1.940
Al iv	0.018	0.059	0.035	0.045	0.062	0.057	0.060
Al vi	0.026	0.058	0.033	0.041	0.065	0.064	0.022
Ti	0.002	0.002	0.006	0.002	0.001	0.012	0.008
Fe	0.155	0.482	0.153	0.431	0.498	0.150	0.158
Mn	0.000	0.008	0.004	0.009	0.010	0.003	0.005
Hg	0.852	1.417	0.846	1.464	1.452	0.842	0.854
Ca	0.947	0.031	0.938	0.047	0.014	0.885	0.939
Na	0.012	0.001	0.015	0.001	0.000	0.025	0.017
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.003	0.000	0.005	0.002	0.005	0.011	0.011
Total	3.999	3.999	4.000	3.999	3.995	3.992	4.015
Hg/Hg+Fe	0.846	0.746	0.847	0.773	0.764	0.848	0.844
Ca Ca	0.485	0.016	0.484	0.024	0.007	0.471	0.481
Hg Na	0.436	0.734	0.437	0.754	0.759	0.449	0.438
Fe K	0.079	0.250	0.079	0.222	0.234	0.080	0.081

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11309

Mineral	Px	Px	Px	Px	Amph	Amph	Amph
SiO2	55.57	54.26	55.59	50.99	45.20	43.47	43.65
TiO2	0.14	0.07	0.02	0.74	1.08	1.50	1.61
Al2O3	2.51	1.37	2.10	6.18	11.61	12.51	12.45
FeO	14.33	5.46	14.95	7.24	7.55	8.41	8.27
MnO	0.34	0.15	0.26	0.09	0.07	0.09	0.06
MgO	27.64	15.66	27.16	16.21	16.17	15.49	15.06
CaO	1.18	23.30	0.37	17.56	12.15	11.72	11.98
Na2O	0.00	0.26	0.00	0.98	1.96	2.22	2.12
K2O	0.00	0.00	0.00	0.33	0.71	0.98	0.75
Cr2O3	0.01	0.08	0.03	0.29	0.17	0.13	0.08
Total	101.72	100.61	100.48	100.61	96.67	96.52	96.03

Structural Formula

NO.OX.	6.	6.	6.	6.	23.	23.	23.
Si	1.955	1.980	1.979	1.858	6.555	6.368	6.410
Al ^{iv}	0.045	0.020	0.021	0.142	1.445	1.632	1.590
Al ^{vi}	0.059	0.039	0.067	0.124	0.540	0.529	0.566
Ti	0.004	0.002	0.001	0.020	0.118	0.165	0.178
Fe	0.422	0.167	0.445	0.221	0.916	1.030	1.016
Mn	0.010	0.005	0.008	0.003	0.009	0.011	0.007
Mg	1.449	0.852	1.441	0.880	3.495	3.382	3.296
Ca	0.044	0.911	0.014	0.686	1.888	1.840	1.885
Na	0.000	0.018	0.000	0.069	0.551	0.631	0.604
K	0.000	0.000	0.000	0.015	0.131	0.183	0.141
Cr	0.000	0.002	0.000	0.008	0.019	0.015	0.009
Total	3.989	3.996	3.976	4.027	15.666	15.786	15.702
Mg/Mg+Fe	0.775	0.836	0.764	0.800	0.792	0.766	0.764
Ca Ca	0.023	0.472	0.007	0.384	0.300	0.294	0.304
Mg Na	0.757	0.441	0.758	0.493	0.555	0.541	0.532
Fe K	0.220	0.086	0.234	0.123	0.145	0.165	0.164

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11309

Mineral	Anph	Anph	Anph	Anph	Anph	Bi	Bi
SiO2	43.68	44.94	44.15	43.54	44.25	38.97	39.69
TiO2	1.47	1.22	1.25	2.16	1.51	3.48	3.91
Al2O3	12.84	12.42	11.41	13.21	12.29	15.86	15.69
FeO	10.37	8.74	10.10	9.68	10.58	10.98	11.31
MnO	0.02	0.04	0.08	0.07	0.09	0.02	0.00
MgO	14.53	15.33	14.22	14.23	14.64	17.59	16.93
CaO	11.66	12.10	11.71	12.35	11.88	0.02	0.00
Na2O	2.07	1.83	1.87	2.11	2.03	0.20	0.10
K2O	1.04	0.94	1.12	0.84	0.95	6.84	6.90
Cr2O3	0.47	0.20	0.00	0.04	0.17	0.24	0.41
Total	98.15	97.76	95.91	98.23	98.39	94.20	94.94

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	22.	22.
Si	6.345	6.483	6.545	6.302	6.411	5.659	5.719
Al iv	1.655	1.517	1.455	1.698	1.589	2.341	2.281
Al vi	0.543	0.595	0.540	0.556	0.510	0.374	0.384
Ti	0.161	0.132	0.139	0.235	0.165	0.380	0.424
Fe	1.260	1.054	1.252	1.172	1.282	1.333	1.363
Mn	0.002	0.005	0.010	0.009	0.011	0.002	0.000
Mg	3.145	3.296	3.142	3.069	3.161	3.807	3.636
Ca	1.815	1.870	1.860	1.915	1.844	0.003	0.000
Na	0.583	0.512	0.538	0.592	0.570	0.056	0.028
K	0.193	0.173	0.212	0.155	0.176	1.267	1.268
Cr	0.054	0.023	0.000	0.005	0.019	0.028	0.047
Total	15.756	15.660	15.693	15.708	15.738	15.251	15.149
Mg/Mg+Fe	0.714	0.758	0.715	0.724	0.711	0.741	0.727
Ca Ca	0.292	0.301	0.297	0.311	0.293	0.000	0.000
Mg Na	0.506	0.530	0.502	0.499	0.503	0.000	0.000
Fe K	0.203	0.170	0.200	0.190	0.204	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 11309

Mineral	FELD	FELD	FELD	FELD
SiO2	57.98	62.79	58.62	62.84
TiO2	0.00	0.07	0.00	0.05
Al2O3	25.70	18.01	24.61	20.03
FeO	0.02	0.04	0.05	0.10
MnO	0.00	0.00	0.02	0.01
HgO	0.01	0.01	0.00	0.00
CaO	8.19	0.03	7.19	0.00
Na2O	6.27	1.34	7.10	1.60
K2O	0.08	12.05	0.16	10.30
Cr2O3	0.00	0.00	0.00	0.02
Total	98.25	94.33	97.75	94.95

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	10.521	12.061	10.688	11.870
Al iv	5.498	4.078	5.290	4.460
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.010	0.000	0.007
Fe	0.003	0.006	0.008	0.016
Mn	0.000	0.000	0.003	0.002
Hg	0.003	0.003	0.000	0.000
Ca	1.592	0.004	1.405	0.000
Na	2.206	0.499	2.510	0.586
K	0.019	2.953	0.037	2.482
Cr	0.000	0.000	0.000	0.003
Total	19.842	19.615	19.941	19.426
Hg/Hg+Fe	0.471	0.308	0.000	0.000
Ca Ca	0.417	0.001	0.355	0.000
Hg Na	0.578	0.144	0.635	0.191
Fe K	0.005	0.854	0.009	0.809

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 12702

Mineral	Px	Px	Px	Px	Px	Px	Amph
SiO2	50.12	50.40	51.15	50.45	51.39	50.93	43.77
TiO2	0.08	0.07	0.13	0.12	0.00	0.09	1.07
Al2O3	1.19	1.18	1.25	1.13	1.29	1.29	11.73
FeO	31.91	32.06	32.67	32.36	32.24	33.29	20.71
MnO	0.97	0.88	0.93	0.98	1.08	0.91	0.33
MgO	14.54	14.73	14.47	14.62	14.79	14.13	8.68
CaO	0.56	0.54	0.51	0.64	0.61	0.49	10.28
Na2O	0.00	0.00	0.00	0.00	0.00	0.00	1.14
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.37	99.86	101.11	100.30	101.40	101.13	98.60

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	23.
Si	1.975	1.975	1.981	1.973	1.981	1.978	6.575
Al iv	0.025	0.025	0.019	0.027	0.019	0.022	1.425
Al vi	0.031	0.030	0.038	0.025	0.040	0.037	0.652
Ti	0.002	0.002	0.004	0.004	0.000	0.003	0.121
Fe	1.052	1.051	1.058	1.058	1.039	1.081	2.602
Mn	0.032	0.029	0.031	0.032	0.035	0.030	0.042
Mg	0.854	0.860	0.835	0.852	0.850	0.818	1.943
Ca	0.024	0.023	0.021	0.027	0.025	0.020	1.655
Na	0.000	0.000	0.000	0.000	0.000	0.000	0.332
K	0.000	0.000	0.000	0.000	0.000	0.000	0.171
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	3.995	3.995	3.987	3.998	3.990	3.990	15.517
Mg/Mg+Fe	0.448	0.450	0.441	0.446	0.450	0.431	0.428
Ca Ca	0.012	0.012	0.011	0.014	0.013	0.011	0.267
Mg Na $\frac{1}{2}$	0.443	0.445	0.436	0.440	0.444	0.426	0.313
Fe K	0.545	0.543	0.553	0.546	0.543	0.563	0.420

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 12702

Mineral	Anph	Anph	Anph	Bi	Bi	Bi	Bi
SiO2	43.16	42.69	42.77	35.77	35.29	36.68	36.17
TiO2	1.38	1.25	1.37	4.20	4.47	4.08	3.86
Al2O3	11.90	12.12	12.21	15.41	15.05	15.51	15.14
FeO	21.23	21.41	20.77	21.91	22.24	23.08	22.18
MnO	0.30	0.21	0.26	0.06	0.00	0.09	0.14
HgO	8.59	8.28	8.17	9.50	9.08	9.57	9.53
CaO	10.36	10.23	10.48	0.00	0.00	0.00	0.00
Na2O	1.23	1.25	1.48	0.00	0.00	0.00	0.06
K2O	0.91	0.83	0.91	9.25	9.14	8.84	8.97
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.05	98.27	98.42	96.30	95.27	97.85	96.05

Structural Formula

NO.OX.	23.	23.	23.	22.	22.	22.	22.
Si	6.483	6.467	6.463	5.498	5.472	5.519	5.542
Al iv	1.517	1.533	1.537	2.502	2.528	2.481	2.458
Al vi	0.591	0.632	0.638	0.274	0.223	0.271	0.278
Ti	0.156	0.142	0.156	0.483	0.521	0.462	0.445
Fe	2.667	2.713	2.625	2.801	2.884	2.905	2.842
Mn	0.038	0.027	0.033	0.008	0.000	0.011	0.018
Hg	1.921	1.869	1.840	2.164	2.098	2.146	2.176
Ca	1.668	1.661	1.697	0.000	0.000	0.000	0.000
Na	0.358	0.367	0.434	0.000	0.000	0.000	0.018
K	0.174	0.160	0.175	1.804	1.808	1.697	1.754
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.573	15.572	15.598	15.533	15.535	15.492	15.531
Hg/Hg+Fe	0.419	0.408	0.412	0.436	0.421	0.425	0.434
Ca Ca	0.267	0.266	0.275	0.000	0.000	0.000	0.000
Hg Na	0.307	0.299	0.299	0.000	0.000	0.000	0.000
Fe K	0.426	0.435	0.426	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 12702

Mineral	Bi	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	36.36	59.29	59.65	58.13	60.57	59.71	59.89
TiO2	4.64	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	15.76	26.18	26.38	26.99	26.15	26.34	26.07
FeO	22.54	0.01	0.02	0.00	0.11	0.05	0.05
MnO	0.08	0.00	0.00	0.00	0.00	0.00	0.00
HgO	9.01	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	7.93	8.07	9.05	7.72	8.09	7.77
Na2O	0.00	6.68	6.59	6.08	6.81	6.85	6.94
K2O	8.94	0.23	0.19	0.21	0.26	0.21	0.25
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.33	100.32	100.90	100.46	101.62	101.25	100.97

Structural Formula

NO.OX.	22.	32.	32.	32.	32.	32.	32.
Si	5.493	10.540	10.539	10.351	10.620	10.528	10.580
Al _{iv}	2.507	5.487	5.495	5.666	5.405	5.475	5.430
Al _{vi}	0.300	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.527	0.000	0.000	0.000	0.000	0.000	0.000
Fe	2.848	0.001	0.003	0.000	0.016	0.007	0.007
Mn	0.010	0.000	0.000	0.000	0.000	0.000	0.000
Hg	2.029	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	1.511	1.528	1.727	1.450	1.528	1.471
Na	0.000	2.303	2.258	2.099	2.315	2.342	2.377
K	1.723	0.052	0.043	0.048	0.058	0.047	0.056
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.438	19.894	19.864	19.890	19.864	19.929	19.922
Hg/Hg+Fe	0.416	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.391	0.399	0.446	0.379	0.390	0.377
Hg Na	0.000	0.596	0.590	0.542	0.605	0.598	0.609
Fe K	0.000	0.013	0.011	0.012	0.015	0.012	0.014

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 12702

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.88	60.67	61.58	60.25	59.91	59.56	59.90
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.19	26.07	25.21	26.24	26.06	26.37	26.24
FeO	0.07	0.00	0.05	0.00	0.10	0.05	0.03
MnO	0.00	0.00	0.00	0.00	0.06	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.03	7.59	6.58	7.63	7.55	8.14	7.78
Na2O	6.84	7.10	7.35	6.98	6.97	6.80	6.96
K2O	0.24	0.24	0.41	0.26	0.26	0.20	0.27
Cr2O3	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.31	101.67	101.18	101.36	100.91	101.12	101.18

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.552	10.632	10.814	10.593	10.589	10.516	10.562
Al _{iv}	5.441	5.386	5.219	5.439	5.430	5.489	5.455
Al _{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.010	0.000	0.007	0.000	0.015	0.007	0.004
Mn	0.000	0.000	0.000	0.000	0.009	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.516	1.425	1.238	1.437	1.430	1.540	1.470
Na	2.337	2.412	2.503	2.380	2.389	2.328	2.380
K	0.054	0.054	0.092	0.058	0.059	0.045	0.061
Cr	0.008	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.919	19.909	19.873	19.907	19.920	19.926	19.931
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.388	0.366	0.323	0.371	0.369	0.394	0.376
Mg Na	0.598	0.620	0.653	0.614	0.616	0.595	0.609
Fe K	0.014	0.014	0.024	0.015	0.015	0.012	0.016

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 12702

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	58.65	60.02	59.99	59.93	59.75	60.72	58.73
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.13	25.90	26.42	26.41	26.23	25.82	27.33
FeO	0.05	0.02	0.10	0.17	0.09	0.07	0.09
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	9.90	7.69	8.06	7.88	8.04	7.37	8.99
Na2O	5.51	6.87	6.68	6.78	6.74	7.27	6.22
K2O	0.19	0.20	0.14	0.24	0.27	0.24	0.26
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.43	100.70	101.39	101.41	101.12	101.49	101.62

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.449	10.618	10.548	10.544	10.547	10.661	10.344
Al iv	5.488	5.402	5.477	5.478	5.459	5.344	5.675
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.007	0.003	0.015	0.025	0.013	0.010	0.013
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.890	1.458	1.519	1.486	1.521	1.387	1.697
Na	1.903	2.357	2.278	2.313	2.307	2.475	2.124
K	0.043	0.045	0.031	0.054	0.061	0.054	0.058
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.781	19.882	19.868	19.900	19.907	19.931	19.910
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.493	0.378	0.397	0.386	0.391	0.354	0.437
Hg Na	0.496	0.611	0.595	0.600	0.593	0.632	0.548
Fe K	0.011	0.012	0.008	0.014	0.016	0.014	0.015

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 12702

Mineral	FELD	FELD	FELD
SiO2	60.34	59.61	60.05
TiO2	0.00	0.00	0.00
Al2O3	26.06	26.13	26.42
FeO	0.08	0.00	0.19
MnO	0.00	0.00	0.00
HgO	0.00	0.00	0.00
CaO	7.56	7.84	7.80
Na2O	7.14	6.91	7.02
K2O	0.19	0.24	0.25
Cr2O3	0.00	0.00	0.00
Total	101.37	100.73	101.73

Structural Formula

NO.OX.	32.	32.	32.
Si	10.611	10.557	10.541
Al iv	5.403	5.456	5.467
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.012	0.000	0.028
Mn	0.000	0.000	0.000
Hg	0.000	0.000	0.000
Ca	1.424	1.488	1.467
Na	2.435	2.373	2.389
K	0.043	0.054	0.056
Cr	0.000	0.000	0.000
Total	19.927	19.928	19.948
Hg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.365	0.380	0.375
Hg Na	0.624	0.606	0.611
Fe K	0.011	0.014	0.014

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 12703

Mineral	Anph	Anph	Bi	Bi	Feld(3)	Feld(3)	Feld(3)
SiO2	45.73	43.23	35.36	35.39	60.54	58.29	59.37
TiO2	0.18	0.04	3.47	3.51	0.00	0.00	0.00
Al2O3	8.68	11.05	16.33	16.07	25.61	24.58	24.87
FeO	18.55	20.48	21.39	21.29	0.00	0.00	0.00
MnO	0.41	0.66	0.19	0.10	0.00	0.00	0.00
HgO	11.12	9.80	9.38	9.58	0.00	0.00	0.00
CaO	11.36	10.76	0.00	0.00	7.01	6.68	6.66
Na2O	0.86	1.09	0.04	0.09	7.72	7.31	7.58
K2O	0.52	0.70	9.60	9.48	0.16	0.38	0.27
Cr2O3	0.08	0.02	0.03	0.07	0.00	0.00	0.00
Total	97.49	97.83	95.79	95.58	101.04	97.24	98.75

Structural Formula

NO.OX.	23.	23.	22.	22.	32.	32.	32.
Si	6.877	6.567	5.438	5.450	10.676	10.687	10.711
Al ^{iv}	1.123	1.433	2.562	2.550	5.324	5.313	5.289
Al ^{vi}	0.416	0.546	0.399	0.367	0.000	0.000	0.000
Ti	0.020	0.005	0.401	0.407	0.000	0.000	0.000
Fe	2.333	2.602	2.751	2.742	0.000	0.000	0.000
Mn	0.052	0.085	0.025	0.013	0.000	0.000	0.000
Hg	2.492	2.219	2.150	2.199	0.000	0.000	0.000
Ca	1.830	1.751	0.000	0.000	1.325	1.312	1.287
Na	0.251	0.321	0.012	0.027	2.640	2.599	2.652
K	0.100	0.136	1.884	1.862	0.036	0.089	0.062
Cr	0.010	0.002	0.004	0.009	0.000	0.000	0.000
Total	15.504	15.666	15.626	15.625	20.000	20.000	20.001
Hg/Hg+Fe	0.516	0.460	0.439	0.445	0.000	0.000	0.000
Ca Ca	0.275	0.266	0.000	0.000	0.331	0.328	0.322
Hg Na	0.374	0.338	0.000	0.000	0.660	0.650	0.663
Fe K	0.351	0.396	0.000	0.000	0.009	0.022	0.016

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 12703

Mineral	Feld(3)	Feld(3)	Feld(3)
SiO2	58.91	58.48	58.86
TiO2	0.00	0.00	0.00
Al2O3	24.31	24.70	24.72
FeO	0.00	0.00	0.00
MnO	0.00	0.00	0.00
HgO	0.00	0.00	0.00
CaO	6.31	6.74	6.66
Na2O	7.70	7.45	7.58
K2O	0.17	0.19	0.13
Cr2O3	0.00	0.00	0.00
Total	97.40	97.56	97.95

Structural Formula

NO.OX.	32.	32.	32.
Si	10.763	10.681	10.702
Al iv	5.236	5.318	5.299
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.000	0.000	0.000
Mn	0.000	0.000	0.000
Hg	0.000	0.000	0.000
Ca	1.235	1.319	1.297
Na	2.728	2.638	2.672
K	0.040	0.044	0.030
Cr	0.000	0.000	0.000
Total	20.002	20.001	20.000
Hg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.309	0.330	0.324
Hg Na	0.681	0.659	0.668
Fe K	0.010	0.011	0.008

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 13104

Mineral	Px	Px	Anph	Anph	Anph	Anph	Anph
SiO2	52.89	53.09	49.88	53.07	48.98	47.19	46.42
TiO2	0.00	0.07	0.13	0.08	0.32	0.60	0.83
Al2O3	3.19	3.03	4.87	3.51	6.61	8.04	8.39
FeO	13.93	14.04	15.45	14.48	16.01	16.93	17.51
MnO	0.35	0.36	0.36	0.31	0.26	0.33	0.39
MgO	14.56	14.32	12.75	14.39	12.08	10.99	10.72
CaO	12.68	12.33	12.38	12.40	12.44	12.24	12.17
Na2O	0.36	0.35	0.48	0.33	0.81	0.99	1.08
K2O	0.17	0.17	0.37	0.20	0.61	0.79	0.97
Cr2O3	0.50	0.21	0.44	0.25	0.52	0.05	0.00
Total	98.63	97.97	97.11	99.02	98.64	98.15	98.48

Structural Formula

NO.OX.	6.	6.	23.	23.	23.	23.	23.
Si	1.987	2.004	7.388	7.614	7.182	7.004	6.907
Al iv	0.013	0.000	0.612	0.386	0.818	0.996	1.093
Al vi	0.128	0.135	0.238	0.207	0.324	0.411	0.378
Ti	0.000	0.002	0.014	0.009	0.035	0.067	0.093
Fe	0.438	0.443	1.914	1.737	1.963	2.102	2.179
Mn	0.011	0.012	0.045	0.038	0.032	0.041	0.049
Mg	0.815	0.806	2.814	3.077	2.640	2.431	2.377
Ca	0.510	0.499	1.965	1.906	1.954	1.947	1.940
Na	0.026	0.026	0.138	0.092	0.230	0.285	0.312
K	0.008	0.008	0.070	0.037	0.114	0.150	0.184
Cr	0.015	0.006	0.052	0.028	0.060	0.006	0.000
Total	3.952	3.940	15.250	15.131	15.354	15.440	15.512
Mg/Mg+Fe	0.651	0.645	0.595	0.639	0.573	0.536	0.522
Ca Ca	0.289	0.285	0.294	0.284	0.298	0.300	0.299
Mg Na	0.462	0.461	0.421	0.458	0.403	0.375	0.366
Fe K	0.248	0.254	0.286	0.259	0.299	0.324	0.335

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 13104

Mineral	Anph	Anph	Anph	Anph	Bi	Bi	Bi
SiO2	48.46	49.44	47.21	51.03	36.42	37.42	37.41
TiO2	0.34	0.19	0.35	0.17	1.80	1.67	1.62
Al2O3	6.87	6.53	8.44	5.47	15.67	16.11	15.87
FeO	15.66	15.51	16.29	14.93	19.34	19.38	19.59
MnO	0.31	0.33	0.27	0.36	0.24	0.16	0.25
MgO	11.91	12.34	10.91	13.14	11.35	11.67	11.57
CaO	12.28	12.11	11.88	12.05	0.00	0.00	0.00
Na2O	0.84	0.64	0.88	0.54	0.00	0.08	0.11
K2O	0.65	0.49	0.81	0.39	10.10	9.39	9.69
Cr2O3	0.14	0.08	0.00	0.16	0.07	0.10	0.10
Total	97.46	97.66	97.04	98.24	94.99	95.98	96.21

Structural Formula

NO.OX.	23.	23.	23.	23.	22.	22.	22.
Si	7.180	7.273	7.047	7.417	5.600	5.648	5.654
Al ^{iv}	0.820	0.727	0.953	0.583	2.400	2.352	2.346
Al ^{vi}	0.380	0.405	0.532	0.355	0.441	0.514	0.482
Ti	0.038	0.021	0.039	0.019	0.208	0.190	0.184
Fe	1.940	1.908	2.034	1.815	2.487	2.446	2.476
Mn	0.039	0.041	0.034	0.044	0.031	0.020	0.032
Mg	2.630	2.705	2.427	2.846	2.601	2.625	2.606
Ca	1.949	1.909	1.900	1.877	0.000	0.000	0.000
Na	0.241	0.183	0.255	0.152	0.000	0.023	0.032
K	0.123	0.092	0.154	0.072	1.981	1.808	1.868
Cr	0.016	0.009	0.000	0.018	0.009	0.012	0.012
Total	15.356	15.273	15.375	15.199	15.758	15.639	15.692
Mg/Mg+Fe	0.575	0.586	0.544	0.611	0.511	0.518	0.513
Ca Ca	0.299	0.293	0.299	0.287	0.000	0.000	0.000
Mg Na	0.403	0.415	0.382	0.435	0.000	0.000	0.000
Fe K	0.298	0.293	0.320	0.278	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 13104

Mineral	Bl	Epl	FELD	FELD	FELD	FELD	FELD
SiO2	37.29	38.42	55.34	56.14	55.05	57.48	55.89
TiO2	1.56	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	16.25	25.06	27.68	27.11	28.22	26.27	27.34
FeO	18.78	9.52	0.00	0.00	0.00	0.03	0.02
MnO	0.29	0.12	0.00	0.00	0.00	0.00	0.00
MgO	11.68	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	24.17	9.96	9.53	10.53	8.50	9.55
Na2O	0.08	0.00	5.92	6.16	5.66	6.92	6.10
K2O	9.81	0.00	0.13	0.16	0.15	0.20	0.17
Cr2O3	0.00	0.16	0.00	0.00	0.00	0.00	0.00
Total	95.74	97.45	99.03	99.10	99.61	99.40	99.07

Structural Formula

NO.OX.	22.	25.	32.	32.	32.	32.	32.
Si	5.644	6.185	10.055	10.178	9.960	10.369	10.139
Al iv	2.356	0.000	5.929	5.794	6.019	5.587	5.847
Al vi	0.543	4.756	0.000	0.000	0.000	0.000	0.000
Ti	0.178	0.000	0.000	0.000	0.000	0.000	0.000
Fe	2.377	1.282	0.000	0.000	0.000	0.005	0.003
Mn	0.037	0.016	0.000	0.000	0.000	0.000	0.000
Mg	2.635	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	4.169	1.939	1.851	2.041	1.643	1.856
Na	0.023	0.000	2.086	2.165	1.986	2.421	2.146
K	1.894	0.000	0.030	0.037	0.035	0.046	0.037
Cr	0.000	0.020	0.000	0.000	0.000	0.000	0.000
Total	15.688	16.427	20.039	20.026	20.041	20.070	20.030
Mg/Mg+Fe	0.526	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.478	0.457	0.503	0.400	0.459
Mg Na	0.000	0.000	0.514	0.534	0.489	0.589	0.531
Fe K	0.000	0.000	0.007	0.009	0.009	0.011	0.010

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 13104

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	57.34	58.78	57.55	57.90	56.48	65.45	64.85
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.95	26.27	27.08	27.06	27.73	18.65	18.70
FeO	0.00	0.04	0.05	0.00	0.02	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.98	8.37	8.76	9.19	9.94	0.00	0.00
Na2O	6.50	7.10	6.73	6.49	6.07	1.13	1.15
K2O	0.18	0.17	0.20	0.13	0.10	15.06	14.84
Cr2O3	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.01	100.73	100.37	100.77	100.34	100.29	99.54

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.282	10.449	10.284	10.300	10.119	11.997	11.971
Al ^{iv}	5.697	5.506	5.705	5.675	5.857	4.030	4.070
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.006	0.007	0.000	0.003	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.725	1.594	1.677	1.752	1.908	0.000	0.000
Na	2.260	2.447	2.332	2.239	2.109	0.402	0.412
K	0.041	0.039	0.046	0.030	0.023	3.522	3.495
Cr	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Total	20.015	20.041	20.052	19.996	20.018	19.950	19.947
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.429	0.391	0.414	0.436	0.472	0.000	0.000
Mg Na	0.561	0.600	0.575	0.557	0.522	0.102	0.105
Fe K	0.010	0.009	0.011	0.007	0.006	0.898	0.895

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 13104

Mineral	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	64.54	57.92	64.72	57.56	64.86	55.10
TiO2	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	18.42	27.48	18.36	27.48	18.41	28.85
FeO	0.04	0.04	0.00	0.04	0.00	0.07
MnO	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	9.25	0.00	9.71	0.00	11.29
Na2O	1.23	6.46	1.21	6.39	1.09	5.27
K2O	14.59	0.16	15.12	0.44	15.13	0.12
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00
Total	98.82	101.31	99.41	101.32	99.49	100.70

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.
Si	11.994	10.254	11.990	10.208	11.998	9.875
Al iv	4.036	5.736	4.010	5.745	4.015	6.095
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.006	0.006	0.000	0.006	0.000	0.010
Mn	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	1.755	0.000	1.845	0.000	2.168
Na	0.443	2.218	0.435	2.197	0.371	1.831
K	3.459	0.036	3.574	0.032	3.571	0.027
Cr	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.939	20.005	20.009	20.034	19.975	20.007
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca-	0.000	0.438	0.000	0.453	0.000	0.538
Hg Na	0.114	0.553	0.108	0.539	0.099	0.455
Fe K	0.886	0.009	0.892	0.008	0.901	0.007

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20606

Mineral	Px	Px	Px	Px	Px	Px	Px
SiO2	52.64	51.18	53.42	55.05	53.73	56.48	55.09
TiO2	0.11	0.00	0.08	0.11	0.07	0.00	0.11
Al2O3	1.25	1.21	1.14	1.17	2.93	0.76	1.30
FeO	24.21	22.78	22.35	22.84	23.26	20.59	23.48
MnO	0.88	0.69	0.74	0.80	0.66	0.69	0.72
HgO	17.70	17.72	18.60	18.60	17.48	20.20	18.20
CaO	0.78	0.77	0.74	0.64	1.65	0.48	0.91
Na2O	0.09	0.08	0.08	0.12	0.22	0.09	0.11
K2O	0.00	0.00	0.14	0.00	0.00	0.00	0.00
Cr2O3	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.72	94.43	97.29	99.33	100.00	99.29	99.92

Structural Formula

NO.OX.	δ.	δ.	δ.	δ.	δ.	δ.	δ.
Si	2.024	2.028	2.042	2.056	2.005	2.081	2.052
Al iv	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Al vi	0.057	0.057	0.051	0.052	0.129	0.033	0.057
Ti	0.003	0.060	0.002	0.003	0.002	0.000	0.003
Fe	0.779	0.755	0.714	0.713	0.726	0.635	0.731
Mn	0.029	0.023	0.024	0.025	0.021	0.022	0.023
Hg	1.014	1.046	1.060	1.035	0.972	1.109	1.010
Ca	0.032	0.033	0.030	0.026	0.066	0.019	0.036
Na	0.007	0.006	0.006	0.009	0.016	0.006	0.008
K	0.000	0.000	0.007	0.000	0.000	0.000	0.000
Cr	0.002	0.000	0.000	0.000	0.000	0.000	0.000
Total	3.947	3.947	3.937	3.919	3.937	3.905	3.921
Hg/Hg+Fe	0.566	0.581	0.597	0.592	0.572	0.636	0.580
Ca Ca	0.018	0.018	0.017	0.014	0.037	0.011	0.020
Hg Na	0.556	0.571	0.587	0.583	0.551	0.629	0.568
Fe K	0.427	0.412	0.396	0.402	0.412	0.360	0.411

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20606

Mineral	Px	Anph	Anph	Anph	Anph	Anph	Anph
SiO2	56.16	43.71	42.63	42.48	43.22	45.34	45.73
TiO2	0.00	1.22	1.06	1.12	1.32	1.10	1.27
Al2O3	0.60	11.04	11.50	11.16	11.15	11.41	11.20
FeO	23.13	16.52	16.37	16.62	16.29	17.00	16.48
MnO	0.63	0.26	0.24	0.28	0.22	0.16	0.31
HgO	19.08	11.62	11.13	11.07	11.31	11.47	11.55
CaO	0.60	10.63	10.60	10.34	10.64	11.06	11.12
Na2O	0.00	1.23	1.13	1.23	1.32	1.31	1.30
K2O	0.00	0.56	0.50	0.59	0.59	0.58	0.58
Cr2O3	0.05	0.09	0.00	0.00	0.00	0.11	0.00
Total	100.25	96.88	95.16	94.89	96.06	99.54	99.54

Structural Formula

NO.OX.	6.	23.	23.	23.	23.	23.	23.
Si	2.075	6.563	6.517	6.528	6.546	6.618	6.658
Al iv	0.000	1.437	1.483	1.472	1.454	1.382	1.342
Al vi	0.026	0.517	0.590	0.550	0.536	0.581	0.580
Ti	0.000	0.138	0.122	0.129	0.150	0.121	0.139
Fe	0.715	2.075	2.093	2.136	2.063	2.075	2.007
Mn	0.020	0.033	0.031	0.036	0.028	0.020	0.038
Hg	1.051	2.600	2.536	2.535	2.553	2.495	2.506
Ca	0.024	1.710	1.736	1.703	1.727	1.730	1.735
Na	0.000	0.358	0.335	0.367	0.388	0.371	0.367
K	0.000	0.107	0.098	0.116	0.114	0.108	0.108
Cr	0.001	0.011	0.000	0.000	0.000	0.013	0.000
Total	3.911	15.549	15.541	15.572	15.559	15.513	15.479
Hg/Hg+Fe	0.595	0.556	0.548	0.543	0.553	0.546	0.555
Ca Ca	0.013	0.268	0.273	0.267	0.272	0.275	0.278
Hg Na	0.587	0.407	0.398	0.398	0.402	0.396	0.401
Fe K	0.399	0.325	0.329	0.335	0.325	0.329	0.321

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20606

Mineral	Anph	Anph	Anph	Anph	B1	B1	B1
SiO2	45.54	45.53	44.59	45.43	35.17	34.93	37.28
TiO2	1.26	1.41	1.44	1.25	2.45	2.56	2.52
Al2O3	11.33	10.81	11.11	11.43	16.44	16.64	16.17
FeO	17.23	16.61	17.44	16.97	17.08	16.68	16.24
MnO	0.28	0.26	0.24	0.14	0.00	0.06	0.06
MgO	11.56	11.81	11.72	11.27	13.35	13.15	13.95
CaO	10.77	11.01	10.40	11.08	0.00	0.00	0.00
Na2O	1.28	1.23	1.32	1.41	0.16	0.19	0.22
K2O	0.67	0.57	0.63	0.58	9.48	9.10	9.66
Cr2O3	0.00	0.00	0.00	0.10	0.00	0.10	0.00
Total	99.92	99.24	98.89	99.66	94.13	93.41	96.80

Structural Formula

NO.OX.	23.	23.	23.	23.	22.	22.	22.
Si	6.625	6.655	6.571	6.622	5.393	5.380	5.529
Al iv	1.375	1.345	1.429	1.378	2.607	2.620	2.471
Al vi	0.568	0.517	0.501	0.586	0.364	0.401	0.357
Ti	0.138	0.155	0.160	0.137	0.283	0.297	0.281
Fe	2.096	2.030	2.149	2.069	2.190	2.149	2.101
Mn	0.035	0.032	0.030	0.017	0.000	0.008	0.008
Mg	2.506	2.573	2.574	2.448	3.051	3.018	3.084
Ca	1.679	1.724	1.642	1.731	0.000	0.000	0.000
Na	0.361	0.349	0.377	0.399	0.048	0.057	0.063
K	0.124	0.106	0.118	0.108	1.854	1.788	1.828
Cr	0.000	0.000	0.000	0.012	0.000	0.012	0.000
Total	15.508	15.486	15.552	15.506	15.790	15.729	15.721
Mg/Mg+Fe	0.545	0.559	0.545	0.542	0.582	0.584	0.595
Ca Ca	0.267	0.273	0.258	0.277	0.000	0.000	0.000
Mg Na	0.399	0.407	0.404	0.392	0.000	0.000	0.000
Fe K	0.334	0.321	0.338	0.331	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20606

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	48.50	45.51	45.29	49.31	48.59	48.30	48.08
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	33.07	34.13	33.70	33.48	33.00	32.83	32.92
FeO	0.02	0.00	0.16	0.08	0.00	0.11	0.24
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.07
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	16.44	16.60	16.81	16.96	16.99	16.87	17.05
Na2O	2.09	1.94	1.97	2.11	2.27	1.91	2.03
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.07	0.06	0.00	0.00	0.00
Total	100.12	98.18	98.00	102.00	100.85	100.02	100.39

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	8.862	8.514	8.509	8.856	8.837	8.848	8.798
Al ^{iv}	7.123	7.528	7.465	7.088	7.076	7.090	7.102
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.003	0.000	0.025	0.012	0.000	0.017	0.037
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.011
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	3.219	3.328	3.384	3.264	3.311	3.312	3.343
Na	0.740	0.704	0.718	0.735	0.801	0.678	0.720
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.010	0.009	0.000	0.000	0.000
Total	19.947	20.074	20.112	19.963	20.025	19.946	20.011
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.813	0.825	0.825	0.816	0.805	0.830	0.823
Mg Na	0.187	0.175	0.175	0.184	0.195	0.170	0.177
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20606

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	48.22	101.61	50.12	48.44	49.26	48.93	49.57
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	33.45	0.00	32.49	33.04	32.88	33.25	32.80
FeO	0.14	0.09	0.04	0.12	0.12	0.09	0.06
MnO	0.00	0.00	0.00	0.00	0.00	0.07	0.08
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	17.06	0.06	16.22	17.16	16.79	16.94	16.72
Na2O	1.86	0.00	2.46	2.08	2.13	2.05	2.31
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.73	101.76	101.33	100.84	101.18	101.33	101.54

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	8.778	15.989	9.036	8.817	8.915	8.849	8.941
Al ^{iv}	7.178	0.000	6.906	7.090	7.015	7.090	6.975
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.021	0.012	0.006	0.018	0.018	0.014	0.009
Mn	0.000	0.000	0.000	0.000	0.000	0.011	0.012
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	3.328	0.010	3.133	3.347	3.256	3.283	3.231
Na	0.657	0.000	0.860	0.734	0.747	0.719	0.808
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.961	16.011	19.941	20.005	19.951	19.965	19.976
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.835	1.000	0.785	0.820	0.813	0.820	0.800
Mg Na	0.165	0.000	0.215	0.180	0.187	0.180	0.200
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20606

Mineral	FELD	FELD	FELD	FELD
SiO2	48.80	48.96	49.78	49.10
TiO2	0.00	0.00	0.00	0.00
Al2O3	32.91	33.09	32.43	32.57
FeO	0.09	0.01	0.04	0.24
MnO	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.07
CaO	17.00	17.16	16.31	16.51
Na2O	2.00	2.11	2.49	2.26
K2O	0.00	0.00	0.06	0.00
Cr2O3	0.00	0.00	0.00	0.00
Total	100.80	101.33	101.11	100.75

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	8.871	8.858	9.006	8.928
Al iv	7.053	7.058	6.917	6.882
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.014	0.002	0.006	0.036
Mn	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.019
Ca	3.311	3.327	3.162	3.217
Na	0.705	0.740	0.874	0.797
K	0.000	0.000	0.014	0.000
Cr	0.000	0.000	0.000	0.000
Total	19.955	19.984	19.979	19.979
Mg/Mg+Fe	0.000	0.000	0.000	0.342
Ca Ca	0.824	0.818	0.781	0.801
Mg Na	0.176	0.182	0.216	0.199
Fe K	0.000	0.000	0.003	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20904

Mineral	Px	Px	Gar	FELD	FELD	FELD
SiO2	50.42	49.99	37.85	59.25	58.38	59.17
TiO2	0.21	0.10	0.00	0.00	0.00	0.00
Al2O3	2.05	2.02	19.90	26.71	26.87	26.79
FeO	19.01	18.81	26.29	0.15	0.06	0.01
MnO	0.98	1.12	4.43	0.00	0.00	0.00
MgO	6.93	7.03	1.55	0.00	0.00	0.00
CaO	21.00	21.22	8.74	8.26	8.78	8.08
Na2O	0.43	0.42	0.00	6.82	6.63	7.01
K2O	0.00	0.00	0.00	0.10	0.16	0.12
Cr2O3	0.00	0.00	0.06	0.00	0.00	0.06
Total	101.03	100.71	98.82	101.29	100.88	101.24

Structural Formula

NO.OX.	6.	6.	12.	32.	32.	32.
Si	1.955	1.948	3.061	10.453	10.363	10.442
Al iv	0.045	0.052	0.000	5.555	5.623	5.574
Al vi	0.049	0.040	1.897	0.000	0.000	0.000
Ti	0.006	0.003	0.000	0.000	0.000	0.000
Fe	0.616	0.613	1.778	0.022	0.009	0.001
Mn	0.032	0.037	0.303	0.000	0.000	0.000
Mg	0.400	0.408	0.187	0.000	0.000	0.000
Ca	0.872	0.886	0.757	1.561	1.670	1.528
Na	0.032	0.032	0.000	2.333	2.282	2.399
K	0.000	0.000	0.000	0.023	0.036	0.027
Cr	0.000	0.000	0.004	0.000	0.000	0.008
Total	4.008	4.019	7.988	19.947	19.984	19.980
Mg/Mg+Fe	0.394	0.400	0.095	0.000	0.000	0.000
Ca Ca	0.462	0.465	0.000	0.399	0.419	0.386
Mg Na	0.212	0.214	0.000	0.596	0.572	0.607
Fe K	0.326	0.321	0.000	0.006	0.009	0.007

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20907

Mineral	Px	Px	Px	Px	Amph	Amph	Amph
SiO2	54.48	54.61	54.29	54.26	42.77	42.47	43.77
TiO2	0.00	0.00	0.00	0.00	1.02	0.88	0.92
Al2O3	0.95	0.90	0.63	0.88	10.95	10.83	10.69
FeO	22.69	22.40	23.26	22.68	19.89	19.91	19.93
MnO	2.60	2.64	2.72	2.51	0.62	0.52	0.72
HgO	17.17	16.75	17.36	17.33	9.56	9.23	10.11
CaO	1.64	1.48	0.69	1.13	11.38	11.09	10.48
Na2O	0.11	0.06	0.00	0.06	1.21	1.11	1.03
K2O	0.00	0.05	0.05	0.00	0.93	0.93	0.91
Cr2O3	0.00	0.00	0.11	0.00	0.00	0.00	0.00
Total	99.64	98.89	99.11	98.85	98.33	96.97	98.56

Structural Formula

NO.OX.	6.	6.	6.	6.	23.	23.	23.
Si	2.052	2.068	2.059	2.057	6.480	6.520	6.581
Al iv	0.000	0.000	0.000	0.000	1.520	1.480	1.419
Al vi	0.042	0.040	0.028	0.039	0.436	0.480	0.475
Ti	0.000	0.000	0.000	0.000	0.116	0.102	0.104
Fe	0.715	0.710	0.738	0.719	2.520	2.556	2.506
Mn	0.083	0.085	0.087	0.081	0.080	0.068	0.092
Hg	0.964	0.945	0.981	0.979	2.159	2.112	2.265
Ca	0.066	0.060	0.028	0.046	1.847	1.824	1.688
Na	0.008	0.004	0.000	0.004	0.355	0.330	0.300
K	0.000	0.002	0.002	0.000	0.180	0.182	0.175
Cr	0.000	0.000	0.003	0.000	0.000	0.000	0.000
Total	3.931	3.915	3.927	3.926	15.693	15.654	15.605
Hg/Hg+Fe	0.574	0.571	0.571	0.577	0.461	0.452	0.475
Ca Ca	0.038	0.035	0.016	0.026	0.283	0.281	0.261
Hg Na	0.552	0.551	0.562	0.561	0.331	0.325	0.351
Fe K	0.410	0.414	0.422	0.412	0.386	0.394	0.388

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20907

Mineral	Anph	Anph	Anph	Bi	Pi	Bi	Bi
SiO2	45.12	43.78	44.24	35.98	34.93	35.75	35.80
TiO2	0.69	0.00	0.90	3.42	3.16	3.64	3.70
Al2O3	10.75	15.41	11.18	16.45	16.57	16.54	16.53
FeO	18.96	17.29	20.93	21.01	20.36	20.50	21.49
MnO	0.71	0.58	0.60	0.20	0.29	0.20	0.16
HgO	9.89	9.18	9.04	10.41	10.30	9.98	9.76
CaO	11.17	11.57	10.99	0.00	0.00	0.00	0.00
Na2O	0.99	0.92	1.12	0.09	0.07	0.09	0.11
K2O	0.97	0.84	1.01	9.25	9.08	9.60	9.26
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.25	99.57	100.01	96.81	94.76	96.30	96.81

Structural Formula

NO.OX.	23.	23.	23.	22.	22.	22.	22.
Si	6.694	6.403	6.582	5.443	5.397	5.438	5.429
Al iv	1.306	1.597	1.418	2.557	2.603	2.562	2.571
Al vi	0.574	1.060	0.543	0.376	0.415	0.405	0.385
Ti	0.077	0.000	0.101	0.389	0.367	0.416	0.422
Fe	2.352	2.115	2.604	2.658	2.631	2.608	2.726
Mn	0.089	0.072	0.076	0.026	0.038	0.026	0.021
Hg	2.187	2.001	2.004	2.347	2.372	2.263	2.206
Ca	1.776	1.813	1.752	0.000	0.000	0.000	0.000
Na	0.285	0.261	0.323	0.026	0.021	0.027	0.032
K	0.184	0.157	0.192	1.785	1.790	1.863	1.792
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.523	15.478	15.594	15.607	15.633	15.607	15.583
Hg/Hg+Fe	0.482	0.486	0.435	0.469	0.474	0.465	0.447
Ca Ca	0.281	0.306	0.275	0.000	0.000	0.000	0.000
Hg Na	0.346	0.337	0.315	0.000	0.000	0.000	0.000
Fe K	0.373	0.357	0.409	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20907

Mineral	Bi	Bi	FELD	FELD	FELD	FELD	FELD
SiO2	36.38	35.79	60.35	59.44	60.27	59.18	60.17
TiO2	3.30	3.03	0.00	0.00	0.00	0.00	0.00
Al2O3	16.30	16.51	25.16	24.84	25.60	25.12	25.45
FeO	20.92	20.50	0.02	0.04	0.10	0.17	0.09
MnO	0.33	0.28	0.00	0.00	0.00	0.00	0.00
HgO	10.26	10.07	0.00	0.00	0.00	0.12	0.00
CaO	0.00	0.00	6.43	6.49	6.43	6.17	6.08
Na2O	0.00	0.00	7.93	8.02	8.01	8.04	8.27
K2O	9.60	9.57	0.13	0.18	0.18	0.31	0.21
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.09	95.75	100.02	99.01	100.59	99.11	100.27

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	5.492	5.474	10.737	10.705	10.675	10.657	10.692
Al iv	2.508	2.526	5.277	5.274	5.346	5.333	5.331
Al vi	0.393	0.452	0.000	0.000	0.000	0.000	0.000
Ti	0.375	0.349	0.000	0.000	0.000	0.000	0.000
Fe	2.641	2.622	0.003	0.006	0.015	0.026	0.013
Mn	0.042	0.036	0.000	0.000	0.000	0.000	0.000
Hg	2.308	2.296	0.000	0.000	0.000	0.032	0.000
Ca	0.000	0.000	1.226	1.252	1.220	1.190	1.158
Na	0.000	0.000	2.736	2.801	2.751	2.807	2.849
K	1.849	1.868	0.030	0.041	0.041	0.071	0.048
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.608	15.622	20.007	20.079	20.048	20.116	20.091
Hg/Hg+Fe	0.466	0.467	0.000	0.000	0.000	0.557	0.000
Ca Ca	0.000	0.000	0.307	0.306	0.304	0.293	0.286
Hg Na	0.000	0.000	0.685	0.684	0.686	0.690	0.703
Fe K	0.000	0.000	0.007	0.010	0.010	0.018	0.012

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 20907

Mineral	FELD	FELD	FELD	FELD
SiO2	60.63	61.44	60.52	61.12
TiO2	0.00	0.00	0.00	0.00
Al2O3	25.08	25.21	25.44	25.12
FeO	0.10	0.16	0.05	0.16
MnO	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00
CaO	6.13	6.06	6.58	6.18
Na2O	8.21	8.36	8.10	8.10
K2O	0.20	0.23	0.17	0.26
Cr2O3	0.00	0.00	0.00	0.00
Total	100.35	101.46	100.86	100.94

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	10.758	10.782	10.695	10.780
Al iv	5.246	5.216	5.300	5.223
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.015	0.023	0.007	0.024
Mn	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000
Ca	1.165	1.140	1.246	1.168
Na	2.825	2.845	2.775	2.770
K	0.045	0.051	0.038	0.059
Cr	0.000	0.000	0.000	0.000
Total	20.054	20.058	20.062	20.023
Hg/Hg+Fe	0.000	0.000	0.000	0.000
Ca Ca	0.289	0.282	0.307	0.292
Hg Na	0.700	0.705	0.684	0.693
Fe K	0.011	0.013	0.009	0.015

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 21502

Mineral	Anph	Anph	Bi	Bi	Feld(3)	Feld(3)	Feld(3)
SiO2	42.54	42.68	35.73	36.20	57.59	57.61	57.29
TiO2	0.91	1.29	1.99	2.16	0.00	0.00	0.00
Al2O3	12.12	11.60	16.93	16.97	26.33	26.66	26.18
FeO	18.87	18.74	18.17	17.96	0.00	0.00	0.00
MnO	0.29	0.36	0.12	0.10	0.00	0.00	0.00
HgO	10.21	10.52	12.82	12.80	0.00	0.00	0.00
CaO	10.63	9.92	0.00	0.00	8.29	8.56	8.23
Na2O	1.40	1.50	0.15	0.21	6.79	6.72	6.78
K2O	0.55	0.50	9.22	8.87	0.08	0.05	0.05
Cr2O3	0.09	0.08	0.01	0.04	0.00	0.00	0.00
Total	97.61	97.19	95.14	95.31	99.08	99.60	98.53

Structural Formula

NO.OX.	23.	23.	22.	22.	32.	32.	32.
Si	6.423	6.460	5.427	5.464	10.397	10.352	10.399
Al IV	1.577	1.540	2.573	2.536	5.604	5.648	5.602
Al V.	0.580	0.529	0.459	0.484	0.000	0.000	0.000
Ti	0.103	0.147	0.227	0.245	0.000	0.000	0.000
Fe	2.383	2.372	2.308	2.267	0.000	0.000	0.000
Mn	0.037	0.046	0.015	0.013	0.000	0.000	0.000
Hg	2.297	2.373	2.902	2.879	0.000	0.000	0.000
Ca	1.720	1.609	0.000	0.000	1.604	1.648	1.601
Na	0.410	0.440	0.044	0.061	2.377	2.341	2.386
K	0.106	0.097	1.787	1.708	0.018	0.011	0.012
Cr	0.011	0.010	0.001	0.005	0.000	0.000	0.000
Total	15.647	15.622	15.744	15.663	19.999	20.001	19.999
Hg/Hg+Fe	0.491	0.500	0.557	0.559	0.000	0.000	0.000
Ca Ca	0.269	0.253	0.000	0.000	0.401	0.412	0.400
Hg Na	0.359	0.373	0.000	0.000	0.594	0.585	0.597
Fe K	0.372	0.373	0.000	0.000	0.005	0.003	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 21603

Mineral	Px	Px	Px	Px	Px	Px	Anph
SiO2	52.59	52.40	52.68	52.56	52.79	53.05	45.84
TiO2	0.11	0.12	0.12	0.19	0.12	0.11	0.99
Al2O3	1.61	1.87	1.53	1.92	1.81	1.84	9.57
FeO	11.94	11.63	12.31	12.31	11.24	11.62	17.51
MnO	0.31	0.28	0.34	0.36	0.42	0.31	0.28
MgO	11.84	11.76	11.94	11.82	11.76	11.89	10.69
CaO	22.00	22.84	21.88	22.03	22.15	22.02	11.53
Na2O	0.45	0.42	0.42	0.40	0.45	0.41	1.29
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Cr2O3	0.08	0.00	0.00	0.00	0.00	0.06	0.06
Total	100.93	101.32	101.22	101.59	100.74	101.31	98.14

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	23.
Si	1.970	1.957	1.970	1.959	1.975	1.974	6.810
Al iv	0.030	0.043	0.030	0.041	0.025	0.026	1.190
Al vi	0.041	0.039	0.037	0.043	0.054	0.054	0.486
Ti	0.003	0.003	0.003	0.005	0.003	0.003	0.111
Fe	0.374	0.363	0.385	0.384	0.352	0.362	2.175
Mn	0.010	0.009	0.011	0.011	0.013	0.010	0.035
Mg	0.661	0.655	0.665	0.656	0.656	0.657	2.367
Ca	0.883	0.914	0.877	0.880	0.888	0.878	1.835
Na	0.033	0.030	0.030	0.029	0.033	0.030	0.372
K	0.000	0.000	0.000	0.000	0.000	0.000	0.072
Cr	0.002	0.000	0.000	0.000	0.000	0.002	0.007
Total	4.007	4.014	4.008	4.008	3.999	3.997	15.460
Mg/(Mg+Fe)	0.639	0.643	0.633	0.631	0.651	0.646	0.521
Ca Ca	0.460	0.473	0.455	0.458	0.468	0.462	0.288
Mg Na	0.345	0.339	0.345	0.342	0.346	0.347	0.371
Fe K	0.195	0.188	0.200	0.200	0.186	0.190	0.341

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 21603

Mineral	Amph	Amph	Amph	Amph	Amph	FELD	FELD
SiO2	45.02	46.30	45.84	46.52	46.09	47.19	49.98
TiO2	1.25	1.06	1.02	0.98	1.04	0.00	0.00
Al2O3	10.19	9.48	9.75	9.46	9.43	35.14	33.03
FeO	17.62	17.61	17.99	18.40	17.75	0.04	0.04
MnO	0.18	0.26	0.26	0.29	0.25	0.00	0.00
HgO	9.89	10.97	10.57	10.90	11.09	0.00	0.00
CaO	11.94	11.48	11.41	11.21	11.53	18.08	16.13
Na2O	1.53	1.47	1.42	1.36	1.31	1.33	2.46
K2O	0.52	0.35	0.41	0.38	0.36	0.00	0.00
Cr2O3	0.09	0.00	0.12	0.08	0.00	0.00	0.00
Total	98.23	98.98	98.79	99.58	98.85	101.78	101.64

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	32.	32.
Si	6.711	6.817	6.781	6.824	6.801	8.521	8.982
Al iv	1.289	1.183	1.219	1.176	1.199	7.480	6.998
Al vi	0.502	0.463	0.481	0.460	0.442	0.000	0.000
Ti	0.140	0.117	0.113	0.108	0.115	0.000	0.000
Fe	2.197	2.168	2.226	2.257	2.191	0.006	0.006
Mn	0.023	0.032	0.033	0.036	0.031	0.000	0.000
Hg	2.197	2.407	2.330	2.383	2.439	0.000	0.000
Ca	1.907	1.811	1.809	1.762	1.823	3.498	3.106
Na	0.442	0.420	0.407	0.387	0.375	0.466	0.857
K	0.099	0.066	0.077	0.071	0.068	0.000	0.000
Cr	0.011	0.000	0.014	0.009	0.000	0.000	0.000
Total	15.518	15.485	15.491	15.474	15.484	19.971	19.948
Hg/Hg+Fe	0.500	0.526	0.511	0.514	0.527	0.000	0.000
Ca Ca	0.303	0.284	0.284	0.275	0.283	0.883	0.784
Hg Na	0.349	0.377	0.366	0.372	0.378	0.117	0.216
Fe K	0.349	0.340	0.350	0.353	0.339	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 21603

Mineral	FELD	FELD	FELD	FELD
SiO2	47.20	47.14	46.96	47.58
TiO2	0.00	0.00	0.00	0.00
Al2O3	34.39	34.03	34.28	34.64
FeO	0.16	0.08	0.05	0.08
MnO	0.05	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00
CaO	18.12	17.65	18.04	17.88
Na2O	1.36	1.66	1.36	1.39
K2O	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00
Total	101.28	100.58	100.69	101.57

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	8.576	8.619	8.576	8.603
Al iv	7.366	7.332	7.380	7.383
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.024	0.012	0.008	0.012
Mn	0.008	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000
Ca	3.528	3.456	3.530	3.464
Na	0.479	0.588	0.482	0.487
K	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000
Total	19.981	20.009	19.975	19.949
Hg/Hg+Fe	0.000	0.000	0.000	0.000
Ca Ca	0.880	0.855	0.880	0.877
Hg Na	0.120	0.145	0.120	0.123
Fe K	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 21902

Mineral	Bi	Bi	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	34.32	34.40	60.90	58.60	59.49	60.22
TiO2	2.90	2.85	0.00	0.00	0.00	0.00
Al2O3	17.37	17.73	25.21	24.48	24.87	23.84
FeO	22.04	21.72	0.00	0.00	0.00	0.00
MnO	0.17	0.20	0.00	0.00	0.00	0.00
HgO	8.66	8.49	0.00	0.00	0.00	0.00
CaO	0.00	0.00	6.59	6.53	6.64	5.62
Na2O	0.05	0.13	7.96	7.59	7.69	8.19
K2O	9.64	9.58	0.12	0.12	0.14	0.15
Cr2O3	0.11	0.08	0.00	0.00	0.00	0.00
Total	95.26	95.18	100.78	97.32	98.83	98.02

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.
Si	5.335	5.339	10.753	10.720	10.718	10.908
Al iv	2.665	2.661	5.248	5.280	5.282	5.091
Al vi	0.518	0.582	0.000	0.000	0.000	0.000
Ti	0.339	0.333	0.000	0.000	0.000	0.000
Fe	2.865	2.819	0.000	0.000	0.000	0.000
Mn	0.022	0.026	0.000	0.000	0.000	0.000
Mg	2.006	1.964	0.000	0.000	0.000	0.000
Ca	0.000	0.000	1.247	1.280	1.282	1.091
Na	0.015	0.039	2.725	2.692	2.686	2.877
K	1.912	1.897	0.027	0.028	0.032	0.035
Cr	0.014	0.010	0.000	0.000	0.000	0.000
Total	15.691	15.670	19.999	20.000	20.000	20.002
Hg/Hg+Fe	0.412	0.411	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.312	0.320	0.320	0.273
Hg Na	0.000	0.000	0.681	0.673	0.672	0.719
Fe K	0.000	0.000	0.007	0.007	0.008	0.009

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 22101

Mineral	Spinel	Spinel	Amph	Amph	Amph	Amph	Amph
SiO2	0.00	0.00	46.11	45.60	45.41	45.35	45.59
TiO2	0.00	0.00	0.25	0.32	0.37	0.32	0.35
Al2O3	33.46	35.29	13.06	13.34	13.34	12.79	13.57
FeO	30.16	30.00	7.35	7.11	7.42	7.09	7.36
MnO	0.34	0.36	0.12	0.09	0.12	0.08	0.15
HgO	7.71	8.36	17.20	16.71	17.08	17.16	16.62
CaO	0.00	0.00	11.82	11.39	11.39	11.30	11.09
Na2O	0.00	0.00	1.57	1.64	1.76	1.54	1.72
K2O	0.00	0.00	0.24	0.28	0.24	0.22	0.31
Cr2O3	27.08	24.88	0.88	1.11	0.25	0.39	0.97
Total	98.75	98.89	98.60	97.59	97.38	96.24	97.73

Structural Formula

NO.OX.	8.	8.	23.	23.	23.	23.	23.
Si	0.000	0.000	6.508	6.495	6.484	6.536	6.487
Mg ^{iv}	0.000	0.000	1.492	1.505	1.516	1.464	1.513
Al ^{vi}	2.460	2.565	0.681	0.735	0.729	0.710	0.763
Ti	0.000	0.000	0.027	0.034	0.040	0.035	0.037
Fe	1.573	1.547	0.868	0.847	0.886	0.855	0.876
Mn	0.018	0.019	0.014	0.011	0.015	0.010	0.018
Hg	0.717	0.768	3.618	3.547	3.634	3.686	3.524
Ca	0.000	0.000	1.788	1.738	1.743	1.745	1.691
Na	0.000	0.000	0.430	0.453	0.487	0.430	0.475
K	0.000	0.000	0.043	0.051	0.044	0.040	0.056
Cr	1.335	1.213	0.098	0.125	0.028	0.044	0.109
Total	6.102	6.111	15.566	15.541	15.605	15.555	15.549
Hg/Hg+Fe	0.313	0.332	0.807	0.807	0.804	0.812	0.801
Ca Ca	0.000	0.000	0.285	0.283	0.278	0.278	0.278
Hg Na	0.000	0.000	0.577	0.578	0.580	0.586	0.579
Fe K	0.000	0.000	0.138	0.138	0.141	0.136	0.144

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 22101

Mineral	FELD	FELD	FELD	FELD
SiO2	43.73	43.91	42.94	43.95
TiO2	0.00	0.00	0.00	0.00
Al2O3	35.99	36.31	35.69	35.60
FeO	0.04	0.10	0.10	0.12
MnO	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00
CaO	19.64	19.52	19.05	18.83
Na2O	0.30	0.32	0.32	0.34
K2O	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00
Total	99.70	100.16	98.10	98.84

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	8.113	8.106	8.092	8.202
Al iv	7.872	7.902	7.929	7.833
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.006	0.015	0.016	0.019
Mn	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000
Ca	3.904	3.861	3.847	3.766
Na	0.108	0.115	0.117	0.123
K	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000
Total	20.004	20.000	20.001	19.943
Hg/Hg+Fe	0.000	0.000	0.000	0.000
Ca Ca	0.973	0.971	0.970	0.968
Hg Na	0.027	0.029	0.030	0.032
Fe K	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 22102

Mineral	Spinel	Spinel	Spinel	Px	Px	Amph	Amph
SiO2	0.00	0.08	0.07	54.52	53.52	47.23	45.35
TiO2	0.00	0.00	0.00	0.00	0.00	0.05	0.00
Al2O3	61.37	60.26	62.58	4.97	4.93	14.41	14.48
FeO	16.99	18.52	16.75	10.60	10.55	5.20	5.95
MnO	0.05	0.15	0.07	0.21	0.20	0.19	0.05
HgO	17.83	16.80	18.14	31.67	31.40	17.63	17.49
CaO	0.00	0.00	0.00	0.10	0.18	11.55	11.22
Na2O	0.00	0.00	0.00	0.00	0.00	1.39	1.71
K2O	0.00	0.00	0.00	0.00	0.00	0.14	0.11
Cr2O3	4.10	5.05	3.15	0.00	0.00	0.07	0.12
Total	100.34	100.86	100.76	102.07	100.78	97.86	96.48

Structural Formula

NO.OX.	8.	8.	8.	6.	6.	23.	23.
Si	0.000	0.004	0.004	1.878	1.870	6.596	6.467
Al ^{iv}	0.000	0.000	0.000	0.122	0.130	1.404	1.533
Al ^{vi}	3.753	3.706	3.792	0.080	0.073	0.968	0.902
Ti	0.000	0.000	0.000	0.000	0.000	0.005	0.000
Fe	0.737	0.808	0.720	0.305	0.308	0.607	0.710
Mn	0.002	0.007	0.003	0.006	0.006	0.022	0.006
Hg	1.378	1.306	1.390	1.626	1.635	3.669	3.717
Ca	0.000	0.000	0.000	0.004	0.007	1.728	1.714
Na	0.000	0.000	0.000	0.000	0.000	0.376	0.473
K	0.000	0.000	0.000	0.000	0.000	0.025	0.020
Cr	0.168	0.208	0.128	0.000	0.000	0.008	0.014
Total	6.039	6.039	6.036	4.021	4.029	15.410	15.555
Hg/Mg+Fe	0.652	0.618	0.659	0.842	0.841	0.858	0.840
Ca Ca	0.000	0.000	0.000	0.002	0.003	0.288	0.279
Hg Na	0.000	0.000	0.000	0.840	0.838	0.611	0.605
Fe K	0.000	0.000	0.000	0.158	0.158	0.101	0.116

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 22102

Mineral	FELD
SiO2	43.58
TiO2	0.00
Al2O3	36.08
FeO	0.04
MnO	0.00
MgO	0.00
CaO	19.03
Na2O	0.19
K2O	0.00
Cr2O3	0.00
Total	98.92

Structural Formula

NO.OX.	32.
Si	8.128
Al iv	7.933
Al vi	0.000
Ti	0.000
Fe	0.006
Mn	0.000
Mg	0.000
Ca	3.803
Na	0.069
K	0.000
Cr	0.000
Total	19.939

Mg/Mg+Fe 0.000

Ca Ca	0.982
Mg Na	0.018
Fe K	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 22105

Mineral	Px	Px	Px	Px	Amph	Amph	Gar
SiO2	49.71	49.93	49.91	49.62	38.54	40.19	38.13
TiO2	0.26	0.12	0.17	0.21	1.19	1.22	0.00
Al2O3	2.08	1.91	1.84	2.18	14.26	12.12	20.36
FeO	18.91	18.67	20.12	20.08	26.66	25.92	27.23
MnO	0.72	0.57	0.89	0.86	0.23	0.49	3.99
MgO	6.21	6.16	5.90	6.15	2.49	3.60	1.38
CaO	21.94	22.03	21.33	21.08	11.51	11.15	9.72
Na2O	0.39	0.37	0.37	0.40	1.01	0.99	0.00
K2O	0.00	0.00	0.00	0.00	1.89	1.53	0.00
Cr2O3	0.07	0.00	0.08	0.00	0.00	0.00	0.00
Total	100.29	99.76	100.61	100.58	97.78	97.21	100.81

Structural Formula

NO.OX.	6.	6.	6.	6.	23.	23.	12.
Si	1.948	1.962	1.957	1.945	6.121	6.375	3.032
Al ^{iv}	0.052	0.038	0.043	0.055	1.879	1.625	0.000
Al ^{vi}	0.044	0.051	0.042	0.046	0.792	0.642	1.909
Ti	0.008	0.004	0.005	0.006	0.142	0.146	0.000
Fe	0.620	0.614	0.660	0.658	3.541	3.439	1.811
Mn	0.024	0.019	0.030	0.029	0.031	0.066	0.269
Mg	0.363	0.361	0.345	0.359	0.589	0.851	0.164
Ca	0.921	0.928	0.896	0.885	1.959	1.895	0.828
Na	0.030	0.028	0.028	0.030	0.311	0.305	0.000
K	0.000	0.000	0.000	0.000	0.383	0.310	0.000
Cr	0.002	0.000	0.002	0.000	0.000	0.000	0.000
Total	4.010	4.004	4.008	4.014	15.740	15.653	8.013
Mg/Mg+Fe	0.369	0.370	0.343	0.353	0.143	0.198	0.083
Ca Ca	0.484	0.488	0.471	0.465	0.322	0.306	0.000
Mg Na	0.191	0.190	0.181	0.189	0.097	0.138	0.000
Fe K	0.326	0.323	0.347	0.346	0.582	0.556	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 22105

Mineral	Gar	Gar	FELD	FELD	FELD	FELD	FELD
SiO2	38.01	38.48	56.37	56.72	57.49	57.64	58.05
TiO2	0.05	0.07	0.00	0.00	0.00	0.00	0.00
Al2O3	20.51	20.54	27.87	27.98	27.36	27.28	27.18
FeO	26.17	27.08	0.13	0.08	0.10	0.13	0.06
MnO	4.01	3.93	0.00	0.00	0.00	0.00	0.00
HgO	1.32	1.45	0.00	0.00	0.00	0.05	0.00
CaO	10.21	9.73	9.87	10.16	9.54	9.32	9.29
Na2O	0.05	0.00	5.86	5.86	5.81	6.04	6.09
K2O	0.00	0.00	0.10	0.09	0.17	0.27	0.13
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.33	101.28	100.20	100.89	100.47	100.73	100.80

Structural Formula

NO.OX.	12.	12.	32.	32.	32.	32.	32.
Si	3.029	3.039	10.108	10.105	10.254	10.263	10.311
Al iv	0.000	0.000	5.892	5.877	5.753	5.726	5.692
Al vi	1.927	1.912	0.000	0.000	0.000	0.000	0.000
Ti	0.003	0.004	0.000	0.000	0.000	0.000	0.000
Fe	1.744	1.789	0.019	0.012	0.015	0.019	0.009
Mn	0.271	0.263	0.000	0.000	0.000	0.000	0.000
Hg	0.157	0.171	0.000	0.000	0.000	0.013	0.000
Ca	0.872	0.823	1.896	1.940	1.823	1.778	1.768
Na	0.008	0.000	2.038	2.024	2.009	2.085	2.097
K	0.000	0.000	0.023	0.020	0.039	0.061	0.029
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	8.009	8.001	19.976	19.979	19.893	19.947	19.907
Hg/Hg+Fe	0.082	0.087	0.000	0.000	0.000	0.407	0.000
Ca Ca	0.000	0.000	0.479	0.487	0.471	0.453	0.454
Hg Na	0.000	0.000	0.515	0.508	0.519	0.531	0.538
Fe K	0.000	0.000	0.006	0.005	0.010	0.016	0.008

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample : 30608

Mineral	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	63.29	65.97	64.09	65.74	62.35
TiO2	0.00	0.00	0.00	0.00	0.00
Al2O3	18.44	18.66	18.53	18.83	18.13
FeO	0.00	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00
CaO	0.45	0.00	0.33	0.19	0.41
Na2O	10.66	0.40	10.88	0.32	10.51
K2O	0.10	16.68	0.04	16.62	0.09
Cr2O3	0.00	0.00	0.00	0.00	0.00
Total	92.94	101.71	93.87	101.70	91.49

Structural Formula

NO.OX.	32.	32.	32.	32.	32.
Si	11.909	11.997	11.932	11.960	11.915
Al iv	4.090	4.001	4.067	4.039	4.085
Al vi	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000
Ca	0.091	0.000	0.066	0.037	0.084
Na	3.889	0.141	3.928	0.113	3.895
K	0.024	3.870	0.010	3.858	0.022
Cr	0.000	0.000	0.000	0.000	0.000
Total	20.003	20.008	20.003	20.006	20.000
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.023	0.000	0.016	0.009	0.021
Hg Na	0.971	0.035	0.981	0.028	0.974
Fe K	0.006	0.965	0.002	0.963	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 30706

Mineral	Bi	Bi	Bi	Bi	Bi	Bi	Bi
SiO2	38.66	37.45	39.00	38.58	38.59	38.40	38.39
TiO2	1.50	1.52	1.52	1.68	1.57	1.29	1.28
Al2O3	13.27	13.32	13.59	13.74	13.91	12.90	13.76
FeO	19.15	18.78	19.69	19.21	19.67	17.00	18.43
MnO	0.23	0.14	0.26	0.25	0.26	0.27	0.31
HgO	12.34	12.03	12.77	12.22	12.33	13.55	12.88
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na2O	0.00	0.09	0.05	0.00	0.07	0.06	0.00
K2O	9.62	9.87	9.83	9.82	9.68	9.90	9.84
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F	1.72	2.10	2.13	2.51	2.60	2.52	2.67
Total	96.49	95.30	98.84	98.01	98.68	95.89	97.56

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	22.	22.
Si	5.915	5.848	5.862	5.864	5.838	5.926	5.858
Al iv	2.085	2.152	2.138	2.136	2.162	2.074	2.142
Al vi	0.309	0.301	0.271	0.326	0.319	0.272	0.333
Ti	0.173	0.179	0.172	0.192	0.179	0.150	0.147
Fe	2.451	2.453	2.475	2.442	2.489	2.194	2.352
Mn	0.030	0.019	0.033	0.032	0.033	0.035	0.040
Hg	2.814	2.800	2.661	2.768	2.780	3.116	2.929
Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Na	0.000	0.027	0.015	0.000	0.021	0.018	0.000
K	1.878	1.966	1.885	1.904	1.868	1.949	1.915
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.654	15.744	15.711	15.665	15.688	15.735	15.716
Hg/Hg+Fe	0.535	0.533	0.536	0.531	0.528	0.587	0.555
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 30706

Mineral	Bi	FELD	FELD	FELD	.FELD	FELD	FELD
SiO2	39.57	70.17	70.31	65.54	82.37	67.00	65.60
TiO2	1.23	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	13.80	19.71	19.58	18.26	10.21	18.79	18.05
FeO	18.85	0.16	0.01	0.00	0.00	0.03	0.00
MnO	3.29	0.00	0.00	0.00	0.07	0.00	0.00
HgO	13.31	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.33	0.00	0.00	0.00	0.00	0.00
Na2O	0.00	11.15	11.66	0.35	0.15	0.36	1.04
K2O	9.70	0.07	0.06	15.82	8.74	16.61	15.52
Cr2O3	0.00	0.00	0.00	0.00	0.07	0.00	0.08
F	2.39	0.00	0.00	0.00	0.00	0.11	0.15
Total	99.14	101.59	101.62	99.97	101.61	102.90	100.44

Structural Formula

NO.OX.	22.	32.	32.	32.	32.	32.	32.
Si	5.905	12.038	12.058	12.067	13.972	12.032	12.056
Al iv	2.095	0.023	0.001	0.000	0.000	0.005	0.000
Al vi	0.333	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.138	0.000	0.000	0.000	0.000	0.000	0.000
Fe	2.352	0.023	0.001	0.000	0.000	0.005	0.000
Mn	0.037	0.000	0.000	0.000	0.010	0.000	0.000
Hg	2.960	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.061	0.000	0.000	0.000	0.000	0.000
Na	0.000	3.709	3.877	0.125	0.049	0.125	0.371
K	1.847	0.015	0.013	3.716	1.891	3.805	3.639
Cr	0.000	0.000	0.000	0.000	0.009	0.000	0.012
Total	15.667	19.831	19.908	19.872	17.973	19.945	19.988
Hg/Hg+Fe	0.557	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.016	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.980	0.997	0.033	0.025	0.032	0.092
Fe K	0.000	0.004	0.003	0.967	0.975	0.968	0.908

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 30706

Mineral	FELD	FELD	FELD
SiO2	70.28	66.53	70.44
TiO2	0.00	0.00	0.00
Al2O3	19.93	18.49	18.85
FeO	0.04	0.00	0.02
MnO	0.00	0.07	0.00
HgO	0.00	0.00	0.00
CaO	0.13	0.08	0.12
Na2O	11.79	3.09	9.05
K2O	0.00	12.08	3.39
Cr2O3	0.08	0.00	0.00
F	0.10	0.00	0.20
Total	102.35	100.34	102.07

Structural Formula

NO.OX.	32.	32.	32.
Si	11.994	12.055	12.165
Al iv	0.000	0.011	0.000
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.006	0.000	0.003
Mn	0.000	0.011	0.000
Hg	0.000	0.000	0.000
Ca	0.024	0.016	0.022
Na	3.902	1.086	3.030
K	0.000	2.793	0.747
Cr	0.011	0.000	0.000
Total	19.946	19.909	19.805
Hg/Hg+Fe	0.000	0.000	0.000
Ca Ca	0.006	0.004	0.006
Hg Na	0.994	0.279	0.798
Fe K	0.000	0.717	0.197

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 30802

Mineral	Feld(3)	Feld(3)	Feld(3)
SiO2	65.42	64.34	62.36
TiO2	0.00	0.00	0.00
Al2O3	18.50	18.20	17.86
FeO	0.00	0.00	0.00
MnO	0.00	0.00	0.00
MgO	0.00	0.00	0.00
CaO	0.00	0.00	0.19
Na2O	0.42	0.36	2.96
K2O	16.50	16.31	11.72
Cr2O3	0.00	0.00	0.00
Total	100.84	99.21	95.09

Structural Formula

NO.OX.	32.	32.	32.
Si	11.998	11.997	11.960
Al iv	4.000	4.001	4.038
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.000	0.000	0.000
Mn	0.000	0.000	0.000
Mg	0.000	0.000	0.000
Ca	0.000	0.000	0.039
Na	0.149	0.130	1.101
K	3.861	3.880	2.868
Cr	0.000	0.000	0.000
Total	20.007	20.008	20.005
Hg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.010
Mg Na	0.037	0.032	0.275
Fe K	0.963	0.968	0.716

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEDL JXA-5A)

Sample 31501A

Mineral	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	66.42	65.95	66.60	65.94	65.69
TiO2	0.00	0.00	0.00	0.00	0.00
Al2O3	18.78	18.65	18.83	18.65	18.58
FeO	0.00	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	0.00	0.00
Na2O	0.34	0.41	0.52	0.38	0.28
K2O	16.87	16.64	16.66	16.70	16.78
Cr2O3	0.00	0.00	0.00	0.00	0.00
Total	102.41	101.65	102.61	101.67	101.33

Structural Formula

NO.OX.	32.	32.	32.	32.	32.
Si	11.999	11.998	11.998	11.997	11.997
Al iv	4.000	4.000	3.999	4.000	4.001
Al vi	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	0.000	0.000
Na	0.119	0.145	0.182	0.134	0.099
K	3.888	3.862	3.829	3.876	3.910
Cr	0.000	0.000	0.000	0.000	0.000
Total	20.005	20.005	20.008	20.008	20.007
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000
Mg Na	0.030	0.036	0.045	0.033	0.025
Fe K	0.970	0.964	0.955	0.967	0.975

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 32903A

Mineral	Anph	Anph'	Bi	Bi	Epi	FELD	FELD
SiO ₂	44.03	44.24	37.48	37.40	37.13	57.14	57.13
TiO ₂	1.07	0.63	1.79	1.55	0.09	0.01	0.00
Al ₂ O ₃	10.35	10.79	16.75	16.75	23.52	26.48	26.20
FeO	17.05	16.05	15.68	14.99	11.15	0.08	0.01
MnO	0.21	0.21	0.12	0.05	0.30	0.05	0.04
HgO	10.69	10.93	13.80	14.14	0.00	0.00	0.00
CaO	11.29	11.43	0.00	0.00	22.46	8.44	7.82
Na ₂ O	1.45	1.44	0.23	0.27	0.03	6.97	7.17
K ₂ O	0.73	0.69	9.13	8.98	0.03	0.03	0.04
Cr ₂ O ₃	0.00	0.07	0.00	0.11	0.04	0.02	0.02
Total	96.87	96.48	94.98	94.24	94.75	99.22	98.43

Structural Formula

NO.OX.	23.	23.	22.	22.	25.	32.	32.
Si	6.649	6.669	5.605	5.615	6.200	10.326	10.386
Al ^{iv}	1.351	1.331	2.395	2.385	0.000	5.641	5.615
Al ^{vi}	0.491	0.587	0.559	0.580	4.630	0.000	0.000
Ti	0.122	0.071	0.201	0.175	0.011	0.001	0.000
Fe	2.153	2.024	1.961	1.882	1.557	0.012	0.002
Mn	0.027	0.027	0.015	0.006	0.042	0.008	0.006
Hg	2.406	2.456	3.076	3.164	0.000	0.000	0.000
Ca	1.827	1.846	0.000	0.000	4.018	1.634	1.523
Na	0.425	0.421	0.067	0.079	0.010	2.442	2.528
K	0.141	0.133	1.742	1.720	0.006	0.007	0.009
Cr	0.000	0.008	0.000	0.013	0.005	0.003	0.003
Total	15.591	15.573	15.621	15.620	16.480	20.075	20.073
Hg/Hg+Fe	0.528	0.548	0.611	0.627	0.000	0.000	0.000
Ca Ca	0.286	0.292	0.000	0.000	0.000	0.400	0.375
Hg Na	0.377	0.388	0.000	0.000	0.000	0.598	0.623
Fe K	0.337	0.320	0.000	0.000	0.000	0.002	0.002

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 32903A

Mineral	FELD	FELD
SiO2	58.13	56.99
TiO2	0.06	0.02
Al2O3	25.76	26.42
FeO	0.03	0.10
MnO	0.00	0.00
MgO	0.00	0.00
CaO	7.74	8.66
Na2O	7.00	6.78
K2O	0.02	0.05
Cr2O3	0.04	0.00
Total	98.78	99.02

Structural Formula

NO.OX.	32.	32.
Si	10.505	10.321
Al iv	5.488	5.641
Al vi	0.000	0.000
Ti	0.008	0.003
Fe	0.005	0.015
Mn	0.000	0.000
Mg	0.000	0.000
Ca	1.499	1.680
Na	2.453	2.381
K	0.005	0.012
Cr	0.006	0.000
Total	19.968	20.052
Mg/Mg+Fe	0.000	0.000
Ca Ca	0.379	0.413
Mg Na	0.620	0.585
Fe K	0.001	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40201

Mineral	Px	Px	Px	Px	Px	Px	Px
SiO2	52.98	53.21	52.69	53.07	53.36	52.91	53.01
TiO2	0.00	0.00	0.25	0.25	0.00	0.16	0.08
Al2O3	0.90	0.88	1.93	1.85	0.88	1.38	0.93
FeO	24.54	24.01	8.88	8.83	24.06	8.46	24.30
MnO	0.46	0.67	0.14	0.28	0.54	0.28	0.48
MgO	21.24	21.69	14.11	13.95	21.41	14.43	21.12
CaO	0.42	0.42	20.84	20.36	0.51	21.31	0.59
Na2O	0.00	0.00	0.29	0.29	0.00	0.29	0.00
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.06	0.00	0.09	0.00	0.00	0.00
Total	100.54	100.94	99.13	98.97	100.76	99.22	100.51

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	6.
Si	1.980	1.977	1.972	1.985	1.985	1.979	1.980
Al iv	0.020	0.023	0.028	0.015	0.015	0.021	0.020
Al vi	0.019	0.016	0.057	0.067	0.023	0.040	0.021
Ti	0.000	0.000	0.007	0.007	0.000	0.005	0.002
Fe	0.767	0.746	0.278	0.276	0.748	0.265	0.759
Mn	0.015	0.021	0.004	0.009	0.017	0.009	0.015
Mg	1.183	1.201	0.787	0.778	1.187	0.804	1.176
Ca	0.017	0.017	0.836	0.816	0.020	0.854	0.024
Na	0.000	0.000	0.021	0.021	0.000	0.021	0.000
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.002	0.000	0.003	0.000	0.000	0.000
Total	4.000	4.003	3.989	3.976	3.996	3.997	3.997
Mg/Mg+Fe	0.607	0.617	0.739	0.738	0.613	0.752	0.608
Ca Ca	0.009	0.009	0.440	0.436	0.010	0.444	0.012
Mg Na	0.601	0.612	0.414	0.416	0.607	0.418	0.600
Fe K	0.390	0.380	0.146	0.148	0.383	0.138	0.388

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40201

Mineral	Px	Px	Px	Amph	Amph	Amph	Amph
SiO2	52.82	53.19	53.25	48.21	48.29	47.33	47.72
TiO2	0.11	0.00	0.00	1.16	1.30	1.28	1.36
Al2O3	1.77	0.92	0.90	7.97	8.63	8.97	8.77
FeO	8.56	23.91	24.58	12.73	12.48	13.06	12.80
MnO	0.23	0.52	0.52	0.12	0.19	0.17	0.14
HgO	13.99	21.02	21.01	14.69	14.03	13.92	13.79
CaO	21.55	0.57	0.50	11.04	11.46	10.84	11.15
Na2O	0.31	0.00	0.00	0.90	1.04	1.01	1.03
K2O	0.00	0.00	0.00	0.47	0.48	0.51	0.52
Cr2O3	0.00	0.00	0.00	0.14	0.00	0.09	0.00
Total	99.34	100.13	100.76	97.43	97.90	97.18	97.28

Structural Formula

NO.OX.	6.	6.	6.	23.	23.	23.	23.
Si	1.974	1.990	1.985	7.015	6.990	6.921	6.962
Al iv	0.026	0.010	0.015	0.985	1.010	1.079	1.038
Al vi	0.052	0.030	0.025	0.382	0.462	0.467	0.471
Ti	0.003	0.000	0.000	0.127	0.142	0.141	0.149
Fe	0.268	0.748	0.766	1.549	1.511	1.597	1.562
Mn	0.007	0.016	0.016	0.015	0.023	0.021	0.017
Hg	0.779	1.172	1.167	3.186	3.027	3.034	2.998
Ca	0.863	0.023	0.020	1.721	1.777	1.698	1.743
Na	0.022	0.000	0.000	0.254	0.292	0.286	0.291
K	0.000	0.000	0.000	0.087	0.089	0.095	0.097
Cr	0.000	0.000	0.000	0.016	0.000	0.010	0.000
Total	3.995	3.990	3.995	15.337	15.323	15.351	15.329
Hg/Hg+Fe	0.744	0.610	0.604	0.673	0.667	0.655	0.658
Ca Ca	0.452	0.012	0.010	0.267	0.281	0.268	0.277
Hg Na	0.408	0.603	0.598	0.493	0.479	0.479	0.476
Fe K	0.140	0.385	0.392	0.240	0.239	0.252	0.248

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40201

Mineral	Amph	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	47.45	47.69	47.74	50.76	51.13	52.75	48.68
TiO2	1.43	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	8.88	33.53	33.61	31.90	31.75	30.34	32.96
FeO	13.17	0.09	0.11	0.14	0.07	0.15	0.05
MnO	0.13	0.00	0.00	0.00	0.00	0.00	0.00
MgO	13.84	0.00	0.00	0.00	0.00	0.00	0.00
CaO	11.18	16.51	15.39	13.87	14.09	12.64	15.27
Na2O	0.95	1.89	1.97	3.04	3.22	3.95	2.26
K2O	0.50	0.05	0.00	0.06	0.00	0.06	0.05
Cr2O3	0.22	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.83	99.76	98.82	99.77	100.26	99.89	99.27

Structural Formula

NO.OX.	23.	32.	32.	32.	32.	32.	32.
Si	6.906	8.755	8.810	9.235	9.260	9.553	8.939
Al iv	1.094	7.257	7.312	6.842	6.779	6.478	7.135
Al vi	0.429	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.157	0.000	0.000	0.000	0.000	0.000	0.000
Fe	1.603	0.014	0.017	0.021	0.011	0.023	0.008
Mn	0.016	0.000	0.000	0.000	0.000	0.000	0.000
Mg	3.002	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.743	3.248	3.043	2.704	2.734	2.453	3.004
Na	0.268	0.673	0.705	1.072	1.131	1.387	0.805
K	0.108	0.012	0.000	0.014	0.000	0.014	0.012
Cr	0.025	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.351	19.958	19.887	19.888	19.915	19.908	19.902
Hg/Hg+Fe	0.652	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.275	0.826	0.812	0.713	0.707	0.636	0.786
Mg Na	0.473	0.171	0.188	0.283	0.293	0.360	0.211
Fe K	0.253	0.003	0.000	0.004	0.000	0.004	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40201

Mineral	FELD
SiO2	49.83
TiO2	0.37
Al2O3	31.59
FeO	0.56
MnO	0.00
MgO	0.00
CaO	15.33
Na2O	2.74
K2O	0.00
Cr2O3	0.00
Total	100.42

Structural Formula

NO.OX.	* 32.
Si	9.079
Al iv	6.786
Al vi	0.000
Ti	0.051
Fe	0.085
Mn	0.000
Mg	0.000
Ca	2.993
Na	0.968
K	0.000
Cr	0.000

Total 19.961

Mg/Mg+Fe 0.000

Ca Ca	0.756
Mg Na	0.244
Fe K	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40204

Mineral	Px	Px	Px	Px ₂	Px	Px	Px
SiO2	50.02	49.58	50.64	49.65	49.54	50.16	50.30
TiO2	0.00	0.06	0.00	0.10	0.06	0.00	0.13
Al2O3	3.26	3.40	3.57	3.50	3.51	3.21	3.43
FeO	28.56	28.58	29.05	29.02	28.19	29.21	28.75
MnO	0.09	0.13	0.10	0.11	0.18	0.12	0.22
HgO	17.87	17.77	18.04	17.79	17.45	17.89	17.54
CaO	0.11	0.19	0.15	0.15	0.14	0.14	0.17
Na2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.10	0.00	0.00	0.00	0.00	0.00	0.09
Total	100.01	99.71	101.55	100.32	99.07	100.73	100.63

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	6.
Si	1.916	1.907	1.911	1.901	1.914	1.913	1.916
Al iv	0.084	0.093	0.089	0.099	0.086	0.087	0.084
Al vi	0.063	0.062	0.070	0.059	0.074	0.057	0.070
Ti	0.000	0.002	0.000	0.003	0.002	0.000	0.004
Fe	0.915	0.920	0.917	0.929	0.911	0.932	0.916
Mn	0.003	0.004	0.003	0.004	0.006	0.004	0.007
Hg	1.020	1.019	1.014	1.015	1.005	1.017	0.996
Ca	0.005	0.008	0.006	0.006	0.006	0.006	0.007
Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.003	0.000	0.000	0.000	0.000	0.000	0.003
Total	4.009	4.014	4.010	4.017	4.004	4.015	4.002
Hg/Hg+Fe	0.527	0.526	0.525	0.522	0.525	0.522	0.521
Ca Ca	0.002	0.004	0.003	0.003	0.003	0.003	0.004
Hg Na	0.526	0.523	0.524	0.520	0.523	0.520	0.519
Fe K	0.472	0.472	0.473	0.476	0.474	0.477	0.477

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40204

Mineral	Anph	Anph	Anph	Anph	Anph	Bi	Bi
SiO2	52.12	48.64	51.60	53.54	52.49	36.83	36.54
TiO2	0.15	0.40	0.15	0.07	0.05	2.32	2.46
Al2O3	3.94	8.38	4.98	3.45	4.06	17.14	17.84
FeO	22.58	22.72	23.41	23.85	22.49	16.08	16.03
MnO	0.12	0.09	0.09	0.00	0.15	0.07	0.00
MgO	17.56	15.49	16.86	17.70	18.37	13.32	13.18
CaO	0.40	0.51	0.44	0.41	0.28	0.00	0.00
Na2O	0.39	0.91	0.46	0.39	0.32	0.14	0.13
K2O	0.00	0.00	0.00	0.00	0.00	8.58	8.91
Cr2O3	0.00	0.06	0.00	0.00	0.10	0.08	0.00
Total	97.26	97.20	97.99	99.41	98.31	94.56	95.09

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	22.	22.
Si	7.616	7.155	7.515	7.676	7.580	5.530	5.462
Al _{iv}	0.384	0.845	0.485	0.324	0.420	2.470	2.538
Al _{vi}	0.295	0.608	0.370	0.259	0.271	0.564	0.605
Ti	0.016	0.044	0.016	0.008	0.005	0.262	0.277
Fe	2.760	2.795	2.851	2.860	2.716	2.019	2.004
Mn	0.015	0.011	0.011	0.000	0.018	0.009	0.000
Mg	3.824	3.396	3.659	3.782	3.953	2.981	2.936
Ca	0.063	0.080	0.069	0.063	0.043	0.000	0.000
Na	0.111	0.260	0.130	0.108	0.090	0.041	0.038
K	0.000	0.000	0.000	0.000	0.000	1.644	1.699
Cr	0.000	0.007	0.000	0.000	0.011	0.009	0.000
Total	15.083	15.201	15.106	15.079	15.108	15.528	15.558
Mg/Mg+Fe	0.581	0.549	0.562	0.569	0.593	0.596	0.594
Ca _{Ca}	0.009	0.013	0.010	0.009	0.006	0.000	0.000
Mg _{Na}	0.575	0.541	0.556	0.564	0.589	0.000	0.000
Fe _K	0.415	0.446	0.433	0.427	0.405	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40204

Mineral	Bi	Bi	Bi	Bi	Bi	Gar	Gar
SiO2	36.97	36.84	37.63	36.96	36.59	39.46	39.61
TiO2	2.44	2.24	2.25	2.24	2.41	0.05	0.06
Al2O3	17.28	16.98	17.57	16.91	17.14	21.57	22.02
FeO	15.51	15.11	16.29	14.96	16.46	30.95	30.11
MnO	0.00	0.00	0.00	0.00	0.00	0.49	0.37
MgO	14.00	14.18	14.00	14.05	13.05	6.60	7.03
CaO	0.00	0.00	0.00	0.00	0.00	2.22	2.20
Na2O	0.11	0.17	0.11	0.12	0.14	0.00	0.00
K2O	8.35	8.51	8.61	8.78	8.21	0.00	0.00
Cr2O3	0.12	0.15	0.07	0.00	0.08	0.15	0.00
Total	94.78	94.18	96.53	94.02	94.08	101.49	101.40

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	12.	12.
Si	5.511	5.528	5.523	5.556	5.521	3.039	3.036
Al iv	2.489	2.472	2.477	2.444	2.479	0.000	0.000
Al vi	0.548	0.532	0.564	0.552	0.570	1.958	1.990
Ti	0.274	0.253	0.248	0.253	0.273	0.003	0.003
Fe	1.934	1.896	2.000	1.881	2.077	1.993	1.930
Mn	0.000	0.000	0.000	0.000	0.000	0.032	0.024
Mg	3.110	3.171	3.062	3.147	2.935	0.757	0.803
Ca	0.000	0.000	0.000	0.000	0.000	0.183	0.181
Na	0.032	0.049	0.031	0.035	0.041	0.000	0.000
K	1.588	1.629	1.612	1.684	1.581	0.000	0.000
Cr	0.014	0.018	0.008	0.000	0.010	0.009	0.000
Total	15.500	15.548	15.526	15.552	15.487	7.975	7.966
Mg/Mg+Fe	0.617	0.626	0.605	0.626	0.586	0.275	0.294
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40204

Mineral	Gar	Gar	Gar	FELD	FELD	FELD	FELD
SiO2	38.91	39.43	38.87	55.13	58.31	57.21	57.68
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	21.53	21.80	21.40	27.76	27.18	28.09	27.47
FeO	30.54	30.58	31.42	0.05	0.06	0.07	0.00
MnO	0.44	0.43	0.53	0.00	0.00	0.00	0.00
MgO	7.15	6.99	5.79	0.00	0.00	0.00	0.00
CaO	2.05	2.32	2.48	9.89	8.70	9.63	8.93
Na2O	0.00	0.00	0.00	5.72	6.43	6.00	6.18
K2O	0.00	0.00	0.00	0.08	0.08	0.00	0.05
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.62	101.55	100.49	98.63	100.76	101.00	100.31

Structural Formula

NO.OX.	12.	12.	12.	32.	32.	32.	32.
Si	3.019	3.028	3.037	10.047	10.347	10.154	10.281
Al iv	0.000	0.000	0.000	5.964	5.686	5.878	5.772
Al vi	1.969	1.974	1.971	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	1.982	1.964	2.053	0.008	0.009	0.010	0.000
Mn	0.029	0.028	0.035	0.000	0.000	0.000	0.000
Mg	0.827	0.800	0.674	0.000	0.000	0.000	0.000
Ca	0.170	0.181	0.208	1.931	1.654	1.831	1.706
Na	0.000	0.000	0.000	2.021	2.212	2.065	2.136
K	0.000	0.000	0.000	0.019	0.018	0.000	0.011
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	7.996	7.985	7.978	19.990	19.926	19.939	19.906
Mg/Mg+Fe	0.294	0.289	0.247	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.486	0.426	0.470	0.443
Mg Na	0.000	0.000	0.000	0.509	0.570	0.530	0.554
Fe K	0.000	0.000	0.000	0.005	0.005	0.000	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40204

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	58.02	57.27	57.12	57.41	56.27	58.52	58.77
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	27.11	27.74	27.83	27.06	28.28	26.99	26.94
FeO	0.07	0.10	0.10	0.03	0.07	0.14	0.05
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.90	9.44	9.72	8.85	10.19	9.31	8.72
Na2O	6.31	6.12	6.03	6.23	5.71	6.47	6.57
K2O	0.08	0.08	0.00	0.06	0.06	0.05	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.49	100.75	100.80	99.64	100.58	101.48	101.05

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.329	10.194	10.166	10.306	10.054	10.337	10.394
Al iv	5.690	5.821	5.839	5.727	5.957	5.620	5.617
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.010	0.015	0.015	0.005	0.010	0.021	0.007
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.698	1.800	1.854	1.702	1.951	1.762	1.652
Na	2.178	2.112	2.081	2.169	1.978	2.216	2.253
K	0.018	0.018	0.000	0.014	0.014	0.011	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.924	19.961	19.955	19.922	19.964	19.967	19.924
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.436	0.458	0.471	0.438	0.495	0.442	0.423
Hg Na	0.559	0.537	0.529	0.558	0.502	0.555	0.577
Fe K	0.005	0.005	0.000	0.004	0.003	0.003	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40204

Mineral	FELD
SiO2	55.89
TiO2	0.00
Al2O3	28.56
FeO	0.12
MnO	0.00
MgO	0.00
CaO	10.11
Na2O	5.43
K2O	0.00
Cr2O3	0.00

Total 100.11

Structural Formula

NO.OX. 32.

Si	10.020
Al iv	6.037
Al vi	0.000
Ti	0.000
Fe	0.018
Mn	0.000
Hg	0.000
Ca	1.942
Na	1.888
K	0.000
Cr	0.000

Total 19.905

Hg/Hg+Fe 0.000

Ca Ca	0.507
Hg Na	0.493
Fe K	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40206

Mineral	01	01	01	Px	Px	Px	Amph
SiO2	39.59	38.61	38.24	54.58	53.25	52.42	42.90
TiO2	0.00	0.00	0.00	0.08	0.14	0.26	2.10
Al2O3	0.00	0.00	0.00	2.55	1.59	3.04	12.56
FeO	20.12	19.27	19.99	12.82	12.51	12.80	8.25
MnO	0.22	0.00	0.19	0.06	0.16	0.15	0.08
HgO	40.73	41.65	41.08	28.65	29.32	28.34	15.10
CaO	0.00	0.00	0.00	0.92	1.11	1.08	12.16
Na2O	0.00	0.00	0.00	0.00	0.00	0.00	2.61
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.72
Cr2O3	0.00	0.00	0.00	0.17	0.00	0.00	0.32
Total	100.66	99.53	99.50	99.83	98.08	98.09	97.20

Structural Formula

NO.OX.	4.	4.	4.	6.	6.	6.	23.
Si	1.009	0.994	0.990	1.944	1.936	1.908	6.270
Al iv	0.000	0.000	0.000	0.056	0.064	0.092	1.730
Al vi	0.000	0.000	0.000	0.051	0.004	0.039	0.434
Ti	0.000	0.000	0.000	0.002	0.004	0.007	0.231
Fe	0.429	0.415	0.433	0.382	0.380	0.390	1.057
Mn	0.005	0.000	0.004	0.002	0.005	0.005	0.010
Hg	1.548	1.598	1.584	1.521	1.589	1.537	3.289
Ca	0.000	0.000	0.000	0.035	0.043	0.042	1.904
Na	0.000	0.000	0.000	0.000	0.000	0.000	0.740
K	0.000	0.000	0.000	0.000	0.000	0.000	0.134
Cr	0.000	0.000	0.000	0.005	0.000	0.000	0.037
Total	2.991	3.006	3.010	3.998	4.026	4.020	15.836
Hg/Hg+Fe	0.783	0.794	0.786	0.799	0.807	0.798	0.757
Ca Ca	0.000	0.000	0.000	0.018	0.021	0.021	0.305
Hg Na	0.000	0.000	0.000	0.785	0.789	0.781	0.526
Fe K	0.000	0.000	0.000	0.197	0.189	0.198	0.169

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40206

Mineral	Anph	Anph	Bi
SiO2	44.45	44.31	36.97
TiO2	2.21	2.16	4.17
Al2O3	11.11	11.82	15.23
FeO	7.83	8.09	10.12
MnO	0.07	0.00	0.05
MgO	16.01	15.95	17.50
CaO	12.56	12.33	0.00
Na2O	2.12	2.02	0.21
K2O	0.69	0.89	9.54
Cr2O3	0.22	0.09	0.45
Total	97.27	97.66	94.24

Structural Formula

NO.OX.	23.	23.	22.
Si	6.448	6.403	5.475
Al iv	1.552	1.597	2.525
Al vi	0.348	0.417	0.134
Ti	0.241	0.235	0.464
Fe	0.950	0.978	1.253
Mn	0.009	0.000	0.006
Mg	3.461	3.435	3.862
Ca	1.952	1.909	0.000
Na	0.596	0.566	0.060
K	0.128	0.164	1.802
Cr	0.025	0.010	0.053
Total	15.710	15.715	15.636
Mg/Mg+Fe	0.785	0.778	0.755
Ca Ca	0.307	0.302	0.000
Mg Na	0.544	0.543	0.000
Fe K	0.149	0.155	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 40206

Mineral	O1	O1	O1	O1	Px	Px	Px
SiO2	39.86	39.41	39.10	38.73	55.92	52.66	52.40
TiO2	0.01	0.01	0.09	0.00	0.23	0.36	0.30
Al2O3	0.00	0.04	0.00	0.06	1.68	2.68	2.87
FeO	20.50	19.70	19.89	21.23	12.52	2.87	4.30
MnO	0.22	0.19	0.27	0.27	0.21	0.11	0.15
HgO	42.22	41.87	41.29	41.18	29.42	15.50	16.46
CaO	0.01	0.02	0.01	0.03	1.50	23.67	21.55
Na2O	0.00	0.04	0.00	0.00	0.04	0.35	0.26
K2O	0.00	0.00	0.01	0.00	0.01	0.00	0.02
Cr2O3	0.00	0.08	0.00	0.00	0.09	0.59	0.33
Total	102.82	101.36	100.66	101.50	101.62	98.79	98.64

Structural Formula

NO.OX.	4.	4.	4.	4.	6.	6.	6.
Si	0.997	0.997	0.998	0.987	1.957	1.943	1.937
Al iv	0.000	0.000	0.000	0.000	0.043	0.057	0.063
Al vi	0.000	0.001	0.000	0.002	0.027	0.060	0.062
Ti	0.000	0.000	0.002	0.000	0.006	0.010	0.008
Fe	0.429	0.417	0.424	0.452	0.367	0.089	0.133
Mn	0.005	0.004	0.006	0.006	0.006	0.003	0.005
Hg	1.573	1.579	1.570	1.564	1.535	0.852	0.907
Ca	0.000	0.001	0.000	0.000	0.056	0.936	0.853
Na	0.000	0.002	0.000	0.000	0.003	0.025	0.019
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.002	0.000	0.000	0.002	0.017	0.010
Total	3.003	3.002	3.001	3.012	4.002	3.992	3.997
Hg/Hg+Fe	0.786	0.791	0.787	0.776	0.807	0.906	0.872
Ca: Ca	0.000	0.000	0.000	0.000	0.029	0.499	0.451
Hg Na	0.000	0.000	0.000	0.000	0.784	0.454	0.479
Fe K	0.000	0.000	0.000	0.000	0.187	0.047	0.070

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 40206

Mineral	Anph	Bi
SiO2	45.06	37.77
TiO2	2.02	3.27
Al2O3	11.25	15.73
FeO	8.07	10.35
MnO	0.07	0.05
HgO	16.20	17.88
CaO	12.21	0.00
Na2O	2.00	0.19
K2O	0.77	9.17
Cr2O3	0.12	0.34
Total	97.77	94.75

Structural Formula

NO.OX.	23.	22.
Si	6.491	5.537
Al ^{iv}	1.509	2.463
Al ^{vi}	0.402	0.256
Ti	0.219	0.361
Fe	0.972	1.269
Mn	0.009	0.006
Hg	3.478	3.907
Ca	1.885	0.000
Na	0.559	0.054
K	0.142	1.715
Cr	0.014	0.039
Total	15.678	15.607
Hg/Hg+Fe	0.782	0.755
Ca Ca	0.298	0.000
Hg Na	0.549	0.000
Fe K	0.153	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 40306

Mineral	Bi	Bi	Bi	Gar	Gar	Gar	Gar
SiO2	34.43	35.27	35.17	35.76	36.01	35.74	36.80
TiO2	2.42	2.18	1.95	0.03	0.00	0.00	0.07
Al2O3	16.86	16.97	17.06	20.14	20.39	20.01	20.12
FeO	25.33	25.04	25.34	27.48	27.41	27.45	27.87
MnO	0.55	0.34	0.41	9.79	9.72	9.85	9.71
MgO	5.89	6.50	6.16	1.23	1.05	0.86	0.86
CaO	0.00	0.00	0.00	4.52	4.48	4.28	4.20
Na2O	0.10	0.01	0.05	0.05	0.01	0.07	0.14
K2O	9.76	9.82	9.63	0.02	0.00	0.01	0.00
Cr2O3	0.00	0.06	0.03	0.02	0.03	0.05	0.02
Total	95.34	96.19	95.80	99.04	99.10	98.32	99.79

Structural Formula

NO.OX.	22.	22.	22.	12.	12.	12.	12.
Si	5.447	5.500	5.511	2.955	2.967	2.975	3.009
Al iv	2.553	2.500	2.489	0.000	0.000	0.000	0.000
Al vi	0.591	0.619	0.663	1.962	1.981	1.964	1.939
Ti	0.288	0.256	0.230	0.002	0.000	0.000	0.004
Fe	3.351	3.265	3.321	1.899	1.889	1.911	1.906
Mn	0.074	0.045	0.054	0.685	0.678	0.694	0.673
Mg	1.389	1.510	1.439	0.151	0.129	0.107	0.105
Ca	0.000	0.000	0.000	0.400	0.396	0.382	0.368
Na	0.031	0.003	0.015	0.008	0.002	0.011	0.022
K	1.970	1.954	1.925	0.002	0.000	0.001	0.000
Cr	0.000	0.007	0.004	0.001	0.002	0.003	0.001
Total	15.693	15.660	15.651	8.066	8.043	8.048	8.027
Mg/Mg+Fe	0.293	0.316	0.302	0.074	0.064	0.053	0.052
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 40306

Mineral	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	62.47	65.40	64.18	64.06	63.38	65.26	64.71
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	21.50	22.46	18.15	22.12	22.00	18.45	18.30
FeO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	3.16	3.27	0.00	3.31	3.37	0.00	0.00
Na2O	9.46	9.49	0.71	9.69	9.49	0.70	2.30
K2O	0.19	0.83	15.73	0.16	0.26	16.03	13.44
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	96.78	101.45	98.77	99.34	98.50	100.44	98.75

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	11.382	11.389	11.998	11.371	11.353	11.998	11.998
Al iv	4.618	4.611	4.000	4.629	4.646	3.999	4.000
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.617	0.610	0.000	0.630	0.647	0.000	0.000
Na	3.342	3.205	0.257	3.335	3.296	0.250	0.827
K	0.044	0.184	3.752	0.036	0.059	3.760	3.179
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	20.002	20.000	20.007	20.000	20.002	20.007	20.005
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.154	0.153	0.000	0.157	0.162	0.000	0.000
Hg Na	0.835	0.801	0.064	0.834	0.824	0.062	0.206
Fe K	0.011	0.046	0.936	0.009	0.015	0.938	0.794

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40406

Mineral	Bi	Bi	Bi	FELD	FELD	FELD	FELD
SiO2	37.96	37.99	37.52	61.11	60.84	57.53	60.60
TiO2	2.02	2.02	1.82	0.00	0.00	0.00	0.00
Al2O3	17.16	17.25	17.00	26.04	25.92	28.13	26.19
FeO	17.30	17.44	16.78	0.00	0.00	0.07	0.03
MnO	0.21	0.22	0.28	0.00	0.00	0.00	0.00
HgO	12.21	12.38	12.36	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	7.69	7.58	9.62	7.69
Na2O	0.29	0.14	0.09	7.66	7.61	6.27	7.38
K2O	9.60	10.03	9.80	0.00	0.07	0.06	0.00
Cr2O3	0.00	0.06	0.00	0.00	0.00	0.00	0.00
Total	96.75	97.53	95.65	102.50	102.02	101.68	101.89

Structural Formula

NO.OX.	22.	22.	22.	32.	32.	32.	32.
Si	5.622	5.596	5.620	10.632	10.635	10.155	10.601
Al iv	2.378	2.404	2.380	5.341	5.342	5.854	5.401
Al vi	0.618	0.592	0.622	0.000	0.000	0.000	0.000
Ti	0.225	0.224	0.203	0.000	0.000	0.000	0.000
Fe	2.143	2.155	2.102	0.000	0.000	0.010	0.004
Mn	0.026	0.027	0.036	0.000	0.000	0.000	0.000
Hg	2.695	2.718	2.759	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	1.434	1.420	1.819	1.441
Na	0.083	0.040	0.026	2.584	2.579	2.146	2.503
K	1.814	1.885	1.873	0.000	0.016	0.014	0.000
Cr	0.000	0.007	0.000	0.000	0.000	0.000	0.000
Total	15.604	15.641	15.623	19.990	19.992	19.998	19.950
Hg/Hg+Fe	0.557	0.558	0.568	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.357	0.354	0.457	0.365
Hg Na	0.000	0.000	0.000	0.643	0.642	0.539	0.635
Fe K	0.000	0.000	0.000	0.000	0.004	0.003	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40406

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.97	59.45	60.25	60.69	59.88	59.77	61.67
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.35	26.95	26.50	26.07	26.75	26.69	25.71
FeO	0.00	0.01	0.00	0.03	0.06	0.05	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.17	8.83	8.11	7.30	8.28	8.82	7.61
Na2O	7.19	6.85	7.22	7.50	7.14	6.82	7.56
K2O	0.00	0.06	0.09	0.16	0.00	0.09	0.06
Cr2O3	0.08	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.76	102.15	102.17	101.75	102.11	102.24	102.61

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.524	10.412	10.529	10.630	10.476	10.457	10.706
Al iv	5.451	5.565	5.460	5.383	5.517	5.505	5.262
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.001	0.000	0.004	0.009	0.007	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.536	1.657	1.519	1.370	1.552	1.653	1.416
Na	2.446	2.326	2.447	2.547	2.422	2.314	2.545
K	0.000	0.013	0.020	0.036	0.000	0.020	0.013
Cr	0.011	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.968	19.975	19.974	19.970	19.976	19.957	19.942
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.386	0.415	0.381	0.347	0.391	0.415	0.356
Hg Na	0.614	0.582	0.614	0.644	0.609	0.580	0.640
Fe K	0.000	0.003	0.005	0.009	0.000	0.005	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40406

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	61.19	61.05	60.83	61.90	61.89	60.06	61.18
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.07	25.96	26.49	25.68	25.34	26.67	26.11
FeO	0.02	0.01	0.00	0.03	0.03	0.00	0.01
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.62	7.31	7.78	7.19	6.96	8.48	7.73
Na2O	7.62	7.51	7.36	7.69	7.95	6.85	7.43
K2O	0.00	0.05	0.00	0.06	0.00	0.06	0.08
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	102.52	101.89	102.46	102.55	102.17	102.12	102.54

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.639	10.666	10.580	10.740	10.776	10.500	10.635
Al iv	5.344	5.347	5.432	5.253	5.202	5.497	5.351
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.003	0.001	0.000	0.004	0.004	0.000	0.001
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.420	1.368	1.450	1.337	1.299	1.588	1.440
Na	2.569	2.544	2.482	2.587	2.684	2.322	2.504
K	0.000	0.011	0.000	0.013	0.000	0.013	0.018
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.974	19.938	19.945	19.934	19.965	19.920	19.950
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.356	0.349	0.369	0.340	0.326	0.405	0.363
Mg Na	0.644	0.648	0.631	0.657	0.674	0.592	0.632
Fe K	0.000	0.003	0.000	0.003	0.000	0.003	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 40406

Mineral	FELD	FELD
SiO2	59.82	61.44
TiO2	0.00	0.00
Al2O3	26.89	25.97
FeO	0.00	0.00
MnO	0.00	0.00
MgO	0.00	0.00
CaO	8.50	7.70
Na2O	6.77	7.65
K2O	0.00	0.06
Cr2O3	0.00	0.00
Total	101.98	102.82

Structural Formula

NO.OX.	32.	32.
Si	10.468	10.656
Al iv	5.547	5.310
Al vi	0.000	0.000
Ti	0.000	0.000
Fe	0.000	0.000
Mn	0.000	0.000
Mg	0.000	0.000
Ca	1.594	1.431
Na	2.297	2.573
K	0.000	0.013
Cr	0.000	0.000
Total	19.907	19.982

Mg/Mg+Fe 0.000 0.000

Ca Ca 0.410 0.356
Mg Na 0.590 0.640
Fe K 0.000 0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 40406

Mineral	Bi	Bi	Epi
SiO2	36.61	36.90	36.54
TiO2	2.13	2.00	0.17
Al2O3	16.87	16.81	22.94
FeO	17.58	17.82	12.37
MnO	0.19	0.26	0.17
HgO	12.47	12.09	0.00
CaO	0.00	0.04	23.33
Na2O	0.11	0.13	0.05
K2O	9.67	8.97	0.01
Cr2O3	0.01	0.06	0.02
Total	95.64	95.08	95.60

Structural Formula

NO.OX.	22.	22.	25.
Si	5.517	5.574	6.112
Al iv	2.483	2.426	0.000
Al vi	0.514	0.568	4.523
Ti	0.241	0.227	0.021
Fe	2.216	2.251	1.730
Mn	0.024	0.033	0.024
Hg	2.801	2.722	0.000
Ca	0.000	0.006	4.181
Na	0.032	0.038	0.016
K	1.839	1.729	0.002
Cr	0.001	0.007	0.003
Total	15.688	15.582	16.613
Hg/Hg+Fe	0.358	0.347	0.000
Ca Ca	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000
Fe K	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 41702

Mineral	Bi	Bi	Gar	Gar	Gar	Feld(3)	Feld(3)
SiO2	34.63	34.75	36.58	36.86	36.28	65.47	65.77
TiO2	2.53	2.12	0.00	0.06	0.09	0.00	0.00
Al2O3	16.81	17.68	20.65	20.73	20.70	18.52	18.60
FeO	23.26	24.35	24.41	23.57	24.03	0.00	0.00
MnO	0.21	0.34	15.10	14.89	14.26	0.00	0.00
HgO	8.01	7.21	0.74	0.65	0.95	0.00	0.00
CaO	0.00	0.00	2.92	3.73	2.99	0.00	0.00
Na2O	0.05	0.00	0.05	0.01	0.08	0.52	0.56
K2O	9.87	9.95	0.00	0.00	0.00	16.36	16.38
Cr2O3	0.01	0.03	0.02	0.05	0.02	0.00	0.00
Total	95.38	96.43	100.47	100.55	99.40	100.87	101.31

Structural Formula

NO.OX.	22.	22.	12.	12.	12.	32.	32.
Si	5.414	5.394	2.982	2.992	2.978	11.997	11.997
Al iv	2.586	2.606	0.000	0.000	0.000	4.001	4.000
Al vi	0.512	0.629	1.985	1.984	2.003	0.000	0.000
Ti	0.297	0.247	0.000	0.004	0.006	0.000	0.000
Fe	3.041	3.161	1.664	1.600	1.650	0.000	0.000
Mn	0.028	0.045	1.043	1.024	0.991	0.000	0.000
Hg	1.866	1.668	0.090	0.079	0.116	0.000	0.000
Ca	0.000	0.000	0.255	0.324	0.263	0.000	0.000
Na	0.015	0.000	0.008	0.002	0.013	0.185	0.198
K	1.969	1.970	0.000	0.000	0.000	3.825	3.812
Cr	0.001	0.004	0.001	0.003	0.001	0.000	0.000
Total	15.730	15.724	8.029	8.011	8.021	20.007	20.008
Hg/Hg+Fe	0.380	0.345	0.051	0.047	0.066	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.046	0.049
Fe K	0.000	0.000	0.000	0.000	0.000	0.954	0.951

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 41702

Mineral	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	63.21	62.67	63.02	66.08	65.74	65.88
TiO2	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	22.38	21.82	22.29	18.74	18.59	18.63
FeO	0.00	0.00	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00
CaO	3.72	3.38	3.69	0.04	0.00	0.00
Na2O	9.40	9.41	9.39	1.15	0.69	0.63
K2O	0.15	0.19	0.14	15.54	16.17	16.30
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00
Total	98.86	97.47	98.53	101.55	101.19	101.44

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.
Si	11.288	11.343	11.291	11.989	11.998	11.998
Al iv	4.712	4.656	4.708	4.008	4.000	4.000
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.712	0.656	0.708	0.008	0.000	0.000
Na	3.255	3.303	3.262	0.405	0.244	0.222
K	0.034	0.044	0.032	3.597	3.765	3.787
Cr	0.000	0.000	0.000	0.000	0.000	0.000
Total	20.001	20.002	20.002	20.007	20.007	20.007
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.178	0.164	0.177	0.002	0.000	0.000
Mg Na	0.814	0.825	0.815	0.101	0.061	0.055
Fe K	0.009	0.011	0.008	0.897	0.939	0.945

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 41803

Mineral	O1	O1	O1	Px	Px	Px	Px
SiO2	38.40	38.38	38.07	50.26	53.84	54.13	52.66
TiO2	0.00	0.08	0.00	0.30	0.24	0.32	0.08
Al2O3	0.00	0.00	0.00	3.78	2.22	2.19	3.22
FeO	23.04	21.58	22.93	6.98	13.15	13.07	15.57
MnO	0.30	0.25	0.34	0.23	0.25	0.26	0.28
MgO	39.03	40.27	39.42	16.22	29.56	29.14	26.54
CaO	0.02	0.02	0.00	20.41	1.64	1.47	1.20
Na2O	0.03	0.01	0.00	0.35	0.00	0.00	0.08
K2O	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Cr2O3	0.04	0.00	0.00	0.73	0.32	0.24	0.20
Total	100.86	100.59	100.76	99.26	101.22	100.83	99.83

Structural Formula

NO.OX.	4.	4.	4.	6.	6.	6.	6.
Si	0.994	0.989	0.987	1.874	1.902	1.921	1.909
Al iv	0.000	0.000	0.000	0.126	0.093	0.079	0.091
Al vi	0.000	0.000	0.000	0.040	0.000	0.013	0.046
Ti	0.000	0.002	0.000	0.008	0.006	0.009	0.002
Fe	0.499	0.465	0.497	0.218	0.390	0.388	0.472
Mn	0.007	0.005	0.007	0.007	0.008	0.008	0.009
Mg	1.505	1.547	1.522	0.901	1.561	1.541	1.434
Ca	0.001	0.001	0.000	0.815	0.062	0.056	0.047
Na	0.002	0.000	0.000	0.025	0.000	0.000	0.006
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.022	0.009	0.007	0.006
Total	3.007	3.009	3.013	4.037	4.035	4.021	4.020
Mg/Mg+Fe	0.751	0.769	0.754	0.805	0.800	0.799	0.752
Ca Ca	0.000	0.000	0.000	0.422	0.031	0.028	0.024
Mg Na	0.000	0.000	0.000	0.466	0.775	0.776	0.734
Fe K	0.000	0.000	0.000	0.113	0.194	0.195	0.242

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 41803

Mineral	Anph	Anph	Bi	Bi	FELD	Feld(3)
SiO2	41.81	41.86	36.59	37.79	53.07	57.24
TiO2	1.20	2.35	1.56	1.88	0.07	0.00
Al2O3	13.90	13.49	16.90	17.24	28.11	27.01
FeO	9.90	9.37	9.75	9.85	0.28	0.00
MnO	0.10	0.08	0.02	0.06	0.12	0.00
HgO	14.53	14.40	18.66	18.98	1.04	0.00
CaO	12.14	12.24	0.00	0.00	10.87	8.93
Na2O	2.24	2.31	0.23	0.14	4.78	6.49
K2O	1.29	1.15	9.49	8.67	0.05	0.09
Cr2O3	0.40	0.22	0.60	0.47	0.05	0.00
Total	97.51	97.47	93.80	95.08	98.44	99.76

Structural Formula

NO.OX.	23.	23.	22.	22.	32.	32.
Si	6.145	6.139	5.425	5.481	9.748	10.281
Al ^{iv}	1.855	1.861	2.575	2.519	6.087	5.719
Al ^{vi}	0.553	0.472	0.379	0.428	0.000	0.000
Ti	0.133	0.259	0.174	0.205	0.010	0.000
Fe	1.217	1.149	1.209	1.195	0.043	0.000
Mn	0.012	0.010	0.003	0.007	0.019	0.000
Hg	3.182	3.147	4.123	4.102	0.285	0.000
Ca	1.912	1.923	0.000	0.000	2.139	1.719
Na	0.638	0.657	0.066	0.039	1.702	2.260
K	0.242	0.215	1.795	1.604	0.012	0.021
Cr	0.046	0.026	0.070	0.054	0.007	0.000
Total	15.936	15.859	15.819	15.635	20.052	20.000
Hg/Hg+Fe	0.723	0.733	0.773	0.774	0.869	0.000
Ca Ca	0.303	0.309	0.000	0.000	0.555	0.430
Hg Na	0.504	0.506	0.000	0.000	0.442	0.565
Fe K	0.193	0.185	0.000	0.000	0.003	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 41901

Mineral	Anph	Anph	Bi	Bi
SiO2	43.60	42.46	35.73	36.80
TiO2	1.11	1.19	2.36	2.23
Al2O3	9.12	10.12	16.47	16.53
FeO	18.47	18.28	18.82	19.02
MnO	0.38	0.39	0.24	0.27
MgO	10.35	9.97	12.34	12.23
CaO	11.74	11.86	0.00	0.00
Na2O	1.22	1.19	0.19	0.14
K2O	0.85	1.10	9.69	9.43
Cr2O3	0.05	0.03	0.02	0.09
Total	96.89	96.59	95.86	96.74

Structural Formula

NO.OX.	23.	23.	22.	22.
Si	6.661	6.524	5.426	5.515
Al iv	1.339	1.476	2.574	2.485
Al vi	0.303	0.358	0.375	0.435
Ti	0.128	0.138	0.270	0.251
Fe	2.360	2.349	2.390	2.384
Mn	0.049	0.051	0.031	0.034
Mg	2.356	2.283	2.793	2.731
Ca	1.922	1.953	0.000	0.000
Na	0.361	0.355	0.056	0.041
K	0.166	0.216	1.878	1.803
Cr	0.006	0.004	0.002	0.011
Total	15.651	15.705	15.795	15.690
Mg/Mg+Fe	0.500	0.493	0.539	0.534
Ca Ca	0.290	0.297	0.000	0.000
Mg Na	0.355	0.347	0.000	0.000
Fe K	0.355	0.357	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 42402

Mineral	Amph	Amph	Bi	Bi	Bi	Bi	FELD
SiO2	44.71	45.15	37.45	37.91	36.81	37.43	58.17
TiO2	1.12	1.09	1.69	1.82	1.68	1.86	0.00
Al2O3	10.81	10.81	16.94	16.76	16.36	16.73	27.25
FeO	17.57	17.76	17.29	16.95	17.31	17.13	0.07
MnO	0.30	0.26	0.20	0.14	0.10	0.13	0.00
MgO	10.46	10.78	13.18	13.15	12.62	12.99	0.00
CaO	11.67	11.46	0.00	0.00	0.06	0.08	9.12
Na2O	1.33	1.32	0.17	0.17	0.14	0.14	6.30
K2O	0.90	0.91	8.79	9.04	9.09	9.20	0.08
Cr2O3	0.00	0.00	0.07	0.06	0.00	0.00	0.00
Total	98.87	99.54	95.78	96.00	94.17	95.69	100.99

Structural Formula

NO.OX.	23.	23.	22.	22.	22.	22.	32.
Si	6.629	6.642	5.585	5.632	5.606	5.597	10.312
Al _{iv}	1.371	1.358	2.415	2.368	2.394	2.403	5.695
Al _{vi}	0.519	0.517	0.563	0.567	0.544	0.546	0.000
Ti	0.125	0.121	0.190	0.203	0.192	0.209	0.000
Fe	2.179	2.185	2.156	2.106	2.205	2.142	0.010
Mn	0.038	0.032	0.025	0.018	0.013	0.016	0.000
Mg	2.311	2.364	2.928	2.911	2.865	2.895	0.000
Ca	1.854	1.807	0.000	0.000	0.010	0.013	1.732
Na	0.382	0.377	0.049	0.049	0.041	0.041	2.165
K	0.170	0.171	1.672	1.713	1.766	1.755	0.018
Cr	0.000	0.000	0.008	0.007	0.000	0.000	0.000
Total	15.578	15.573	15.593	15.575	15.636	15.617	19.933
Mg/Mg+Fe	0.515	0.520	0.576	0.580	0.565	0.575	0.000
Ca Ca	0.292	0.284	0.000	0.000	0.000	0.000	0.442
Mg Na	0.364	0.372	0.000	0.000	0.000	0.000	0.553
Fe K	0.343	0.344	0.000	0.000	0.000	0.000	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 42402

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	58.98	58.90	59.94	59.85	60.06	59.05	59.38
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.98	27.33	26.65	26.18	26.13	27.49	26.86
FeO	0.01	0.00	0.00	0.05	0.04	0.00	0.03
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.69	9.09	8.25	8.26	7.87	9.65	8.73
Na2O	6.81	6.46	7.13	7.02	7.16	6.48	6.73
K2O	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.47	101.78	102.03	101.36	101.26	102.67	101.73

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.393	10.348	10.493	10.541	10.575	10.307	10.431
Al ^{iv}	5.605	5.661	5.500	5.436	5.424	5.657	5.563
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.001	0.000	0.000	0.007	0.006	0.000	0.004
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.641	1.711	1.547	1.559	1.485	1.805	1.643
Na	2.327	2.201	2.420	2.397	2.445	2.193	2.292
K	0.000	0.000	0.013	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.968	19.921	19.974	19.940	19.935	19.961	19.934
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca _{Ca}	0.414	0.437	0.389	0.394	0.378	0.451	0.418
Hg _{Na}	0.586	0.563	0.608	0.606	0.622	0.549	0.582
Fe _K	0.000	0.000	0.003	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 42402

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.69	59.23	59.99	59.85	58.85	59.70	59.37
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.48	26.61	26.17	26.70	27.21	27.24	27.02
FeO	0.00	0.03	0.00	0.08	0.01	0.09	0.02
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.98	8.78	8.08	8.96	9.09	8.59	8.59
Na2O	7.32	6.95	7.39	6.85	6.69	6.99	6.99
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.09	0.00	0.00	0.00	0.00
Total	102.47	101.60	101.72	102.44	101.85	102.61	101.99

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.563	10.432	10.537	10.453	10.344	10.404	10.409
Al iv	5.433	5.525	5.419	5.497	5.639	5.596	5.585
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.004	0.000	0.012	0.001	0.013	0.003
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.488	1.657	1.521	1.677	1.712	1.604	1.614
Na	2.470	2.374	2.517	2.320	2.280	2.362	2.376
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.012	0.000	0.000	0.000	0.000
Total	19.955	19.992	20.006	19.958	19.976	19.979	19.987
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.376	0.411	0.377	0.420	0.429	0.404	0.404
Mg Na	0.624	0.589	0.623	0.580	0.571	0.596	0.596
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 42402

Mineral	FELD
SiO2	59.65
TiO2	0.00
Al2O3	26.72
FeO	0.00
MnO	0.00
MgO	0.00
CaO	8.52
Na2O	6.82
K2O	0.07
Cr2O3	0.00
Total	101.78

Structural Formula

NO.OX.	32.
Si	10.469
Al iv	5.528
Al vi	0.000
Ti	0.000
Fe	0.000
Mn	0.000
Mg	0.000
Ca	1.602
Na	2.321
K	0.016
Cr	0.000
Total	19.935

Mg/Mg+Fe 0.000

Ca Ca	0.407
Mg Na	0.589
Fe K	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 42402

Mineral	Amph	Amp	Bi	Bi	Epi	FELD	FELD
SiO2	43.76	43.45	36.47	36.58	37.69	57.33	58.51
TiO2	1.12	1.22	1.79	1.65	0.23	0.00	0.00
Al2O3	10.46	10.61	16.85	16.72	23.66	26.60	26.27
FeO	17.80	17.78	17.37	17.62	11.52	0.00	0.55
MnO	0.33	0.24	0.17	0.11	0.23	0.05	0.01
HgO	10.41	10.04	12.95	12.79	0.00	0.00	0.00
CaO	11.62	11.25	0.00	0.02	22.91	8.67	8.41
Na2O	1.25	1.52	0.18	0.13	0.03	6.96	7.04
K2O	0.88	0.73	9.06	8.69	0.01	0.06	0.05
Cr2O3	0.02	0.05	0.05	0.10	0.11	0.02	0.10
Total	97.65	96.89	94.89	94.41	96.39	99.69	100.94

Structural Formula

NO.OX.	23.	23.	22.	22.	25.	32.	32.
Si	6.594	6.593	5.518	5.554	6.195	10.316	10.406
Al iv	1.406	1.407	2.482	2.446	0.000	5.643	5.508
Al vi	0.452	0.490	0.523	0.546	4.584	0.000	0.000
Ti	0.127	0.139	0.204	0.188	0.028	0.000	0.000
Fe	2.243	2.256	2.198	2.237	1.583	0.000	0.082
Mn	0.042	0.031	0.022	0.014	0.032	0.008	0.002
Hg	2.338	2.270	2.920	2.894	0.000	0.000	0.000
Ca	1.876	1.829	0.000	0.003	4.035	1.672	1.603
Na	0.365	0.447	0.053	0.038	0.010	2.428	2.428
K	0.169	0.141	1.749	1.683	0.002	0.014	0.011
Cr	0.002	0.006	0.006	0.012	0.014	0.003	0.014
Total	15.616	15.610	15.674	15.616	16.483	20.083	20.053
Hg/Hg+Fe	0.510	0.502	0.571	0.564	0.000	0.000	0.000
Ca Ca	0.291	0.288	0.000	0.000	0.000	0.406	0.397
Hg Na	0.362	0.357	0.000	0.000	0.000	0.590	0.601
Fe K	0.347	0.355	0.000	0.000	0.000	0.003	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 42402

Mineral	FELD
SiO2	58.57
TiO2	0.05
Al2O3	25.59
FeO	0.11
MnO	0.00
HgO	0.00
CaO	7.55
Na2O	7.43
K2O	0.03
Cr2O3	0.04
Total	99.37

Structural Formula

NO.OX.	32.
Si	10.534
Al iv	5.426
Al vi	0.000
Ti	0.007
Fe	0.017
Mn	0.000
Hg	0.000
Ca	1.455
Na	2.591
K	0.007
Cr	0.006
Total	20.042

Hg/Hg+Fe 0.000

Ca Ca	0.359
Hg Na	0.639
Fe K	0.002

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 42706

Mineral	Amph	Bi	Bi	Epi	Feld(3)	Feld(3)	Feld(3)
SiO2	42.21	35.83	35.33	36.98	58.36	60.34	56.99
TiO2	0.96	1.64	1.84	0.11	0.00	0.00	0.00
Al2O3	11.76	17.39	17.21	24.15	25.83	25.95	25.24
FeO	19.82	20.44	20.28	11.17	0.00	0.00	0.00
MnO	0.31	0.13	0.10	0.31	0.00	0.00	0.00
HgO	8.47	10.50*	10.45	0.00	0.00	0.00	0.00
CaO	11.64	0.03	0.00	23.72	7.70	7.33	7.54
Na2O	1.34	0.21	0.13	0.03	7.16	7.64	6.98
K2O	0.86	8.78	9.28	0.04	0.05	0.06	0.06
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.37	94.95	94.62	96.51	99.10	101.32	96.81

Structural Formula

NO.OX.	23.	22.	22.	25.	32.	32.	32.
Si	6.453	5.490	5.453	6.086	10.514	10.617	10.511
Al iv	1.547	2.510	2.547	0.000	5.486	5.383	5.488
Al vi	0.573	0.632	0.585	4.686	0.000	0.000	0.000
Ti	0.110	0.189	0.214	0.014	0.000	0.000	0.000
Fe	2.534	2.620	2.618	1.537	0.000	0.000	0.000
Mn	0.040	0.017	0.013	0.043	0.000	0.000	0.000
Hg	1.930	2.398	2.404	0.000	0.000	0.000	0.000
Ca	1.907	0.005	0.000	4.183	1.486	1.382	1.490
Na	0.397	0.062	0.039	0.010	2.501	2.607	2.496
K	0.168	1.716	1.827	0.008	0.011	0.013	0.014
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.659	15.639	15.700	16.567	19.999	20.002	20.000
Hg/Hg+Fe	0.432	0.478	0.479	0.000	0.000	0.000	0.000
Ca Ca	0.299	0.000	0.000	0.000	0.372	0.345	0.372
Hg Na	0.303	0.000	0.000	0.000	0.625	0.651	0.624
Fe K	0.398	0.000	0.000	0.000	0.003	0.003	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 50203B

Mineral	Bi	Bi
SiO2	35.86	36.48
TiO2	2.03	1.80
Al2O3	16.31	16.71
FeO	19.00	19.26
MnO	0.24	0.32
HgO	11.10	11.47
CaO	0.00	0.00
Na2O	0.08	0.10
K2O	9.70	9.46
Cr2O3	0.03	0.04
Total	94.35	95.64

Structural Formula

NO.OX.	22.	22.
Si	5.534	5.540
Al iv	2.466	2.460
Al vi	0.502	0.532
Ti	0.236	0.206
Fe	2.452	2.446
Mn	0.031	0.041
Hg	2.553	2.596
Ca	0.000	0.000
Na	0.024	0.029
K	1.910	1.833
Cr	0.004	0.005
Total	15.711	15.687
Hg/Hg+Fe	0.510	0.515
Ca Ca	0.000	0.000
Hg Na	0.000	0.000
Fe K	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602A

Mineral	Anph	Anph	Anph	Anph	Anph	Anph	Bi
SiO2	43.60	43.29	43.00	42.94	42.23	44.07	37.76
TiO2	1.20	1.37	1.32	1.36	1.30	1.45	2.01
Al2O3	10.81	10.74	10.65	10.55	10.79	10.48	16.20
FeO	18.21	18.09	18.21	18.43	18.82	18.32	18.15
MnO	0.41	0.29	0.33	0.40	0.37	0.42	0.23
HgO	9.75	9.79	9.47	9.91	9.72	10.02	12.39
CaO	11.92	12.04	11.78	11.60	11.58	11.94	0.00
Na2O	1.19	1.12	1.11	1.20	1.18	1.19	0.15
K2O	1.28	1.29	1.33	1.27	1.22	1.21	9.45
Cr2O3	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Total	98.37	98.02	97.25	97.66	97.21	99.10	96.34

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	23.	22.
Si	6.555	6.533	6.548	6.519	6.460	6.574	5.643
Al iv	1.445	1.467	1.452	1.481	1.540	1.426	2.357
Al vi	0.472	0.444	0.459	0.407	0.405	0.417	0.498
Ti	0.136	0.155	0.151	0.155	0.150	0.163	0.226
Fe	2.290	2.283	2.319	2.340	2.408	2.286	2.269
Mn	0.052	0.037	0.043	0.051	0.048	0.053	0.029
Hg	2.185	2.202	2.149	2.242	2.216	2.228	2.760
Ca	1.920	1.947	1.922	1.887	1.898	1.908	0.000
Na	0.347	0.328	0.328	0.353	0.350	0.344	0.043
K	0.246	0.248	0.258	0.246	0.238	0.230	1.802
Cr	0.000	0.000	0.006	0.000	0.000	0.000	0.000
Total	15.647	15.644	15.635	15.682	15.712	15.629	15.626
Hg/Mg+Fe	0.488	0.491	0.481	0.489	0.479	0.494	0.549
Ca Ca	0.300	0.303	0.301	0.292	0.291	0.297	0.000
Hg Na	0.342	0.342	0.336	0.347	0.340	0.347	0.000
Fe K	0.358	0.355	0.363	0.362	0.369	0.356	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602A

Mineral	Bi	Bi	Bi	Bi	Epi	Epi	Epi
SiO2	36.73	36.88	36.90	37.30	38.78	38.32	37.69
TiO2	1.80	1.84	1.93	1.96	0.06	0.11	0.00
Al2O3	15.94	15.91	15.98	16.21	23.06	23.13	22.91
FeO	17.80	18.46	18.14	18.50	12.49	12.34	12.33
MnO	0.16	0.20	0.22	0.28	0.14	0.20	0.15
HgO	12.34	12.10	12.07	12.41	0.00	0.00	0.00
CaO	0.00	0.00	0.00	0.00	23.42	23.53	23.20
Na2O	0.13	0.13	0.13	0.13	0.00	0.00	0.00
K2O	9.56	9.34	9.49	9.65	0.00	0.00	0.00
Cr2O3	0.12	0.09	0.00	0.00	0.00	0.00	0.00
Total	94.58	94.95	94.86	96.44	97.95	97.63	96.28

Structural Formula

NO.OX.	22.	22.	22.	22.	25.	25.	25.
Si	5.606	5.615	5.618	5.594	6.292	6.245	6.232
Al iv	2.394	2.385	2.382	2.406	0.000	0.000	0.000
Al vi	0.475	0.471	0.487	0.460	4.411	4.444	4.466
Ti	0.207	0.211	0.221	0.221	0.007	0.013	0.000
Fe	2.272	2.351	2.310	2.320	1.695	1.682	1.705
Mn	0.021	0.026	0.028	0.036	0.019	0.028	0.021
Hg	2.807	2.746	2.739	2.774	0.000	0.000	0.000
Ca	0.000	0.000	0.000	0.000	4.071	4.109	4.110
Na	0.038	0.038	0.038	0.039	0.000	0.000	0.000
K	1.862	1.814	1.843	1.846	0.000	0.000	0.000
Cr	0.014	0.011	0.000	0.000	0.000	0.000	0.000
Total	15.696	15.667	15.667	15.694	16.495	16.520	16.535
Hg/Hg+Fe	0.553	0.539	0.542	0.544	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602A

Mineral	Epi	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	38.98	59.69	59.93	58.03	60.39	59.04	57.24
TiO2	0.00	0.09	0.00	0.00	0.00	0.00	0.00
Al2O3	23.05	25.95	25.71	26.55	25.75	26.15	26.45
FeO	12.34	0.03	0.00	0.03	0.00	0.00	0.08
MnO	0.13	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	23.08	8.07	7.93	9.12	7.67	8.15	9.19
Na2O	0.00	7.16	7.02	6.28	7.45	6.97	6.36
K2O	0.00	0.07	0.00	0.17	0.05	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.58	101.06	100.59	100.18	101.31	100.31	99.32

Structural Formula

NO.OX.	25.	32.	32.	32.	32.	32.	32.
Si	6.333	10.549	10.617	10.374	10.630	10.507	10.329
Al iv	0.000	5.407	5.370	5.595	5.344	5.486	5.627
Al vi	4.415	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.012	0.000	0.000	0.000	0.000	0.000
Fe	1.677	0.004	0.000	0.004	0.000	0.000	0.012
Mn	0.018	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	4.018	1.528	1.505	1.747	1.447	1.554	1.777
Na	0.000	2.454	2.411	2.177	2.543	2.405	2.225
K	0.000	0.016	0.000	0.039	0.011	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	16.460	19.970	19.904	19.934	19.975	19.952	19.970
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.382	0.384	0.441	0.362	0.393	0.444
Hg Na	0.000	0.614	0.616	0.549	0.636	0.607	0.556
Fe K	0.000	0.004	0.000	0.010	0.003	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602A

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	56.59	57.23	56.75	57.67	59.15	59.26	58.17
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.94	25.21	25.38	26.36	26.52	26.77	27.06
FeO	0.01	0.00	0.04	0.00	0.02	0.02	0.03
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	9.48	7.85	8.31	8.52	8.57	8.53	10.05
Na2O	6.10	6.92	6.80	6.72	6.83	6.80	6.27
K2O	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.18	97.21	97.28	99.27	101.09	101.38	101.58

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.234	10.515	10.442	10.391	10.456	10.442	10.280
Al iv	5.744	5.461	5.505	5.599	5.527	5.561	5.638
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.002	0.000	0.006	0.000	0.003	0.003	0.004
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.837	1.545	1.638	1.645	1.623	1.610	1.903
Na	2.139	2.465	2.426	2.348	2.341	2.323	2.149
K	0.014	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.970	19.987	20.018	19.983	19.951	19.939	19.975
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.460	0.385	0.403	0.412	0.409	0.409	0.470
Hg Na	0.536	0.615	0.597	0.588	0.591	0.591	0.530
Fe K	0.003	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602A

Mineral	FELD	FELD	FELD	FELD
SiO2	59.08	58.03	60.05	58.99
TiO2	0.00	0.00	0.00	0.00
Al2O3	26.23	26.91	25.70	26.21
FeO	0.09	0.00	0.05	0.00
MnO	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00
CaO	8.53	9.12	7.82	8.73
Na2O	6.99	6.57	7.12	6.81
K2O	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.07	0.00	0.00
Total	100.92	100.70	100.74	100.74

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	10.472	10.324	10.624	10.470
Al iv	5.481	5.644	5.360	5.485
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.013	0.000	0.007	0.000
Mn	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000
Ca	1.620	1.739	1.482	1.660
Na	2.402	2.266	2.443	2.344
K	0.000	0.000	0.000	0.000
Cr	0.000	0.010	0.000	0.000
Total	19.989	19.982	19.917	19.959
Hg/Hg+Fe	0.000	0.000	0.000	0.000
Ca Ca	0.403	0.434	0.378	0.415
Hg Na	0.597	0.566	0.622	0.585
Fe K	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602B

Mineral	Amph	Amph	Amph	Amph	Amph	Amph	Amph
SiO2	43.62	42.81	42.08	42.99	43.72	42.87	43.54
TiO2	1.23	1.52	1.45	1.46	1.27	1.35	1.44
Al2O3	9.66	10.85	10.84	10.63	10.53	10.72	10.66
FeO	17.22	18.52	18.00	18.31	18.26	18.28	18.81
MnO	0.37	0.28	0.23	0.34	0.33	0.46	0.33
HgO	10.10	9.70	9.45	9.55	9.90	9.44	9.57
CaO	11.72	11.73	11.59	11.75	11.88	11.90	11.97
Na2O	1.07	1.03	1.11	1.08	1.20	1.09	1.14
K2O	1.08	1.27	1.30	1.33	1.15	1.33	1.17
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	96.07	97.71	96.05	97.44	98.24	97.44	98.63

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	23.	23.
Si	6.678	6.493	6.488	6.535	6.576	6.524	6.543
Al iv	1.322	1.507	1.512	1.465	1.424	1.476	1.457
Al vi	0.422	0.433	0.459	0.441	0.444	0.448	0.432
Ti	0.142	0.173	0.168	0.167	0.144	0.155	0.163
Fe	2.205	2.349	2.321	2.328	2.297	2.327	2.364
Mn	0.048	0.036	0.030	0.044	0.042	0.059	0.042
Hg	2.305	2.192	2.172	2.164	2.219	2.141	2.143
Ca	1.923	1.906	1.915	1.914	1.915	1.941	1.927
Na	0.318	0.303	0.332	0.318	0.350	0.322	0.332
K	0.211	0.246	0.256	0.258	0.221	0.258	0.224
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.572	15.638	15.652	15.633	15.632	15.649	15.628
Hg/Hg+Fe	0.511	0.483	0.483	0.482	0.491	0.479	0.476
Ca Ca	0.299	0.296	0.299	0.299	0.298	0.303	0.300
Hg Na	0.358	0.340	0.339	0.338	0.345	0.334	0.333
Fe K	0.343	0.364	0.362	0.363	0.357	0.363	0.367

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602B

Mineral	Bi	Bi	Bi	Bi	Bi	Epi	Epi
SiO2	36.67	37.73	37.64	37.71	37.30	38.27	37.84
TiO2	1.82	1.89	1.89	1.89	1.88	0.19	0.18
Al2O3	16.59	16.78	16.29	16.58	16.52	23.52	22.36
FeO	17.50	18.10	17.75	17.98	17.40	13.05	12.87
MnO	0.27	0.26	0.26	0.19	0.20	0.20	0.08
HgO	12.00	12.29	12.26	12.19	12.10	0.00	0.00
CaO	0.00	0.00	0.00	0.00	0.00	23.49	23.80
Na2O	0.30	0.15	0.09	0.15	0.17	0.00	0.00
K2O	8.96	9.13	9.23	9.51	9.17	0.00	0.00
Cr2O3	0.00	0.00	0.06	0.00	0.00	0.07	0.00
Total	94.11	96.33	95.47	96.20	94.74	98.79	97.13

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	25.	25.
Si	5.596	5.623	5.660	5.638	5.643	6.182	6.231
Al iv	2.404	2.377	2.340	2.362	2.357	0.000	0.000
Al vi	0.580	0.571	0.547	0.560	0.590	4.479	4.341
Ti	0.209	0.212	0.214	0.212	0.214	0.023	0.022
Fe	2.233	2.256	2.232	2.248	2.202	1.763	1.772
Mn	0.035	0.033	0.033	0.024	0.026	0.027	0.011
Hg	2.729	2.730	2.747	2.716	2.728	0.000	0.000
Ca	0.000	0.000	0.000	0.000	0.000	4.066	4.199
Na	0.089	0.043	0.026	0.043	0.050	0.000	0.000
K	1.744	1.736	1.771	1.814	1.770	0.000	0.000
Cr	0.000	0.000	0.007	0.000	0.000	0.009	0.000
Total	15.620	15.581	15.578	15.618	15.579	16.550	16.576
Hg/Hg+Fe	0.550	0.548	0.552	0.547	0.553	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602B

Mineral	Epi	Epi	Epi	FELD	FELD	FELD	FELD
SiO2	38.63	39.17	38.75	55.71	54.72	58.89	57.80
TiO2	0.20	0.00	0.26	0.00	0.00	0.00	0.00
Al2O3	23.69	23.29	23.65	27.53	27.35	25.38	26.96
FeO	11.81	12.43	11.78	0.10	0.00	0.04	0.03
MnO	0.17	0.13	0.08	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	23.44	23.48	23.82	9.25	9.04	7.21	8.34
Na2O	0.00	0.00	0.00	6.17	6.01	7.38	6.52
K2O	0.00	0.00	0.00	0.00	0.06	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.05	0.00	0.00	0.00
Total	97.94	98.50	98.34	98.81	97.18	98.90	99.65

Structural Formula

NO.OX.	25.	25.	25.	32.	32.	32.	32.
Si	6.247	6.310	6.244	10.121	10.101	10.612	10.359
Al iv	0.000	0.000	0.000	5.896	5.952	5.392	5.696
Al vi	4.517	4.423	4.492	0.000	0.000	0.000	0.000
Ti	0.024	0.000	0.032	0.000	0.000	0.000	0.000
Fe	1.597	1.675	1.587	0.015	0.000	0.006	0.004
Mn	0.023	0.018	0.011	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	4.062	4.053	4.113	1.801	1.788	1.392	1.602
Na	0.000	0.000	0.000	2.173	2.151	2.579	2.266
K	0.000	0.000	0.000	0.000	0.014	0.000	0.000
Cr	0.000	0.000	0.000	0.007	0.000	0.000	0.000
Total	16.470	16.478	16.479	20.014	20.006	19.981	19.926
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.453	0.452	0.351	0.414
Hg Na	0.000	0.000	0.000	0.547	0.544	0.649	0.586
Fe K	0.000	0.000	0.000	0.000	0.004	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602B

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	57.49	57.59	58.07	58.38	56.98	56.69	58.95
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.78	27.10	26.31	27.25	27.39	27.66	26.38
FeO	0.00	0.00	0.00	0.00	0.02	0.06	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.04	8.48	7.99	8.69	9.27	9.70	7.89
Na2O	7.02	6.64	6.78	6.44	6.11	5.90	6.84
K2O	0.07	0.00	0.06	0.05	0.00	0.00	0.07
Cr2O3	0.00	0.00	0.08	0.00	0.00	0.00	0.00
Total	99.40	99.81	99.29	100.81	99.77	100.01	100.13

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.347	10.317	10.443	10.348	10.228	10.165	10.499
Al ^{iv}	5.682	5.723	5.578	5.694	5.796	5.847	5.539
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000	0.003	0.009	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.550	1.628	1.540	1.650	1.783	1.864	1.506
Na	2.450	2.306	2.364	2.213	2.127	2.051	2.362
K	0.016	0.000	0.014	0.011	0.000	0.000	0.016
Cr	0.000	0.000	0.011	0.000	0.000	0.000	0.000
Total	20.045	19.975	19.951	19.917	19.937	19.937	19.921
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.386	0.414	0.393	0.426	0.456	0.476	0.388
Hg Na	0.610	0.586	0.603	0.571	0.544	0.524	0.608
Fe K	0.004	0.000	0.004	0.003	0.000	0.000	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602B

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.31	58.16	58.37	60.11	58.45	57.98	59.92
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.53	27.39	26.34	26.29	26.27	26.55	26.62
FeO	0.12	0.07	0.08	0.02	0.00	0.00	0.03
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.15	9.47	8.27	7.93	8.23	8.87	8.22
Na2O	6.74	6.21	6.81	7.02	6.69	6.57	6.76
K2O	0.00	0.00	0.00	0.00	0.06	0.08	0.06
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.85	101.30	99.87	101.37	99.70	100.05	101.61

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.491	10.283	10.444	10.567	10.467	10.375	10.516
Al iv	5.533	5.709	5.556	5.449	5.546	5.601	5.508
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.018	0.010	0.012	0.003	0.000	0.000	0.004
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.545	1.794	1.585	1.494	1.579	1.701	1.546
Na	2.312	2.129	2.363	2.393	2.323	2.280	2.300
K	0.000	0.000	0.000	0.000	0.014	0.018	0.013
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.898	19.926	19.960	19.905	19.929	19.974	19.887
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.401	0.457	0.402	0.384	0.403	0.425	0.400
Hg Na	0.599	0.543	0.598	0.616	0.593	0.570	0.596
Fe K	0.000	0.000	0.000	0.000	0.004	0.005	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50602B

Mineral	FELD	FELD	FELD
SiO2	58.12	58.76	59.57
TiO2	0.00	0.00	0.00
Al2O3	26.38	26.98	26.20
FeO	0.03	0.00	0.00
MnO	0.00	0.00	0.00
MgO	0.00	0.00	0.00
CaO	8.61	8.78	8.27
Na2O	6.57	6.43	6.74
K2O	0.07	0.00	0.06
Cr2O3	0.00	0.00	0.00
Total	99.78	100.95	100.84

Structural Formula

NO.OX.	32.	32.	32.
Si	10.416	10.396	10.537
Al iv	5.574	5.6274	5.464
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.004	0.000	0.000
Mn	0.000	0.000	0.000
Mg	0.000	0.000	0.000
Ca	1.653	1.664	1.567
Na	2.283	2.206	2.312
K	0.016	0.000	0.014
Cr	0.000	0.000	0.000
Total	19.947	19.893	19.894
Mg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.418	0.430	0.403
Mg Na	0.578	0.570	0.594
Fe K	0.004	0.000	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50801

Mineral	Bi	Bi	Bi	Bi	Bi	FELD	FELD
SiO2	37.74	37.99	37.68	37.66	37.48	62.06	61.85
TiO2	2.00	2.06	2.04	2.13	1.81	0.00	0.00
Al2O3	16.85	16.53	16.37	16.69	16.54	25.29	26.20
FeO	19.27	18.88	19.03	19.97	19.59	0.04	0.00
MnO	0.30	0.26	0.22	0.25	0.18	0.00	0.00
MgO	11.27	11.73	10.76	10.75	11.42	0.00	0.00
CaO	0.00	0.00	0.00	0.00	0.00	6.93	7.19
Na2O	0.08	0.16	0.06	0.19	0.15	7.92	7.51
K2O	9.70	9.91	9.94	9.95	9.72	0.09	0.07
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	97.21	97.52	96.10	97.59	96.89	102.33	102.82

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	32.	32.
Si	5.621	5.637	5.681	5.617	5.616	10.791	10.695
Al iv	2.379	2.363	2.319	2.383	2.384	5.184	5.341
Al vi	0.579	0.528	0.591	0.552	0.537	0.000	0.000
Ti	0.224	0.230	0.231	0.239	0.204	0.000	0.000
Fe	2.400	2.343	2.400	2.491	2.455	0.006	0.000
Mn	0.038	0.033	0.028	0.032	0.023	0.000	0.000
Mg	2.501	2.594	2.418	2.390	2.550	0.000	0.000
Ca	0.000	0.000	0.000	0.000	0.000	1.291	1.332
Na	0.023	0.046	0.018	0.055	0.044	2.670	2.518
K	1.843	1.876	1.912	1.893	1.858	0.020	0.015
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.609	15.649	15.597	15.651	15.670	19.962	19.901
Mg/Mg+Fe	0.510	0.525	0.502	0.490	0.510	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.324	0.345
Mg Na	0.000	0.000	0.000	0.000	0.000	0.671	0.651
Fe K	0.000	0.000	0.000	0.000	0.000	0.005	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50801

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	61.45	62.19	61.46	61.66	61.66	61.44	61.91
TiO2	0.00	0.05	0.00	0.00	0.00	0.00	0.00
Al2O3	25.62	25.65	25.63	25.44	25.47	25.66	25.97
FeO	0.00	0.00	0.00	0.13	0.12	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.54	6.93	7.20	6.98	7.04	7.21	7.00
Na2O	7.66	7.96	7.68	7.76	7.90	7.83	7.90
K2O	0.08	0.05	0.00	0.08	0.00	0.05	0.10
Cr2O3	0.00	0.07	0.00	0.00	0.11	0.00	0.00
Total	102.35	102.90	101.97	102.05	102.30	102.19	102.88

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.701	10.753	10.723	10.754	10.735	10.708	10.711
Al iv	5.260	5.229	5.272	5.231	5.228	5.272	5.297
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.007	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.019	0.017	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.407	1.284	1.346	1.304	1.313	1.346	1.298
Na	2.586	2.669	2.598	2.624	2.667	2.646	2.650
K	0.018	0.011	0.000	0.018	0.000	0.011	0.022
Cr	0.000	0.010	0.000	0.000	0.015	0.000	0.000
Total	19.971	19.961	19.940	19.951	19.976	19.984	19.977
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.351	0.324	0.341	0.331	0.330	0.336	0.327
Hg Na	0.645	0.673	0.659	0.665	0.670	0.661	0.668
Fe K	0.004	0.003	0.000	0.005	0.000	0.003	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50801

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	62.40	62.89	62.55	62.19	61.91	62.08	62.16
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	25.57	25.20	25.45	25.19	25.41	25.56	25.09
FeO	0.01	0.00	0.00	0.00	0.05	0.00	0.03
MnO	0.07	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	6.76	6.34	6.65	7.00	7.01	6.55	6.78
Na2O	7.77	7.92	7.89	8.02	7.81	7.78	7.87
K2O	0.08	0.07	0.00	0.06	0.08	0.34	0.09
Cr2O3	0.00	0.00	0.07	0.00	0.00	0.00	0.00
Total	102.66	102.42	102.61	102.46	102.27	102.31	102.02

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.799	10.887	10.822	10.802	10.771	10.788	10.830
Al iv	5.217	5.143	5.191	5.158	5.212	5.237	5.154
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.001	0.000	0.000	0.000	0.007	0.000	0.004
Mn	0.010	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.253	1.176	1.233	1.303	1.307	1.220	1.266
Na	2.607	2.658	2.647	2.701	2.635	2.622	2.659
K	0.018	0.015	0.000	0.013	0.018	0.075	0.020
Cr	0.000	0.000	0.010	0.000	0.000	0.000	0.000
Total	19.905	19.879	19.902	19.977	19.949	19.942	19.932
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.323	0.305	0.318	0.324	0.330	0.311	0.321
Hg Na	0.672	0.691	0.682	0.672	0.665	0.669	0.674
Fe K	0.005	0.004	0.000	0.003	0.004	0.019	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 50801

Mineral	FELD	FELD	FELD
SiO2	61.15	59.59	61.56
TiO2	0.00	0.00	0.00
Al2O3	25.05	25.17	25.32
FeO	0.05	0.07	0.00
MnO	0.00	0.00	0.00
HgO	0.00	0.00	0.00
CaO	7.16	7.93	7.48
Na2O	7.83	7.35	7.74
K2O	0.06	0.07	0.00
Cr2O3	0.00	0.00	0.00
Total	101.30	100.18	102.10

Structural Formula

NO.OX.	32.	32.	32.
Si	10.755	10.628	10.740
Al iv	5.194	5.292	5.208
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.007	0.010	0.000
Mn	0.000	0.000	0.000
Hg	0.000	0.000	0.000
Ca	1.349	1.515	1.398
Na	2.670	2.542	2.618
K	0.013	0.016	0.000
Cr	0.000	0.000	0.000
Total	19.990	20.004	19.965
Hg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.335	0.372	0.348
Hg Na	0.662	0.624	0.652
Fe K	0.003	0.004	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 50801

Mineral	Bi	Bi	Epi	FELD	FELD	FELD	FELD
SiO2	36.39	36.01	37.03	59.55	58.89	59.65	57.76
TiO2	1.96	2.26	0.13	0.04	0.00	0.01	0.02
Al2O3	16.61	16.69	22.48	24.60	25.19	25.24	25.71
FeO	19.15	20.31	12.91	0.07	0.03	0.13	0.00
MnO	0.23	0.22	0.19	0.01	0.04	0.00	0.02
HgO	10.98	10.61	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	22.75	6.56	6.92	7.31	7.92
Na2O	0.10	0.17	0.02	7.93	7.35	7.67	7.34
K2O	9.53	9.35	0.00	0.08	0.06	0.09	0.07
Cr2O3	0.06	0.05	0.09	0.01	0.02	0.07	0.05
Total	95.01	95.67	95.60	98.85	98.50	100.17	98.89

Structural Formula

NO.OX.	22.	22.	25.	32.	32.	32.	32.
Si	5.563	5.497	6.194	10.735	10.648	10.636	10.458
Al iv	2.437	2.503	0.000	5.228	5.369	5.306	5.488
Al vi	0.556	0.501	4.433	0.000	0.000	0.000	0.000
Ti	0.225	0.259	0.016	0.005	0.000	0.001	0.003
Fe	2.448	2.593	1.806	0.011	0.005	0.019	0.000
Mn	0.030	0.028	0.027	0.002	0.006	0.000	0.003
Hg	2.501	2.414	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	4.077	1.267	1.341	1.397	1.537
Na	0.030	0.050	0.006	2.772	2.577	2.652	2.577
K	1.859	1.821	0.000	0.018	0.014	0.020	0.016
Cr	0.007	0.006	0.012	0.001	0.003	0.010	0.007
Total	15.656	15.674	16.571	20.040	19.962	20.041	20.088
Hg/Hg+Fe	0.505	0.482	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.312	0.341	0.343	0.372
Hg Na	0.000	0.000	0.000	0.683	0.655	0.652	0.624
Fe K	0.000	0.000	0.000	0.005	0.004	0.005	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51006

Mineral	Px	Px	Px	Px	Px	Px	Amph
SiO2	49.85	52.24	49.56	53.02	52.90	51.46	53.65
TiO2	0.04	0.08	0.02	0.15	0.13	0.08	0.00
Al2O3	0.71	1.16	0.66	1.14	1.16	0.66	0.22
FeO	34.33	16.76	34.14	13.79	13.67	33.13	28.36
MnO	0.53	0.35	0.79	0.29	0.28	1.38	0.74
MgO	13.37	10.77	13.55	10.69	11.06	14.11	14.12
CaO	0.73	19.95	0.74	21.80	22.36	0.75	0.54
Na2O	0.00	0.18	0.01	0.26	0.25	0.01	0.01
K2O	0.00	0.00	0.00	0.01	0.04	0.08	0.00
Cr2O3	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Total	99.56	101.50	99.47	101.15	101.85	101.66	97.64

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	23.
Si	1.982	1.977	1.975	1.993	1.978	1.992	8.030
Al iv	0.018	0.023	0.025	0.007	0.022	0.008	0.000
Al vi	0.016	0.028	0.006	0.044	0.030	0.022	0.039
Ti	0.001	0.002	0.001	0.004	0.004	0.002	0.000
Fe	1.142	0.530	1.138	0.434	0.428	1.073	3.550
Mn	0.018	0.011	0.027	0.009	0.007	0.045	0.094
Mg	0.792	0.607	0.805	0.599	0.616	0.814	3.150
Ca	0.031	0.809	0.032	0.878	0.896	0.031	0.087
Na	0.000	0.013	0.000	0.019	0.018	0.000	0.003
K	0.000	0.000	0.000	0.000	0.002	0.004	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	4.000	4.002	4.009	3.987	4.002	3.993	14.952
Mg/Hg+Fe	0.410	0.534	0.414	0.580	0.590	0.431	0.470
Ca Ca	0.016	0.416	0.016	0.460	0.462	0.016	0.013
Mg Na	0.403	0.312	0.408	0.313	0.318	0.424	0.464
Fe K	0.581	0.272	0.576	0.227	0.220	0.559	0.523

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51006

Mineral	Anph	Anph	Anph	Anph	Anph	FELD	FELD
SiO2	45.12	46.10	45.19	44.64	44.86	51.74	51.70
TiO2	1.86	0.87	1.68	1.68	1.44	0.00	0.00
Al2O3	9.77	9.22	10.12	10.05	10.19	31.04	32.15
FeO	19.76	19.86	19.83	20.94	20.39	0.05	0.11
MnO	0.17	0.20	0.21	0.19	0.22	0.00	0.01
HgO	8.83	8.92	8.74	8.68	8.83	0.01	0.00
CaO	11.07	11.08	11.26	10.79	10.93	14.45	14.94
Na2O	1.37	1.19	1.27	1.22	1.38	3.49	3.37
K2O	0.41	0.20	0.41	0.38	0.52	0.00	0.00
Cr2O3	0.01	0.00	0.09	0.00	0.00	0.05	0.00
Total	98.37	97.64	98.80	98.57	98.77	100.83	102.28

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	32.	32.
Si	6.756	6.928	6.738	6.703	6.713	9.335	9.210
Al iv	1.244	1.072	1.262	1.297	1.287	6.603	6.752
Al vi	0.481	0.562	0.517	0.482	0.511	0.000	0.000
Ti	0.209	0.098	0.188	0.190	0.162	0.000	0.000
Fe	2.474	2.496	2.473	2.630	2.552	0.008	0.016
Mn	0.022	0.025	0.027	0.024	0.028	0.000	0.002
Hg	1.970	1.998	1.942	1.942	1.969	0.003	0.000
Ca	1.776	1.784	1.799	1.736	1.753	2.794	2.852
Na	0.398	0.347	0.367	0.355	0.400	1.221	1.164
K	0.078	0.038	0.078	0.073	0.099	0.000	0.000
Cr	0.001	0.000	0.011	0.000	0.001	0.007	0.000
Total	15.410	15.349	15.401	15.432	15.475	19.970	19.996
Hg/Hg+Fe	0.443	0.445	0.440	0.425	0.436	0.263	0.000
Ca Ca	0.285	0.284	0.290	0.275	0.279	0.696	0.710
Hg Na	0.317	0.318	0.313	0.308	0.314	0.304	0.290
Fe K	0.398	0.398	0.398	0.417	0.407	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51006

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	50.92	52.75	52.16	52.24	50.78	49.90	49.39
TiO2	0.01	0.00	0.05	0.00	0.02	0.00	0.00
Al2O3	31.70	30.83	32.01	31.95	31.33	33.51	32.72
FeO	0.30	0.42	0.16	0.00	0.10	0.16	0.03
MnO	0.00	0.00	0.00	0.00	0.00	0.01	0.06
HgO	0.03	0.00	0.00	0.02	0.01	0.00	0.00
CaO	14.92	13.59	14.62	14.50	14.92	16.52	16.37
Na2O	3.16	3.85	3.75	3.62	3.10	2.27	2.41
K2O	0.00	0.00	0.05	0.01	0.01	0.00	0.01
Cr2O3	0.09	0.00	0.00	0.01	0.02	0.00	0.00
Total	101.13	101.44	102.80	102.35	100.29	102.37	100.99

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	9.187	9.448	9.249	9.283	9.227	8.916	8.949
Al iv	6.743	6.510	6.691	6.693	6.711	7.058	6.990
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.001	0.000	0.007	0.000	0.003	0.000	0.000
Fe	0.045	0.063	0.024	0.000	0.015	0.024	0.005
Mn	0.000	0.000	0.000	0.000	0.000	0.002	0.009
Hg	0.008	0.000	0.000	0.005	0.003	0.000	0.000
Ca	2.884	2.608	2.778	2.761	2.905	3.163	3.178
Na	1.105	1.337	1.289	1.247	1.092	0.786	0.847
K	0.000	0.000	0.011	0.002	0.002	0.000	0.002
Cr	0.013	0.000	0.000	0.001	0.003	0.000	0.000
Total	19.987	19.966	20.049	19.994	19.961	19.948	19.980
Hg/Hg+Fe	0.151	0.000	0.000	1.000	0.151	0.000	0.000
Ca Ca	0.723	0.661	0.681	0.688	0.726	0.801	0.789
Hg Na	0.277	0.339	0.316	0.311	0.273	0.199	0.210
Fe K	0.000	0.000	0.003	0.001	0.001	0.000	0.001

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51006

Mineral	FELD	FELD	FELD
SiO2	52.02	54.32	53.47
TiO2	0.00	0.00	0.00
Al2O3	31.68	30.45	30.38
FeO	0.29	0.21	0.21
MnO	0.05	0.03	0.03
HgO	0.02	0.01	0.01
CaO	14.93	13.00	13.02
Na2O	3.28	4.32	4.18
K2O	0.00	0.05	0.05
Cr2O3	0.00	0.03	0.03
Total	102.27	102.42	101.38

Structural Formula

NO.OX.	32.	32.	32.
Si	9.271	9.609	9.562
Al ^{iv}	6.656	6.351	6.405
Al ^{vi}	0.000	0.000	0.000
Ti	0.000	0.000	0.000
Fe	0.043	0.031	0.031
Mn	0.008	0.004	0.005
Hg	0.005	0.003	0.003
Ca	2.851	2.464	2.495
Na	1.133	1.482	1.449
K	0.000	0.011	0.011
Cr	0.000	0.004	0.004
Total	19.968	19.960	19.964
Hg/Hg+Fe	0.109	0.078	0.078
Ca Ca	0.716	0.623	0.631
Hg Na	0.284	0.374	0.366
Fe K	0.000	0.003	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51302

Mineral	Amph	Amph	Bi	Bi	Epi	FELD	FELD
SiO ₂	42.99	44.37	36.66	36.69	38.17	59.37	59.38
TiO ₂	1.27	1.18	2.31	2.16	0.12	0.06	0.05
Al ₂ O ₃	10.39	10.00	16.51	16.50	23.68	25.97	25.79
FeO	18.84	17.99	19.45	19.64	11.44	0.02	0.05
MnO	0.42	0.42	0.27	0.29	0.22	0.00	0.02
MgO	9.51	10.24	11.71	11.83	0.00	0.00	0.00
CaO	11.57	11.51	0.00	0.00	22.57	7.62	7.64
Na ₂ O	1.28	1.25	0.22	0.17	0.00	7.43	7.39
K ₂ O	1.37	0.86	9.44	9.46	0.01	0.08	0.07
Cr ₂ O ₃	0.00	0.00	0.08	0.08	0.00	0.06	0.00
Total	97.64	97.82	96.65	96.82	96.21	100.61	100.39

Structural Formula

NO.OX.	23.	23.	22.	22.	25.	32.	32.
Si	6.545	6.672	5.514	5.513	6.264	10.539	10.563
Al ^{iv}	1.455	1.328	2.486	2.487	0.000	5.435	5.408
Al ^{vi}	0.410	0.445	0.442	0.436	4.581	0.000	0.000
Ti	0.145	0.133	0.261	0.244	0.015	0.008	0.007
Fe	2.399	2.262	2.447	2.468	1.570	0.003	0.007
Mn	0.054	0.053	0.034	0.037	0.031	0.000	0.003
Mg	2.158	2.295	2.625	2.649	0.000	0.000	0.000
Ca	1.888	1.855	0.000	0.000	3.969	1.449	1.456
Na	0.378	0.364	0.064	0.050	0.000	2.557	2.549
K	0.266	0.165	1.811	1.814	0.002	0.018	0.016
Cr	0.000	0.000	0.010	0.010	0.000	0.008	0.000
Total	15.699	15.573	15.694	15.708	16.432	20.019	20.009
Mg/Mg+Fe	0.474	0.504	0.518	0.518	0.000	0.000	0.000
Ca Ca	0.293	0.289	0.000	0.000	0.000	0.360	0.362
Mg Na	0.335	0.358	0.000	0.000	0.000	0.635	0.634
Fe K	0.372	0.353	0.000	0.000	0.000	0.005	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51501

Mineral	Amph	Amph	Amph	Amph	Amph	Amph	Amph
SiO2	44.03	43.68	44.49	44.07	44.08	44.01	44.59
TiO2	1.11	1.35	0.77	0.85	1.35	1.38	1.04
Al2O3	10.46	10.52	10.43	11.19	10.38	10.69	10.95
FeO	14.90	14.57	14.73	14.61	14.26	14.82	14.60
MnO	0.15	0.29	0.20	0.24	0.27	0.29	0.16
MgO	11.67	11.62	11.77	11.65	11.98	11.72	11.85
CaO	12.05	12.05	12.17	12.11	11.91	11.92	12.00
Na2O	1.36	1.38	1.25	1.25	1.32	1.28	1.34
K2O	0.67	0.70	0.49	0.68	0.81	0.79	0.76
Cr2O3	0.12	0.10	0.23	0.02	0.12	0.13	0.12
Total	96.52	96.26	96.53	96.67	96.48	97.03	97.41

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	23.	23.
Si	6.619	6.585	6.668	6.597	6.615	6.582	6.621
Al iv	1.381	1.415	1.332	1.403	1.385	1.418	1.379
Al vi	0.472	0.455	0.511	0.572	0.452	0.467	0.538
Ti	0.125	0.153	0.087	0.096	0.152	0.155	0.116
Fe	1.873	1.837	1.846	1.829	1.790	1.854	1.813
Mn	0.019	0.037	0.025	0.030	0.034	0.037	0.020
Mg	2.614	2.611	2.629	2.599	2.679	2.612	2.622
Ca	1.941	1.947	1.955	1.943	1.915	1.910	1.909
Na	0.396	0.403	0.363	0.363	0.384	0.371	0.386
K	0.128	0.135	0.094	0.130	0.155	0.151	0.144
Cr	0.014	0.012	0.027	0.002	0.014	0.015	0.014
Total	15.584	15.590	15.538	15.565	15.576	15.573	15.562
Mg/Mg+Fe	0.583	0.587	0.587	0.587	0.600	0.585	0.591
Ca Ca	0.302	0.304	0.304	0.305	0.300	0.300	0.301
Mg Na	0.407	0.408	0.409	0.408	0.420	0.410	0.413
Fe K	0.291	0.287	0.287	0.287	0.280	0.291	0.286

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51501

Mineral	Bi	Bi	FELD	FELD	FELD	FELD	FELD
SiO2	43.76	38.62	58.27	57.93	58.58	57.61	57.74
TiO2	1.40	1.95	0.02	0.02	0.00	0.00	0.05
Al2O3	10.23	16.70	27.13	26.67	26.50	26.70	26.83
FeO	14.35	15.69	0.00	0.05	0.00	0.06	0.06
MnO	0.19	0.13	0.03	0.00	0.02	0.00	0.00
MgO	12.04	14.17	0.00	0.01	0.02	0.00	0.00
CaO	11.84	0.00	9.01	9.12	8.91	9.05	8.76
Na2O	1.29	0.13	6.19	6.37	6.66	6.47	6.39
K2O	0.64	6.96	0.03	0.00	0.01	0.04	0.02
Cr2O3	0.16	0.10	0.03	0.00	0.01	0.00	0.00
Total	95.90	94.45	100.71	100.17	100.71	99.93	99.85

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	6.319	5.712	10.343	10.353	10.409	10.329	10.343
Al iv	1.681	2.288	5.677	5.619	5.551	5.644	5.666
Al vi	0.060	0.624	0.000	0.000	0.000	0.000	0.000
Ti	0.152	0.217	0.003	0.003	0.000	0.000	0.007
Fe	1.733	1.941	0.000	0.007	0.000	0.009	0.009
Mn	0.023	0.016	0.005	0.000	0.003	0.000	0.000
Mg	2.591	3.124	0.000	0.003	0.005	0.000	0.000
Ca	1.832	0.000	1.714	1.746	1.696	1.739	1.681
Na	0.361	0.037	2.130	2.207	2.295	2.249	2.219
K	0.118	1.313	0.007	0.000	0.002	0.009	0.005
Cr	0.018	0.012	0.004	0.000	0.001	0.000	0.000
Total	14.889	15.284	19.882	19.939	19.963	19.978	19.930
Mg/Mg+Fe	0.599	0.617	0.000	0.263	1.000	0.000	0.000
Ca Ca	0.000	0.000	0.445	0.442	0.425	0.435	0.431
Mg Na	0.000	0.000	0.553	0.558	0.575	0.563	0.568
Fe K	0.000	0.000	0.002	0.000	0.001	0.002	0.001

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51501

Mineral	FELD	FELD	FELD
SiO2	57.94	58.75	59.95
TiO2	0.00	0.00	0.05
Al2O3	26.78	26.41	26.89
FeO	0.01	0.08	0.03
MnO	0.03	0.00	0.00
MgO	0.00	0.00	0.00
CaO	8.98	8.53	8.57
Na2O	6.52	6.71	6.39
K2O	0.00	0.03	0.04
Cr2O3	0.00	0.04	0.03
Total	100.26	100.55	101.95

Structural Formula

NO.OX.	32.	32.	32.
Si	10.346	10.445	10.484
Al iv	5.637	5.536	5.544
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.007
Fe	0.001	0.012	0.004
Mn	0.005	0.000	0.000
Mg	0.000	0.000	0.000
Ca	1.718	1.625	1.606
Na	2.257	2.313	2.167
K	0.000	0.007	0.009
Cr	0.000	0.006	0.004
Total	19.964	19.944	19.824
Mg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.432	0.412	0.425
Mg Na	0.568	0.586	0.573
Fe K	0.000	0.002	0.002

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JENL 733)

Sample 51504

Mineral	Amph	Amph	Amph	Amph	Amph	Amph	Amph
SiO ₂	44.75	44.96	45.71	44.77	44.48	45.39	44.86
TiO ₂	0.42	0.87	0.41	1.23	1.24	1.26	1.36
Al ₂ O ₃	11.53	10.83	11.10	10.92	10.69	10.88	10.79
FeO	14.59	14.64	14.38	15.13	15.33	15.14	14.94
MnO	0.29	0.22	0.18	0.29	0.16	0.19	0.21
HgO	11.46	11.82	11.94	11.49	12.01	11.80	11.63
CaO	11.60	11.92	11.76	11.14	11.84	11.68	11.65
Na ₂ O	1.38	1.31	1.31	1.26	1.32	1.42	1.38
K ₂ O	0.45	0.65	0.50	0.71	0.79	0.80	0.74
Cr ₂ O ₃	0.04	0.15	0.00	0.06	0.06	0.13	0.09
Total	96.51	97.37	97.29	97.00	97.92	98.69	97.65

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	23.	23.
Si	6.677	6.669	6.747	6.669	6.595	6.655	6.646
Al ^{iv}	1.323	1.331	1.253	1.331	1.405	1.345	1.354
Al ^{vi}	0.705	0.563	0.678	0.586	0.463	0.535	0.530
Ti	0.047	0.097	0.046	0.138	0.138	0.139	0.152
Fe	1.821	1.816	1.775	1.885	1.901	1.856	1.851
Mn	0.037	0.028	0.023	0.037	0.020	0.024	0.026
Hg	2.548	2.613	2.626	2.551	2.654	2.578	2.568
Ca	1.855	1.895	1.860	1.778	1.881	1.835	1.849
Na	0.399	0.377	0.375	0.364	0.379	0.404	0.396
K	0.086	0.123	0.094	0.135	0.149	0.150	0.140
Cr	0.005	0.018	0.000	0.007	0.007	0.015	0.011
Total	15.502	15.528	15.477	15.480	15.593	15.535	15.523
Hg/Hg+Fe	0.583	0.590	0.597	0.575	0.583	0.581	0.581
Ca Ca	0.298	0.300	0.297	0.286	0.292	0.293	0.295
Hg Na	0.409	0.413	0.419	0.411	0.412	0.411	0.410
Fe K	0.293	0.287	0.283	0.303	0.295	0.296	0.295

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51504

Mineral	Amph	Amph	Amph	Bi	Bi	Bi	Bi
SiO2	45.41	44.63	44.49	39.50	39.24	39.33	38.89
TiO2	1.30	1.16	0.93	1.92	2.03	1.93	1.90
Al2O3	10.50	10.87	10.88	17.45	17.47	17.10	17.02
FeO	14.83	14.99	15.06	15.65	15.71	15.61	15.84
MnO	0.24	0.25	0.17	0.12	0.07	0.14	0.13
MgO	12.20	11.69	11.80	14.46	13.98	14.21	13.79
CaO	11.95	11.83	11.93	0.06	0.00	0.01	0.00
Na2O	1.39	1.26	1.32	0.10	0.11	0.11	0.09
K2O	0.77	0.71	0.56	7.19	5.89	6.10	6.67
Cr2O3	0.16	0.06	0.04	0.07	0.10	0.06	0.02
Total	98.75	97.45	97.18	96.52	94.60	94.60	94.35

Structural Formula

NO.OX.	23.	23.	23.	22.	22.	22.	22.
Si	6.654	6.630	6.627	5.705	5.738	5.759	5.742
Al iv	1.346	1.370	1.373	2.295	2.262	2.241	2.258
Al vi	0.468	0.534	0.537	0.677	0.750	0.712	0.704
Ti	0.143	0.130	0.104	0.209	0.223	0.213	0.211
Fe	1.817	1.862	1.876	1.890	1.921	1.912	1.956
Mn	0.030	0.031	0.021	0.015	0.009	0.017	0.016
Mg	2.664	2.588	2.619	3.113	3.047	3.101	3.034
Ca	1.876	1.883	1.904	0.009	0.000	0.002	0.000
Na	0.395	0.363	0.381	0.028	0.031	0.031	0.026
K	0.144	0.135	0.106	1.325	1.099	1.140	1.256
Cr	0.019	0.007	0.005	0.008	0.012	0.007	0.002
Total	15.556	15.533	15.555	15.273	15.092	15.134	15.206
Mg/Mg+Fe	0.594	0.582	0.583	0.622	0.613	0.619	0.608
Ca Ca	0.295	0.297	0.298	0.000	0.000	0.000	0.000
Mg Na	0.419	0.409	0.409	0.000	0.000	0.000	0.000
Fe K	0.286	0.294	0.293	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51504

Mineral	Bi	Bi	Bi	Bi	FELD	FELD	FELD
SiO2	38.67	38.47	39.21	39.18	59.64	58.51	59.20
TiO2	2.03	1.99	1.89	2.12	0.00	0.00	0.01
Al2O3	17.00	17.00	17.10	17.05	27.01	27.06	27.13
FeO	15.22	15.83	16.27	15.59	0.00	0.06	0.00
MnO	0.15	0.10	0.07	0.02	0.00	0.00	0.00
MgO	14.13	14.23	13.99	14.44	0.01	0.02	0.00
CaO	0.00	0.01	0.00	0.01	8.74	8.65	8.79
Na2O	0.10	0.09	0.11	0.11	6.50	6.39	6.36
K2O	6.76	7.16	6.08	6.88	0.07	0.03	0.00
Cr2O3	0.11	0.07	0.10	0.10	0.00	0.00	0.00
Total	94.17	94.95	94.82	95.50	101.97	100.72	101.49

Structural Formula

NO.OX.	22.	22.	22.	22.	32.	32.	32.
Si	5.713	5.670	5.746	5.712	10.442	10.377	10.410
Al iv	2.287	2.330	2.254	2.288	5.575	5.658	5.624
Al vi	0.674	0.623	0.700	0.643	0.000	0.000	0.000
Ti	0.226	0.221	0.208	0.232	0.000	0.000	0.001
Fe	1.881	1.951	1.994	1.901	0.000	0.009	0.000
Mn	0.019	0.012	0.009	0.002	0.000	0.000	0.000
Mg	3.111	3.126	3.055	3.137	0.003	0.005	0.000
Ca	0.000	0.002	0.000	0.002	1.640	1.644	1.656
Na	0.029	0.026	0.031	0.031	2.207	2.197	2.169
K	1.274	1.346	1.137	1.280	0.016	0.007	0.000
Cr	0.013	0.008	0.012	0.012	0.000	0.000	0.000
Total	15.226	15.315	15.147	15.240	19.882	19.896	19.861
Mg/Mg+Fe	0.623	0.616	0.605	0.623	1.000	0.373	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.425	0.427	0.433
Mg Na	0.000	0.000	0.000	0.000	0.571	0.571	0.567
Fe K	0.000	0.000	0.000	0.000	0.004	0.002	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51504

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	53.58	59.47	63.25	58.69	58.69	60.22	59.60
TiO2	0.00	0.00	0.02	0.00	0.00	0.03	0.00
Al2O3	25.17	28.71	25.70	26.84	27.09	27.22	26.85
FeO	0.09	0.08	0.12	0.13	0.10	0.02	0.02
MnO	0.01	0.00	0.00	0.01	0.02	0.05	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.02
CaO	11.93	8.62	6.73	8.62	8.71	8.50	8.33
Na2O	5.98	6.58	5.14	6.35	6.32	6.70	6.59
K2O	0.24	0.06	0.04	0.02	0.03	0.03	0.06
Cr2O3	0.01	0.01	0.00	0.01	0.00	0.00	0.01
Total	97.01	101.53	101.00	100.67	100.96	102.77	101.48

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.056	10.462	10.982	10.412	10.384	10.456	10.474
Al iv	5.569	5.539	5.261	5.613	5.650	5.572	5.563
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.003	0.000	0.000	0.004	0.000
Fe	0.014	0.012	0.017	0.019	0.015	0.003	0.003
Mn	0.002	0.000	0.000	0.002	0.003	0.007	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.005
Ca	2.399	1.625	1.252	1.639	1.651	1.581	1.569
Na	2.176	2.244	1.731	2.184	2.168	2.256	2.246
K	0.057	0.013	0.009	0.005	0.007	0.007	0.013
Cr	0.001	0.001	0.000	0.001	0.000	0.000	0.001
Total	20.275	19.897	19.254	19.875	19.878	19.885	19.874
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.641
Ca Ca	0.518	0.418	0.419	0.428	0.432	0.411	0.410
Hg Na	0.470	0.578	0.578	0.571	0.567	0.587	0.587
Fe K	0.012	0.003	0.003	0.001	0.002	0.002	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51504

Mineral	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.09	60.65	60.55	59.51	60.12	62.10
TiO2	0.00	0.01	0.01	0.00	0.00	0.00
Al2O3	26.38	26.81	26.96	27.42	26.82	27.13
FeO	0.04	0.04	0.01	0.01	0.12	0.17
MnO	0.04	0.03	0.00	0.04	0.00	0.05
MgO	0.00	0.01	0.00	0.00	0.00	0.00
CaO	8.16	8.07	8.62	8.70	8.30	8.43
Na2O	6.78	6.54	6.63	6.54	6.78	4.29
K2O	0.00	0.01	0.02	0.04	0.04	0.03
Cr2O3	0.02	0.00	0.00	0.04	0.00	0.00
Total	101.51	102.17	102.80	102.30	102.18	102.20

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.
Si	10.551	10.560	10.503	10.390	10.498	10.709
Al iv	5.461	5.503	5.513	5.644	5.521	5.515
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.001	0.001	0.000	0.000	0.000
Fe	0.006	0.006	0.001	0.001	0.018	0.025
Mn	0.006	0.004	0.000	0.006	0.000	0.007
Mg	0.000	0.003	0.000	0.000	0.000	0.000
Ca	1.535	1.506	1.602	1.628	1.553	1.558
Na	2.308	2.208	2.230	2.214	2.296	1.434
K	0.000	0.002	0.004	0.009	0.009	0.007
Cr	0.003	0.000	0.000	0.006	0.000	0.000
Total	19.871	19.793	19.856	19.897	19.894	19.254
Mg/Mg+Fe	0.000	0.308	0.000	0.000	0.000	0.000
Ca Ca	0.399	0.405	0.418	0.423	0.403	0.519
Mg Na	0.601	0.594	0.581	0.575	0.595	0.478
Fe K	0.000	0.001	0.001	0.002	0.002	0.002

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51505

Mineral	Anph	Anph	Anph	Anph	Bi	Bi	Bi
SiO2	45.26	45.06	45.74	44.71	37.71	38.75	37.78
TiO2	1.12	1.05	1.09	1.01	1.67	1.52	1.33
Al2O3	11.50	10.88	10.39	10.83	17.91	18.21	19.37
FeO	14.52	14.66	15.44	14.29	15.62	14.82	14.60
MnO	0.25	0.30	0.35	0.22	0.10	0.00	0.07
HgO	11.54	12.10	12.09	12.04	14.01	14.22	15.18
CaO	11.01	10.98	10.19	11.34	0.02	0.00	0.06
Na2O	1.24	1.15	1.15	1.23	0.10	0.17	0.15
K2O	0.39	0.41	0.46	0.46	6.65	5.70	5.69
Cr2O3	0.00	0.00	0.01	0.00	0.00	0.07	0.00
Total	96.83	96.59	96.91	96.13	93.79	* 93.46	94.23

Structural Formula

NO.OX.	23.	23.	23.	23.	22.	22.	22.
Si	6.701	6.702	6.785	6.686	5.606	5.704	5.521
Al iv	1.299	1.298	1.215	1.314	2.394	2.296	2.479
Al vi	0.708	0.610	0.602	0.595	0.745	0.864	0.858
Ti	0.125	0.117	0.122	0.114	0.187	0.168	0.146
Fe	1.798	1.824	1.915	1.787	1.942	1.824	1.784
Mn	0.031	0.038	0.044	0.028	0.013	0.000	0.009
Hg	2.546	2.682	2.673	2.683	3.104	3.119	3.306
Ca	1.747	1.750	1.620	1.817	0.003	0.000	0.009
Na	0.356	0.332	0.331	0.357	0.029	0.049	0.043
K	0.074	0.078	0.087	0.088	1.261	1.070	1.061
Cr	0.000	0.000	0.001	0.000	0.000	0.008	0.000
Total	15.385	15.431	15.394	15.468	15.283	15.103	15.216
Hg/Hg+Fe	0.586	0.595	0.583	0.600	0.615	0.631	0.649
Ca Ca	0.287	0.280	0.261	0.289	0.000	0.000	0.000
Hg Na	0.418	0.429	0.431	0.427	0.000	0.000	0.000
Fe K	0.295	0.292	0.309	0.284	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51505

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2 *	49.06	48.36	49.32	48.29	49.14	47.29	47.31
TiO2	0.04	0.00	0.00	0.03	0.00	0.00	0.00
Al2O3	31.74	32.21	31.65	31.76	31.94	31.14	32.56
FeO	0.00	0.04	0.04	0.06	0.01	0.17	0.01
MnO	0.00	0.00	0.00	0.01	0.00	0.09	0.00
MgO	0.00	0.00	0.00	0.00	0.01	0.01	0.00
CaO	15.47	16.24	15.21	15.90	15.25	15.64	16.25
Na2O	2.98	2.48	3.11	2.88	3.05	2.83	2.30
K2O	0.01	0.01	0.02	0.00	0.00	0.00	0.00
Cr2O3	0.04	0.00	0.01	0.02	0.01	0.05	0.02
Total	99.34	99.34	99.36	98.95	99.41	97.22	98.45

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	9.031	8.918	9.071	8.948	9.032	8.931	8.808
Al iv	6.888	7.003	6.863	6.938	6.921	6.933	7.147
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.006	0.000	0.000	0.004	0.000	0.000	0.000
Fe	0.000	0.006	0.006	0.009	0.002	0.027	0.002
Mn	0.000	0.000	0.000	0.002	0.000	0.014	0.000
Mg	0.000	0.000	0.000	0.000	0.003	0.003	0.000
Ca	3.052	3.209	2.998	3.157	3.004	3.165	3.242
Na	1.064	0.887	1.109	1.035	1.087	1.036	0.830
K	0.002	0.002	0.005	0.000	0.000	0.000	0.000
Cr	0.006	0.000	0.001	0.003	0.001	0.007	0.003
Total	20.049	20.025	20.053	20.095	20.050	20.117	20.032
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.641	0.095	0.000
Ca Ca	0.741	0.783	0.729	0.753	0.734	0.753	0.796
Mg Na	0.258	0.216	0.270	0.247	0.266	0.247	0.204
Fe K	0.001	0.001	0.001	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51505

Mineral	FELD
SiO2	47.83
TiO2	0.00
Al2O3	31.53
FeO	0.00
MnO	0.00
HgO	0.00
CaO	15.19
Na2O	3.15
K2O	0.01
Cr2O3	0.00
Total	97.71

Structural Formula

NO.OX.	32.
Si	8.964
Al iv	6.963
Al vi	0.000
Ti	0.000
Fe	0.000
Mn	0.000
Hg	0.000
Ca	3.050
Na	1.145
K	0.002
Cr	0.000
Total	20.127

Hg/Mg+Fe 0.000

Ca Ca	0.727
Hg Na	0.273
Fe K	0.001

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51508

Mineral	Px	Anph	Anph	Anph	Feld(3)	Feld(3)
SiO2	51.13	48.00	46.66	47.73	56.43	55.97
TiO2	0.16	0.91	1.22	0.89	0.00	0.00
Al2O3	5.07	6.86	8.47	7.91	26.93	27.85
FeO	9.47	10.28	9.79	10.25	0.00	0.00
MnO	0.29	0.19	0.16	0.18	0.00	0.00
MgO	17.19	16.06	15.44	15.58	0.00	0.00
CaO	12.96	12.50	12.76	12.49	9.05	9.92
Na2O	0.58	0.86	0.99	1.01	6.30	5.91
K2O	0.28	0.49	0.60	0.58	0.10	0.10
Cr2O3	0.26	0.24	0.15	0.15	0.00	0.00
Total	97.39	96.39	96.24	96.77	98.81	99.75

Structural Formula

NO.OX.	6.	23.	23.	23.	32.	32.
Si	1.915	7.031	6.850	6.964	10.240	10.084
Al _{iv}	0.085	0.969	1.150	1.036	5.761	5.915
Al _{vi}	0.139	0.216	0.316	0.324	0.000	0.000
Ti	0.005	0.100	0.135	0.098	0.000	0.000
Fe	0.297	1.259	1.202	1.251	0.000	0.000
Mn	0.009	0.024	0.020	0.022	0.000	0.000
Mg	0.960	3.506	3.378	3.388	0.000	0.000
Ca	0.520	1.962	2.007	1.953	1.760	1.915
Na	0.042	0.244	0.282	0.286	2.217	2.065
K	0.013	0.092	0.112	0.108	0.023	0.023
Cr	0.008	0.028	0.017	0.017	0.000	0.000
Total	3.992	15.430	15.470	15.446	20.000	20.002
Mg/Mg+Fe	0.764	0.736	0.738	0.730	0.000	0.000
Ca Ca	0.293	0.292	0.305	0.296	0.440	0.478
Mg Na	0.540	0.521	0.513	0.514	0.554	0.516
Fe K	0.167	0.187	0.182	0.190	0.006	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51603

Mineral	Bi	Gar	Gar	Gar	Feld(3)	Feld(3)	Feld(3)
SiO2	31.83	36.29	36.04	36.37	66.47	64.00	65.94
TiO2	3.23	0.00	0.00	0.01	0.00	0.00	0.00
Al2O3	18.20	20.76	20.57	20.62	18.80	21.31	18.65
FeO	32.20	34.91	34.50	34.19	0.00	0.00	0.00
MnO	0.08	5.85	5.48	5.48	0.00	0.00	0.00
MgO	1.00	0.50	0.51	0.68	0.00	0.00	0.00
CaO	0.00	2.66	2.66	3.34	0.00	2.65	0.00
Na2O	0.07	0.03	0.00	0.13	0.76	9.92	1.25
K2O	9.07	0.01	0.00	0.01	16.25	0.16	15.37
Cr2O3	0.00	0.00	0.07	0.01	0.00	0.00	0.00
Total	95.68	101.01	99.83	100.84	102.28	98.04	101.21

Structural Formula

NO.OX.	22.	12.	12.	12.	32.	32.	32.
Si	5.185	2.961	2.969	2.965	11.998	11.490	11.997
Al _{iv}	2.815	0.000	0.000	0.000	4.000	4.510	4.000
Al _{vi}	0.681	1.997	1.998	1.982	0.000	0.000	0.000
Ti	0.396	0.000	0.000	0.001	0.000	0.000	0.000
Fe	4.387	2.382	2.377	2.331	0.000	0.000	0.000
Mn	0.011	0.404	0.382	0.378	0.000	0.000	0.000
Mg	0.243	0.061	0.063	0.083	0.000	0.000	0.000
Ca	0.000	0.233	0.235	0.292	0.000	0.510	0.000
Na	0.022	0.005	0.000	0.021	0.266	3.453	0.441
K	1.885	0.001	0.000	0.001	3.742	0.037	3.568
Cr	0.000	0.000	0.005	0.000	0.000	0.000	0.000
Total	15.625	8.043	8.029	8.054	20.006	20.000	20.007
Mg/Mg+Fe	0.052	0.025	0.026	0.034	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.127	0.000
Mg Na	0.000	0.000	0.000	0.000	0.066	0.863	0.110
Fe K	0.000	0.000	0.000	0.000	0.934	0.009	0.890

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51603

Mineral	Feld(3)	Feld(3)
SiO2	62.48	66.09
TiO2	0.00	0.00
Al2O3	20.57	18.78
FeO	0.00	0.00
MnO	0.00	0.00
MgO	0.00	0.00
CaO	2.39	0.07
Na2O	9.76	1.53
K2O	0.15	14.95
Cr2O3	0.00	0.00
Total	95.35	101.42

Structural Formula

NO.OX.	32.	32.
Si	11.527	11.983
Al iv	4.474	4.014
Al vi	0.000	0.000
Ti	0.000	0.000
Fe	0.000	0.000
Mn	0.000	0.000
Mg	0.000	0.000
Ca	0.472	0.014
Na	3.491	0.538
K	0.035	3.458
Cr	0.000	0.000
Total	20.000	20.008
Mg/Mg+Fe	0.000	0.000
Ca Ca	0.118	0.003
Mg Na	0.873	0.134
Fe K	0.009	0.862

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51604

Mineral	Px	Px	Px	Px	Amph	Bi	Bi
SiO2	54.15	52.38	53.28	53.94	44.62	36.88	38.43
TiO2	0.00	0.02	0.01	0.00	0.22	0.59	1.70
Al2O3	1.07	2.05	1.07	0.91	10.83	17.54	16.75
FeO	24.36	24.31	23.45	24.38	19.04	16.84	16.19
MnO	1.56	1.48	1.66	1.90	0.54	0.04	0.09
MgO	16.13	14.99	16.15	16.15	9.96	13.78	14.65
CaO	1.28	2.13	1.37	0.85	10.44	0.12	0.02
Na2O	0.05	0.12	0.05	0.06	0.98	0.07	0.01
K2O	0.00	0.08	0.06	0.01	0.49	8.05	6.77
Cr2O3	0.00	0.00	0.08	0.03	0.00	0.01	0.00
Total	98.60	97.56	97.18	98.23	97.12	93.92	94.61

Structural Formula

NO.OX.	6.	6.	6.	6.	23.	22.	22.
Si	2.065	2.030	2.060	2.067	6.734	5.570	5.680
Al iv	0.000	0.000	0.000	0.000	1.266	2.430	2.320
Al vi	0.048	0.094	0.049	0.041	0.661	0.693	0.599
Ti	0.000	0.001	0.000	0.000	0.025	0.067	0.189
Fe	0.777	0.788	0.758	0.781	2.403	2.127	2.001
Mn	0.050	0.049	0.054	0.062	0.069	0.005	0.011
Mg	0.917	0.866	0.930	0.922	2.240	3.102	3.227
Ca	0.052	0.088	0.057	0.035	1.688	0.019	0.003
Na	0.004	0.009	0.004	0.004	0.287	0.020	0.003
K	0.000	0.004	0.003	0.000	0.094	1.551	1.277
Cr	0.000	0.000	0.002	0.000	0.000	0.001	0.000
Total	3.913	3.929	3.918	3.914	15.468	15.586	15.311
Mg/Mg+Fe	0.541	0.524	0.551	0.541	0.482	0.593	0.617
Ca Ca	0.030	0.051	0.033	0.020	0.267	0.000	0.000
Mg Na	0.525	0.497	0.533	0.531	0.354	0.000	0.000
Fe K	0.445	0.452	0.434	0.449	0.380	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51604

Mineral	Bi	Bi	Bi	Bi	Bi	Bi	Bi
SiO2	36.69	36.52	35.99	36.05	35.03	37.17	35.13
TiO2	3.36	3.64	3.47	3.21	3.42	2.58	3.46
Al2O3	16.17	15.96	15.63	15.86	15.71	16.23	16.25
FeO	19.12	21.52	20.93	21.41	21.86	20.94	21.70
MnO	0.00	0.15	0.12	0.11	0.15	0.14	0.87
HgO	11.20	9.58	9.42	9.42	9.26	11.16	9.37
CaO	0.00	0.00	0.04	0.00	0.00	0.01	0.00
Na2O	0.04	0.09	0.07	0.00	0.07	0.05	0.09
K2O	8.69	8.84	8.67	9.10	9.44	8.47	9.17
Cr2O3	0.03	0.00	0.00	0.05	0.00	0.00	0.00
Total	95.30	96.30	94.34	95.21	94.94	96.75	96.04

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	22.	22.
Si	5.554	5.546	5.571	5.551	5.455	5.576	5.405
Al iv	2.446	2.454	2.429	2.449	2.545	2.424	2.595
Al vi	0.440	0.403	0.423	0.430	0.339	0.447	0.353
Ti	0.383	0.416	0.404	0.372	0.401	0.291	0.400
Fe	2.421	2.733	2.710	2.757	2.847	2.627	2.792
Mn	0.000	0.019	0.016	0.014	0.020	0.018	0.113
Hg	2.527	2.168	2.173	2.162	2.149	2.495	2.149
Ca	0.000	0.000	0.007	0.000	0.000	0.002	0.000
Na	0.012	0.027	0.021	0.000	0.021	0.015	0.027
K	1.678	1.713	1.712	1.788	1.875	1.621	1.800
Cr	0.004	0.000	0.000	0.006	0.000	0.000	0.000
Total	15.464	15.479	15.465	15.529	15.651	15.515	15.634
Hg/Mg+Fe	0.511	0.442	0.445	0.439	0.430	0.487	0.435
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51604

Mineral	Bi	Gar	Gar	Gar	Gar	Gar	Gar
SiO2	35.80	38.70	38.61	38.87	38.56	38.42	38.09
TiO2	2.86	0.01	0.00	0.00	0.03	0.01	0.00
Al2O3	15.82	20.53	20.47	20.50	20.61	20.39	20.39
FeO	20.88	30.83	30.19	30.27	29.25	29.54	31.27
MnO	0.24	4.53	3.27	2.89	2.66	2.89	3.44
HgO	10.39	3.39	4.21	3.86	4.32	4.27	2.60
CaO	0.00	3.82	4.27	4.34	4.33	4.59	3.62
Na2O	0.07	0.00	0.05	0.01	0.01	0.01	0.02
K2O	9.43	0.01	0.02	0.00	0.00	0.00	0.00
Cr2O3	0.02	0.01	0.00	0.02	0.00	0.00	0.00
Total	95.21	101.83	101.09	100.76	99.77	100.12	99.43

Structural Formula

NO.OX.	22.	12.	12.	12.	12.	12.	12.
Si	5.510	3.045	3.041	3.065	3.056	3.046	3.066
Al ^{iv}	2.490	0.000	0.000	0.000	0.000	0.000	0.000
Al ^{vi}	0.380	1.904	1.901	1.906	1.926	1.906	1.935
Ti	0.331	0.001	0.000	0.000	0.002	0.001	0.000
Fe	2.688	2.029	1.989	1.996	1.939	1.959	2.105
Mn	0.031	0.302	0.218	0.193	0.179	0.194	0.235
Hg	2.383	0.398	0.494	0.454	0.510	0.505	0.312
Ca	0.000	0.322	0.360	0.367	0.368	0.390	0.312
Na	0.021	0.000	0.008	0.002	0.002	0.002	0.003
K	1.793	0.001	0.002	0.000	0.000	0.000	0.000
Cr	0.002	0.001	0.000	0.001	0.000	0.000	0.000
Total	15.629	8.002	8.013	7.983	7.980	8.001	7.968
Hg/Mg+Fe	0.470	0.164	0.199	0.185	0.208	0.205	0.129
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51604

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.64	60.36	59.68	60.79	59.99	60.33	59.99
TiO2	0.00	0.00	0.00	0.01	0.00	0.01	0.01
Al2O3	25.80	25.79	25.58	26.02	26.36	26.05	25.54
FeO	0.00	0.00	0.00	0.01	0.00	0.02	0.06
MnO	0.00	0.00	0.00	0.03	0.00	0.00	0.00
HgO	0.01	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.32	7.27	7.02	7.64	7.69	7.32	7.18
Na2O	6.54	6.90	6.47	6.55	6.54	6.44	6.96
K2O	0.11	0.06	0.09	0.04	0.08	0.09	0.10
Cr2O3	0.10	0.00	0.07	0.00	0.00	0.00	0.02
Total	100.52	100.38	98.91	101.09	100.66	100.26	99.86

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.704	10.681	10.697	10.676	10.593	10.672	10.680
Al ^{iv}	5.369	5.380	5.405	5.387	5.487	5.432	5.361
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.001	0.000	0.001	0.001
Fe	0.000	0.000	0.000	0.001	0.000	0.003	0.009
Mn	0.000	0.000	0.000	0.004	0.000	0.000	0.000
Hg	0.003	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.384	1.378	1.348	1.438	1.455	1.387	1.370
Na	2.238	2.367	2.249	2.231	2.239	2.209	2.403
K	0.025	0.014	0.021	0.009	0.018	0.020	0.023
Cr	0.014	0.000	0.010	0.000	0.000	0.000	0.003
Total	19.737	19.820	19.730	19.748	19.792	19.725	19.849
Hg/Mg+Fe	1.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.380	0.367	0.373	0.391	0.392	0.384	0.361
Mg Na	0.614	0.630	0.622	0.607	0.603	0.611	0.633
Fe K	0.007	0.004	0.006	0.002	0.005	0.006	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51604

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.65	59.33	60.97	57.79	60.98	59.56	61.42
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Al2O3	25.87	25.93	25.74	27.64	25.92	25.33	25.71
FeO	0.00	0.28	0.13	0.06	0.00	0.11	0.01
MnO	0.01	0.00	0.00	0.00	0.01	0.04	0.02
MgO	0.00	0.01	0.01	0.00	0.00	0.01	0.06
CaO	7.50	7.36	6.75	9.62	7.35	7.24	7.51
Na2O	6.52	6.34	6.54	5.88	6.51	6.36	6.57
K2O	0.12	0.11	0.09	0.07	0.12	0.08	0.29
Cr2O3	0.03	0.00	0.00	0.02	0.00	0.01	0.00
Total	100.70	99.36	100.23	101.08	100.89	98.74	101.60

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.692	10.614	10.767	10.240	10.718	10.705	10.738
Al iv	5.376	5.469	5.359	5.774	5.371	5.367	5.299
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.001
Fe	0.000	0.042	0.019	0.009	0.000	0.017	0.001
Mn	0.001	0.000	0.000	0.000	0.001	0.006	0.003
Mg	0.000	0.003	0.003	0.000	0.000	0.003	0.016
Ca	1.417	1.411	1.277	1.827	1.384	1.394	1.407
Na	2.229	2.199	2.239	2.020	2.219	2.217	2.227
K	0.027	0.025	0.020	0.016	0.027	0.018	0.065
Cr	0.004	0.000	0.000	0.003	0.000	0.001	0.000
Total	19.746	19.763	19.684	19.889	19.720	19.728	19.757
Hg/Mg+Fe	0.000	0.060	0.121	0.000	0.000	0.139	0.914
Ca Ca	0.386	0.388	0.361	0.473	0.381	0.384	0.380
Mg Na	0.607	0.605	0.633	0.523	0.611	0.611	0.602
Fe K	0.007	0.007	0.006	0.004	0.007	0.005	0.017

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51604

Mineral	FELD	FELD	FELD
SiO2	58.05	60.99	60.28
TiO2	0.00	0.00	0.05
Al2O3	26.32	25.65	26.11
FeO	0.00	0.04	0.04
MnO	0.00	0.02	0.01
MgO	0.00	0.00	0.00
CaO	8.79	7.55	7.99
Na2O	5.69	6.89	6.51
K2O	0.08	0.11	0.13
Cr2O3	0.00	0.05	0.02
Total	98.93	101.30	101.14

Structural Formula

NO.OX.	32.	32.	32.
Si	10.458	10.707	10.609
Al iv	5.590	5.308	5.417
Al vi	0.000	0.000	0.000
Ti	0.000	0.000	0.007
Fe	0.000	0.006	0.006
Mn	0.000	0.003	0.001
Mg	0.000	0.000	0.000
Ca	1.697	1.420	1.507
Na	1.988	2.345	2.222
K	0.018	0.025	0.029
Cr	0.000	0.007	0.003
Total	19.750	19.821	19.800
Mg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.458	0.375	0.401
Mg Na	0.537	0.619	0.591
Fe K	0.005	0.007	0.008

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51605

Mineral	Px	Px	Anph	Anph	Bi	Bi	FELD
SiO2	50.43	50.27	42.62	42.48	35.56	35.43	58.38
TiO2	0.17	0.10	1.65	1.64	3.92	4.25	0.14
Al2O3	1.26	1.22	11.19	11.19	14.84	14.60	25.56
FeO	30.62	29.98	18.86	18.70	19.98	19.56	0.12
MnO	0.55	0.73	0.23	0.24	0.03	0.12	0.02
HgO	16.86	16.64	9.73	9.80	11.29	11.14	0.00
CaO	0.59	0.57	10.45	10.47	0.00	0.00	7.58
Na2O	0.02	0.02	1.48	1.54	0.03	0.06	7.37
K2O	0.02	0.00	0.80	0.81	9.24	9.41	0.21
Cr2O3	0.08	0.00	0.13	0.15	0.07	0.12	0.00
Total	100.60	99.53	97.14	97.02	94.96	94.69	99.38

Structural Formula

NO.OX.	6.	6.	23.	23.	22.	22.	32.
Si	1.948	1.959	6.480	6.468	5.477	5.476	10.514
Al iv	0.052	0.041	1.520	1.532	2.523	2.524	5.427
Al vi	0.006	0.015	0.486	0.476	0.172	0.137	0.000
Ti	0.005	0.003	0.189	0.188	0.454	0.494	0.019
Fe	0.989	0.977	2.398	2.381	2.574	2.528	0.018
Mn	0.018	0.024	0.030	0.031	0.004	0.016	0.003
Hg	0.971	0.966	2.205	2.224	2.592	2.566	0.000
Ca	0.024	0.024	1.702	1.708	0.000	0.000	1.463
Na	0.001	0.002	0.436	0.455	0.009	0.018	2.574
K	0.001	0.000	0.155	0.157	1.816	1.856	0.048
Cr	0.002	0.000	0.016	0.018	0.009	0.015	0.000
Total	4.018	4.011	15.616	15.637	15.629	15.629	20.065
Hg/Mg+Fe	0.495	0.497	0.479	0.483	0.502	0.504	0.000
Ca Ca	0.012	0.012	0.270	0.271	0.000	0.000	0.358
Hg Na	0.489	0.491	0.350	0.352	0.000	0.000	0.630
Fe K	0.499	0.497	0.380	0.377	0.000	0.000	0.012

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51405

Mineral	FELD	FELD
SiO2	58.74	57.68
TiO2	0.02	0.00
Al2O3	25.06	25.03
FeO	0.02	0.09
MnO	0.00	0.03
HgO	0.00	0.00
CaO	7.33	7.53
Na2O	7.21	7.10
K2O	0.23	0.20
Cr2O3	0.01	0.00
Total	98.62	97.66

Structural Formula

NO.OX.	32.	32.
Si	10.629	10.559
Al iv	5.346	5.402
Al vi	0.000	0.000
Ti	0.003	0.000
Fe	0.003	0.014
Mn	0.000	0.005
Hg	0.000	0.000
Ca	1.421	1.477
Na	2.530	2.520
K	0.053	0.047
Cr	0.001	0.000
Total	19.986	20.023
Hg/Hg+Fe	0.000	0.000
Ca Ca	0.355	0.365
Hg Na	0.632	0.623
Fe K	0.013	0.012

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51607

Mineral	Bi	Bi	Gar	Gar	Feld(3)	Feld(3)	Feld(3)
SiO2	33.24	34.50	36.71	36.91	63.38	65.67	63.73
TiO2	2.90	3.04	0.03	0.04	0.00	0.00	0.00
Al2O3	17.30	17.73	20.53	20.11	21.78	18.57	22.33
FeO	22.79	23.30	26.78	25.59	0.00	0.00	0.00
MnO	0.24	0.18	11.79	11.13	0.00	0.00	0.00
HgO	7.91	7.85	1.89	2.33	0.00	0.00	0.00
CaO	0.00	0.00	2.42	3.25	3.18	0.00	3.56
Na2O	0.00	0.03	0.04	0.09	9.60	1.05	9.53
K2O	9.46	9.52	0.00	0.01	0.20	15.60	0.17
Cr2O3	0.03	0.01	0.04	0.00	0.00	0.00	0.00
Total	93.87	96.16	100.23	99.46	98.14	100.89	99.32

Structural Formula

NO.OX.	22.	22.	12.	12.	32.	32.	32.
Si	5.278	5.331	2.984	3.007	11.387	11.998	11.323
Al iv	2.722	2.669	0.000	0.000	4.613	4.000	4.677
Al vi	0.516	0.561	1.967	1.931	0.000	0.000	0.000
Ti	0.346	0.353	0.002	0.002	0.000	0.000	0.000
Fe	3.026	3.011	1.820	1.743	0.000	0.000	0.000
Mn	0.032	0.024	0.812	0.768	0.000	0.000	0.000
Hg	1.872	1.808	0.229	0.283	0.000	0.000	0.000
Ca	0.000	0.000	0.211	0.284	0.612	0.000	0.678
Na	0.000	0.009	0.006	0.014	3.344	0.372	3.283
K	1.916	1.877	0.000	0.001	0.046	3.636	0.039
Cr	0.004	0.001	0.003	0.000	0.000	0.000	0.000
Total	15.713	15.643	8.033	8.033	20.002	20.006	19.999
Hg/Hg+Fe	0.382	0.375	0.112	0.140	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.153	0.000	0.169
Hg Na	0.000	0.000	0.000	0.000	0.836	0.093	0.821
Fe K	0.000	0.000	0.000	0.000	0.011	0.907	0.010

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51607

Mineral Feld(3)

SiO2	65.62
TiO2	0.00
Al2O3	18.56
FeO	0.00
MnO	0.00
MgO	0.00
CaO	0.00
Na2O	0.73
K2O	16.08
Cr2O3	0.00

Total 100.99

Structural Formula

NO.OX. 32.

Si	11.997
Al iv	4.000
Al vi	0.000
Ti	0.000
Fe	0.000
Mn	0.000
Mg	0.000
Ca	0.000
Na	0.259
K	3.751
Cr	0.000

Total 20.007

Hg/Hg+Fe 0.000

Ca Ca	0.000
Hg Na	0.065
Fe K	0.935

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51702

Mineral	Anph	Anph	Anph	Anph	Anph	Bi	Bi
SiO2	45.42	45.00	44.01	44.93	45.25	38.43	38.43
TiO2	1.07	0.97	0.66	0.91	0.73	2.02	1.79
Al2O3	10.49	11.16	12.35	10.75	10.64	16.81	16.99
FeO	17.66	17.66	18.00	17.79	18.45	17.98	17.09
MnO	0.35	0.44	0.41	0.32	0.27	0.23	0.22
MgO	10.68	10.47	9.59	10.44	10.63	12.95	12.96
CaO	12.08	11.97	11.85	11.75	11.67	0.00	0.00
Na2O	1.28	1.41	1.38	1.21	1.22	0.19	0.19
K2O	0.79	0.71	0.63	0.71	0.97	9.24	9.67
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Total	99.82	99.79	98.88	98.81	99.83	97.85	97.40

Structural Formula

NO.OX.	23.	23.	23.	23.	23.	22.	22.
Si	6.668	6.610	6.531	6.660	6.662	5.628	5.643
Al ^{iv}	1.332	1.390	1.469	1.340	1.338	2.372	2.357
Al ^{vi}	0.483	0.542	0.692	0.539	0.509	0.530	0.585
Ti	0.118	0.107	0.074	0.101	0.081	0.222	0.198
Fe	2.168	2.169	2.234	2.205	2.272	2.202	2.099
Mn	0.044	0.055	0.052	0.040	0.034	0.029	0.027
Mg	2.337	2.292	2.121	2.306	2.332	2.826	2.836
Ca	1.900	1.884	1.884	1.866	1.841	0.000	0.000
Na	0.364	0.402	0.397	0.348	0.348	0.054	0.054
K	0.148	0.133	0.119	0.134	0.182	1.726	1.812
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.007
Total	15.562	15.584	15.573	15.540	15.599	15.589	15.618
Mg/Mg+Fe	0.519	0.514	0.487	0.511	0.507	0.562	0.575
Ca Ca	0.297	0.297	0.302	0.293	0.286	0.000	0.000
Mg Na	0.365	0.361	0.340	0.362	0.362	0.000	0.000
Fe K	0.339	0.342	0.358	0.346	0.352	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51702

Mineral	Bi	Bi	FELD	FELD	FELD	FELD	FELD
SiO2	38.03	38.22	60.44	58.58	58.90	60.02	60.40
TiO2	1.93	1.95	0.00	0.00	0.00	0.00	0.00
Al2O3	16.42	16.61	26.41	27.41	27.54	26.82	26.72
FeO	16.82	17.22	0.00	0.02	0.02	0.00	0.06
MnO	0.11	0.17	0.00	0.00	0.00	0.00	0.00
MgO	12.92	12.73	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	8.46	9.71	9.36	8.22	8.23
Na2O	0.18	0.17	6.66	5.94	6.19	6.80	6.88
K2O	9.67	9.58	0.00	0.00	0.00	0.08	0.00
Cr2O3	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Total	96.15	96.65	101.67	101.66	102.01	101.94	102.29

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	5.659	5.661	10.581	10.310	10.325	10.500	10.528
Al iv	2.341	2.339	5.451	5.687	5.691	5.531	5.491
Al vi	0.540	0.561	0.000	0.000	0.000	0.000	0.000
Ti	0.216	0.217	0.000	0.000	0.000	0.000	0.000
Fe	2.093	2.133	0.000	0.003	0.003	0.000	0.009
Mn	0.014	0.021	0.000	0.000	0.000	0.000	0.000
Mg	2.865	2.810	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	1.531	1.831	1.758	1.541	1.537
Na	0.052	0.049	2.261	2.027	2.104	2.307	2.325
K	1.836	1.810	0.000	0.000	0.000	0.018	0.000
Cr	0.008	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.624	15.601	19.824	19.859	19.881	19.897	19.889
Hg/Hg+Fe	0.578	0.568	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.404	0.475	0.455	0.399	0.398
Mg Na	0.000	0.000	0.596	0.525	0.545	0.597	0.602
Fe K	0.000	0.000	0.000	0.000	0.000	0.005	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51702

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	58.37	60.84	59.16	59.41	55.37	58.98	59.26
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	27.88	26.36	26.82	26.81	29.15	27.18	27.16
FeO	0.03	0.05	0.03	0.06	0.00	0.00	0.01
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.06
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	9.91	8.27	9.04	9.10	12.05	9.09	9.43
Na2O	6.08	7.11	6.37	6.39	4.59	6.02	6.16
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	102.27	102.63	101.42	101.77	101.16	101.27	102.08

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.230	10.576	10.423	10.433	9.863	10.393	10.380
Al iv	5.761	5.402	5.570	5.550	6.121	5.646	5.609
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.004	0.007	0.004	0.009	0.000	0.000	0.001
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.009
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.861	1.540	1.707	1.712	2.300	1.716	1.770
Na	2.066	2.396	2.176	2.176	1.585	2.057	2.092
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.923	19.922	19.880	19.880	19.869	19.812	19.861
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.474	0.391	0.440	0.440	0.592	0.455	0.458
Mg Na	0.526	0.609	0.560	0.560	0.408	0.545	0.542
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51702

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.92	60.09	59.21	60.01	58.94	59.35	59.16
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	25.88	26.91	26.98	26.86	27.49	27.64	27.04
FeO	0.06	0.02	0.07	0.04	0.00	0.13	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.07	8.92	9.08	8.51	9.34	9.44	9.71
Na2O	6.84	6.21	6.25	6.24	6.15	5.89	6.14
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.77	102.15	101.59	101.66	101.92	102.45	102.05

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.656	10.487	10.412	10.510	10.337	10.349	10.374
Al ^{iv}	5.337	5.537	5.593	5.546	5.684	5.682	5.590
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.009	0.003	0.010	0.006	0.000	0.019	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.513	1.668	1.711	1.597	1.755	1.764	1.824
Na	2.320	2.101	2.131	2.119	2.091	1.992	2.088
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.835	19.796	19.857	19.777	19.867	19.805	19.875
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.395	0.443	0.445	0.430	0.456	0.470	0.466
Mg Na	0.605	0.557	0.555	0.579	0.544	0.530	0.534
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51702

Mineral	Anph	Anph	Bi	Bi	Epi	FELD	FELD
SiO2	43.89	44.76	37.11	37.76	37.40	59.16	59.11
TiO2	0.98	0.93	1.97	1.96	0.05	0.02	0.07
Al2O3	10.37	10.61	16.82	16.73	22.87	26.44	26.18
FeO	17.42	17.91	17.99	18.27	8.36	0.03	0.09
MnO	0.31	0.35	0.13	0.21	0.24	0.01	0.03
MgO	10.65	10.38	12.71	12.68	0.00	0.00	0.00
CaO	11.63	11.68	0.00	0.00	23.01	7.91	7.72
Na2O	1.35	1.33	0.18	0.12	0.01	7.18	7.06
K2O	0.66	0.81	9.33	8.92	0.00	0.06	0.06
Cr2O3	0.03	0.01	0.00	0.02	0.00	0.02	0.01
Total	97.29	98.77	96.24	96.67	91.94	100.83	100.33

Structural Formula

NO.OX.	23.	23.	22.	22.	25.	32.	32.
Si	6.618	6.652	5.548	5.604	6.353	10.480	10.515
Al iv	1.382	1.348	2.452	2.396	0.000	5.522	5.490
Al vi	0.462	0.511	0.513	0.531	4.580	0.000	0.000
Ti	0.111	0.104	0.222	0.219	0.006	0.003	0.009
Fe	2.197	2.226	2.249	2.268	1.188	0.004	0.013
Mn	0.040	0.044	0.016	0.026	0.035	0.002	0.005
Mg	2.393	2.299	2.832	2.805	0.000	0.000	0.000
Ca	1.879	1.860	0.000	0.000	4.188	1.501	1.471
Na	0.395	0.383	0.052	0.035	0.003	2.466	2.435
K	0.127	0.154	1.780	1.689	0.000	0.014	0.014
Cr	0.004	0.001	0.000	0.002	0.000	0.003	0.001
Total	15.608	15.582	15.664	15.574	16.352	19.995	19.954
Mg/Mg+Fe	0.521	0.508	0.557	0.553	0.000	0.000	0.000
Ca Ca	0.290	0.291	0.000	0.000	0.000	0.377	0.375
Mg Na	0.370	0.360	0.000	0.000	0.000	0.619	0.621
Fe K	0.340	0.349	0.000	0.000	0.000	0.003	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51706

Mineral	Amph	Amph	Bi	Bi	FELD	FELD	FELD
SiO2	45.79	44.20	38.36	38.35	61.25	60.90	60.99
TiO2	1.16	1.05	2.04	2.00	0.00	0.00	0.00
Al2O3	10.31	11.30	16.96	16.67	26.61	26.47	26.35
FeO	17.17	18.19	17.77	18.15	0.02	0.00	0.00
MnO	0.39	0.31	0.25	0.25	0.00	0.00	0.00
HgO	10.42	9.46	12.59	12.46	0.00	0.00	0.00
CaO	11.39	12.08	0.00	0.00	8.00	7.93	7.92
Na2O	1.29	1.32	0.13	0.19	6.60	6.71	6.78
K2O	0.87	0.94	9.44	9.30	0.07	0.05	0.00
Cr2O3	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Total	98.79	98.85	97.59	97.37	102.55	102.06	102.04

Structural Formula

NO.OX.	23.	23.	22.	22.	32.	32.	32.
Si	6.760	6.586	5.633	5.652	10.618	10.612	10.628
Al iv	1.240	1.414	2.367	2.348	5.438	5.438	5.413
Al vi	0.555	0.571	0.569	0.549	0.000	0.000	0.000
Ti	0.129	0.118	0.225	0.222	0.000	0.000	0.000
Fe	2.120	2.267	2.182	2.237	0.003	0.000	0.000
Mn	0.049	0.039	0.031	0.031	0.000	0.000	0.000
Hg	2.293	2.101	2.755	2.737	0.000	0.000	0.000
Ca	1.802	1.929	0.000	0.000	1.486	1.481	1.479
Na	0.369	0.381	0.037	0.054	2.219	2.267	2.291
K	0.164	0.179	1.768	1.749	0.015	0.011	0.000
Cr	0.000	0.000	0.006	0.000	0.000	0.000	0.000
Total	15.480	15.584	15.574	15.579	19.780	19.808	19.811
Hg/Hg+Fe	0.520	0.481	0.558	0.550	0.000	0.000	0.000
Ca Ca	0.290	0.306	0.000	0.000	0.399	0.394	0.392
Hg Na	0.369	0.334	0.000	0.000	0.596	0.603	0.608
Fe K	0.341	0.360	0.000	0.000	0.004	0.003	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51706

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	61.10	59.76	60.86	58.66	60.21	60.17	60.06
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	25.92	26.97	26.64	27.83	26.21	26.70	26.65
FeO	0.00	0.01	0.00	0.00	0.07	0.00	0.22
MnO	0.00	0.00	0.06	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.54	8.51	8.48	9.96	8.19	8.10	8.75
Na2O	6.79	6.41	6.55	5.59	6.38	6.39	6.32
K2O	0.07	0.00	0.06	0.00	0.05	0.06	0.00
Cr2O3	0.00	0.00	0.07	0.00	0.00	0.00	0.00
Total	101.42	101.66	102.72	102.04	101.11	101.42	102.00

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.699	10.475	10.559	10.278	10.597	10.552	10.506
Al iv	5.351	5.573	5.449	5.749	5.438	5.520	5.496
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.001	0.000	0.000	0.010	0.000	0.032
Mn	0.000	0.000	0.009	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.415	1.598	1.576	1.870	1.544	1.522	1.640
Na	2.305	2.179	2.204	1.899	2.177	2.173	2.144
K	0.016	0.000	0.013	0.000	0.011	0.013	0.000
Cr	0.000	0.000	0.010	0.000	0.000	0.000	0.000
Total	19.786	19.827	19.820	19.797	19.778	19.781	19.818
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.379	0.423	0.416	0.496	0.414	0.410	0.433
Mg Na	0.617	0.577	0.581	0.504	0.583	0.586	0.567
Fe K	0.004	0.000	0.004	0.000	0.003	0.004	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51706

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO ₂	60.33	60.87	60.58	57.21	58.11	60.20	60.48
TiO ₂	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al ₂ O ₃	26.50	26.22	26.55	28.23	27.30	26.59	26.59
FeO	0.01	0.02	0.02	0.00	0.11	0.12	0.02
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.37	8.17	8.69	10.76	10.01	8.54	8.23
Na ₂ O	6.25	6.72	6.43	5.34	5.44	6.37	6.46
K ₂ O	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Cr ₂ O ₃	0.10	0.00	0.00	0.00	0.00	0.00	0.06
Total	101.56	102.00	102.33	101.54	100.97	101.82	101.84

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.568	10.621	10.552	10.112	10.297	10.536	10.567
Al _{iv}	5.473	5.394	5.452	5.882	5.703	5.486	5.477
Al _{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.001	0.003	0.003	0.000	0.016	0.018	0.003
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.571	1.528	1.622	2.038	1.901	1.601	1.541
Na	2.123	2.274	2.172	1.830	1.869	2.162	2.189
K	0.000	0.000	0.013	0.000	0.000	0.000	0.000
Cr	0.014	0.000	0.000	0.000	0.000	0.000	0.008
Total	19.750	19.819	19.814	19.862	19.786	19.802	19.785
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca _{Ca}	0.425	0.402	0.426	0.527	0.504	0.426	0.413
Mg _{Na}	0.575	0.598	0.570	0.473	0.496	0.574	0.587
Fe _K	0.000	0.000	0.004	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51706

Mineral	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.38	60.63	60.04	61.81	61.71	60.42
TiO2	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.19	26.35	26.77	25.44	24.76	26.64
FeO	0.00	0.09	0.01	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.18	8.53	8.25	7.36	7.32	8.81
Na2O	6.81	6.50	6.35	7.16	7.25	6.40
K2O	0.00	0.00	0.06	0.07	0.00	0.05
Cr2O3	0.00	0.00	0.06	0.00	0.00	0.00
Total	101.56	102.10	101.54	101.84	101.04	102.32

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.
Si	10.591	10.580	10.526	10.780	10.845	10.529
Al iv	5.416	5.421	5.533	5.231	5.130	5.473
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.013	0.001	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.537	1.595	1.550	1.375	1.378	1.645
Na	2.316	2.199	2.139	2.421	2.471	2.163
K	0.000	0.000	0.013	0.016	0.000	0.011
Cr	0.000	0.000	0.008	0.000	0.000	0.090
Total	19.860	19.809	19.790	19.823	19.825	19.821
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.399	0.420	0.416	0.361	0.358	0.431
Mg Na	0.601	0.580	0.580	0.635	0.642	0.566
Fe K	0.000	0.000	0.004	0.004	0.000	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51706

Mineral	Anph	Anph	Bi	Bi	Epi	FELD	FELD
SiO ₂	43.59	42.59	36.23	36.91	37.26	55.85	57.43
TiO ₂	1.13	1.33	2.07	2.21	0.12	0.00	0.01
Al ₂ O ₃	10.43	10.72	16.58	16.97	23.27	28.27	26.64
FeO	18.27	18.83	17.90	17.84	12.03	0.03	0.05
MnO	0.25	0.33	0.21	0.29	0.17	0.01	0.00
HgO	10.40	9.97	12.78	12.60	0.00	0.00	0.00
CaO	11.64	11.79	0.00	0.00	23.39	9.35	7.94
Na ₂ O	1.43	1.34	0.16	0.21	0.04	6.51	7.71
K ₂ O	0.82	0.89	9.48	9.27	0.00	0.06	0.02
Cr ₂ O ₃	0.10	0.04	0.04	0.05	0.08	0.00	0.02
Total	98.06	97.83	95.45	96.35	96.36	100.08	99.82

Structural Formula

NO.OX.	23.	23.	22.	22.	25.	32.	32.
Si	6.561	6.463	5.484	5.514	6.159	10.035	10.322
Al ^{iv}	1.439	1.537	2.516	2.486	0.000	5.988	5.645
Al ^{vi}	0.411	0.381	0.443	0.502	4.534	0.000	0.000
Ti	0.128	0.152	0.236	0.248	0.015	0.000	0.001
Fe	2.300	2.390	2.266	2.229	1.663	0.005	0.008
Mn	0.032	0.042	0.027	0.037	0.024	0.002	0.000
Hg	2.333	2.255	2.883	2.805	0.000	0.000	0.000
Ca	1.877	1.917	0.000	0.000	4.143	1.800	1.529
Na	0.417	0.394	0.047	0.061	0.013	2.268	2.687
K	0.157	0.172	1.831	1.767	0.000	0.014	0.005
Cr	0.012	0.005	0.005	0.006	0.010	0.000	0.003
Total	15.668	15.707	15.737	15.655	16.560	20.112	20.199
Hg/Hg+Fe	0.504	0.485	0.560	0.557	0.000	0.000	0.000
Ca Ca	0.288	0.292	0.000	0.000	0.000	0.441	0.362
Hg Na	0.358	0.344	0.000	0.000	0.000	0.556	0.637
Fe K	0.353	0.364	0.000	0.000	0.000	0.003	0.001

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 51706

Mineral	FELD	FELD	FELD
SiO2	57.62	55.71	58.04
TiO2	0.02	0.00	0.06
Al2O3	26.20	27.15	26.08
FeO	0.00	0.05	0.00
MnO	0.00	0.00	0.04
MgO	0.00	0.00	0.00
CaO	7.73	8.80	8.14
Na2O	7.94	6.96	6.98
K2O	0.01	0.01	0.05
Cr2O3	0.02	0.04	0.05
Total	99.54	98.72	99.44

Structural Formula

NO.OX.	32.	32.	32.
Si	10.381	10.146	10.440
Al iv	5.565	5.829	5.530
Al vi	0.000	0.000	0.000
Ti	0.003	0.000	0.008
Fe	0.000	0.008	0.000
Mn	0.000	0.000	0.006
Mg	0.000	0.000	0.000
Ca	1.492	1.717	1.569
Na	2.774	2.458	2.434
K	0.002	0.002	0.011
Cr	0.003	0.006	0.007
Total	20.220	20.166	20.006
Mg/Mg+Fe	0.000	0.000	0.000
Ca Ca	0.350	0.411	0.391
Mg Na	0.650	0.588	0.606
Fe K	0.001	0.001	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51913

Mineral	Bi	Bi	Bi	Bi	Bi	Epi	Epi
SiO2	36.94	37.18	37.31	37.34	37.48	38.23	38.13
TiO2	2.46	2.31	2.10	2.17	2.25	0.00	0.00
Al2O3	16.96	17.07	16.74	16.59	17.10	24.57	23.39
FeO	19.66	19.48	19.92	20.22	19.25	11.47	11.70
MnO	0.18	0.15	0.17	0.17	0.18	0.38	0.15
HgO	10.65	10.68	10.50	10.48	10.63	0.00	0.00
CaO	0.00	0.00	0.00	0.00	0.00	23.18	23.37
Na2O	0.10	0.18	0.11	0.14	0.10	0.00	0.00
K2O	9.22	9.20	9.41	9.76	8.99	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.07	0.00	0.00	0.00
Total	96.17	96.25	96.26	96.94	95.98	97.83	96.74

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	25.	25.
Si	5.566	5.587	5.624	5.611	5.628	6.180	6.248
Al iv	2.434	2.413	2.376	2.389	2.372	0.000	0.000
Al vi	0.578	0.611	0.599	0.550	0.655	4.682	4.518
Ti	0.279	0.261	0.238	0.245	0.254	0.000	0.000
Fe	2.477	2.448	2.511	2.541	2.417	1.551	1.603
Mn	0.023	0.019	0.022	0.022	0.023	0.052	0.021
Hg	2.391	2.392	2.359	2.347	2.379	0.000	0.000
Ca	0.000	0.000	0.000	0.000	0.000	4.015	4.103
Na	0.029	0.052	0.032	0.041	0.029	0.000	0.000
K	1.772	1.764	1.810	1.871	1.722	0.000	0.000
Cr	0.000	0.000	0.000	0.008	0.000	0.000	0.000
Total	15.550	15.548	15.571	15.626	15.480	16.479	16.493
Hg/Hg+Fe	0.491	0.494	0.484	0.480	0.496	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51913

Mineral	Epi	Epi	Epi	FELD	FELD	FELD	FELD
SiO2	37.98	38.73	38.40	58.66	60.78	60.17	60.62
TiO2	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	22.45	23.90	23.96	26.85	25.45	25.53	25.53
FeO	13.49	11.36	11.38	0.03	0.00	0.36	0.04
MnO	0.15	0.21	0.19	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	23.29	23.84	23.60	8.95	7.45	8.07	7.06
Na2O	0.00	0.00	0.00	6.68	7.67	7.43	7.87
K2O	0.00	0.00	0.00	0.12	0.09	0.08	0.06
Cr2O3	0.00	0.00	0.00	0.00	0.06	0.00	0.00
Total	97.45	98.04	97.53	101.29	101.50	101.64	101.18

Structural Formula

NO.OX.	25.	25.	25.	32.	32.	32.	32.
Si	6.240	6.249	6.228	10.373	10.680	10.597	10.679
Al iv	0.000	0.000	0.000	5.597	5.272	5.301	5.302
Al vi	4.348	4.546	4.581	0.000	0.000	0.000	0.000
Ti	0.011	0.000	0.000	0.000	0.000	0.000	0.000
Fe	1.854	1.533	1.544	0.004	0.000	0.000	0.000
Mn	0.021	0.029	0.026	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	4.100	4.121	4.101	1.696	1.403	1.523	1.333
Na	0.000	0.000	0.000	2.290	2.613	2.537	2.688
K	0.000	0.000	0.000	0.027	0.020	0.018	0.013
Cr	0.000	0.000	0.000	0.000	0.008	0.000	0.000
Total	16.574	16.478	16.481	19.987	19.996	20.030	20.021
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.423	0.348	0.373	0.330
Hg Na	0.000	0.000	0.000	0.571	0.647	0.622	0.666
Fe K	0.000	0.000	0.000	0.007	0.005	0.004	0.003

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51913

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.06	61.05	59.91	60.81	58.93	60.89	60.13
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.05	25.32	25.82	25.31	26.28	25.66	25.63
FeO	0.07	0.00	0.00	0.04	0.06	0.00	0.02
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.71	6.88	7.63	7.25	8.24	7.13	7.51
Na2O	7.25	7.81	7.37	7.66	6.88	7.73	7.71
K2O	0.06	0.10	0.06	0.05	0.05	0.11	0.09
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.20	101.16	100.79	101.12	100.44	101.52	101.09

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.585	10.741	10.601	10.713	10.481	10.685	10.620
Al _{iv}	5.412	5.252	5.386	5.257	5.511	5.308	5.337
Al _{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.010	0.000	0.000	0.006	0.009	0.000	0.003
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.456	1.297	1.447	1.369	1.570	1.341	1.421
Na	2.478	2.664	2.529	2.617	2.373	2.630	2.640
K	0.013	0.022	0.014	0.011	0.011	0.025	0.020
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.954	19.976	19.977	19.972	19.955	19.988	20.042
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.369	0.326	0.363	0.342	0.397	0.336	0.348
Hg Na	0.628	0.669	0.634	0.655	0.600	0.658	0.647
Fe K	0.003	0.006	0.003	0.003	0.003	0.006	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51913

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.47	58.55	60.32	61.03	60.17	60.98	59.84
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	25.90	26.71	26.22	25.46	25.80	25.16	25.51
FeO	0.01	0.00	0.00	0.04	0.00	0.05	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.47	8.50	7.99	6.88	7.58	7.22	7.41
Na2O	7.70	7.06	7.36	7.72	7.40	7.84	7.84
K2O	0.07	0.00	0.05	0.09	0.08	0.08	0.09
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.62	100.82	101.94	101.22	101.03	101.33	100.69

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.617	10.392	10.563	10.729	10.619	10.729	10.615
Al iv	5.361	5.589	5.413	5.277	5.368	5.219	5.335
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.001	0.000	0.000	0.006	0.000	0.007	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.405	1.617	1.499	1.296	1.433	1.361	1.408
Na	2.621	2.430	2.499	2.631	2.532	2.675	2.697
K	0.016	0.000	0.011	0.020	0.018	0.018	0.020
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	20.021	20.028	19.986	19.959	19.972	20.008	20.076
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.348	0.400	0.374	0.328	0.360	0.336	0.341
Mg Na	0.648	0.600	0.623	0.667	0.636	0.660	0.654
Fe K	0.004	0.000	0.003	0.005	0.005	0.004	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51913

Mineral	FELD	FELD	FELD	FELD
SiO2	59.49	60.57	60.83	60.34
TiO2	0.00	0.00	0.00	0.00
Al2O3	25.72	25.76	25.22	25.92
FeO	0.15	0.30	0.24	0.00
MnO	0.00	0.00	0.00	0.05
HgO	0.00	0.00	0.00	0.00
CaO	7.46	7.32	7.07	7.39
Na2O	7.65	7.57	7.77	7.59
K2O	0.08	0.08	0.17	0.07
Cr2O3	0.00	0.00	0.00	0.00
Total	100.55	101.60	101.30	101.36

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	10.573	10.639	10.714	10.616
Al iv	5.389	5.334	5.237	5.376
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.022	0.044	0.035	0.000
Mn	0.000	0.000	0.000	0.007
Hg	0.000	0.000	0.000	0.000
Ca	1.421	1.378	1.334	1.393
Na	2.636	2.578	2.654	2.589
K	0.018	0.018	0.038	0.016
Cr	0.000	0.000	0.000	0.000
Total	20.060	19.992	20.013	19.998

Hg/Mg+Fe 0.000 0.000 0.000 0.000

Ca Ca	0.349	0.347	0.331	0.348
Hg Na	0.647	0.649	0.659	0.648
Fe K	0.004	0.005	0.009	0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51918

Mineral	Bi	Bi	Bi	Bi	Bi	Bi	Bi
SiO2	36.25	35.30	35.81	36.83	36.53	36.16	35.44
TiO2	2.55	2.41	2.63	2.30	2.55	2.56	2.18
Al2O3	16.25	16.09	16.22	16.33	16.28	16.49	16.64
FeO	21.84	21.43	21.60	21.37	21.51	21.61	21.29
MnO	0.25	0.30	0.28	0.28	0.22	0.29	0.25
HgO	9.00	8.88	9.21	9.67	9.66	9.39	9.84
CaO	0.00	0.07	0.00	0.00	0.00	0.00	0.00
Na2O	0.12	0.14	0.14	0.08	0.12	0.07	0.08
K2O	9.56	9.29	9.52	9.69	9.67	9.72	9.91
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	95.82	93.91	95.41	96.55	96.54	96.29	95.63

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	22.	22.
Si	5.570	5.538	5.529	5.597	5.560	5.528	5.465
Al iv	2.430	2.462	2.471	2.403	2.440	2.472	2.535
Al vi	0.514	0.514	0.481	0.522	0.481	0.500	0.490
Ti	0.295	0.284	0.305	0.263	0.292	0.294	0.253
Fe	2.807	2.812	2.789	2.716	2.738	2.763	2.746
Mn	0.033	0.040	0.037	0.036	0.028	0.038	0.033
Hg	2.061	2.076	2.119	2.190	2.191	2.139	2.261
Ca	0.000	0.012	0.000	0.000	0.000	0.000	0.000
Na	0.036	0.043	0.042	0.024	0.035	0.021	0.024
K	1.874	1.859	1.875	1.879	1.878	1.896	1.950
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	15.618	15.640	15.648	15.629	15.644	15.650	15.756
Hg/Hg+Fe	0.423	0.425	0.432	0.446	0.445	0.436	0.452
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JENL 733)

Sample 51918

Mineral	Bi	FELD ²	FELD	FELD	FELD	FELD	FELD
SiO2	35.56	64.81	65.32	63.85	58.91	59.19	61.49
TiO2	2.51	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	16.51	18.98	19.16	18.52	25.51	25.84	25.62
FeO	21.49	0.02	0.00	0.04	0.00	0.06	0.03
MnO	0.31	0.00	0.00	0.00	0.00	0.06	0.00
MgO	9.70	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.10	0.00	7.14	7.44	7.07
Na2O	0.07	2.48	4.86	0.68	7.87	7.40	8.10
K2O	9.76	13.47	9.80	16.06	0.11	0.12	0.10
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.06	0.00
Total	95.91	99.76	99.24	99.15	99.54	100.17	102.41

Structural Formula

NO.OX.	22.	32.	32.	32.	32.	32.	32.
Si	5.468	11.906	11.904	11.921	10.574	10.554	10.705
Al iv	2.532	4.110	4.116	4.077	5.398	5.432	5.258
Al vi	0.461	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.290	0.000	0.000	0.000	0.000	0.000	0.000
Fe	2.764	0.003	0.000	0.006	0.000	0.009	0.004
Mn	0.040	0.000	0.000	0.000	0.000	0.009	0.000
Mg	2.223	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.020	0.000	1.373	1.421	1.319
Na	0.021	0.883	1.717	0.246	2.739	2.558	2.734
K	1.915	3.157	2.279	3.826	0.025	0.027	0.022
Cr	0.000	0.000	0.000	0.000	0.000	0.008	0.000
Total	15.713	20.059	20.036	20.076	20.109	20.019	20.044
Mg/Mg+Fe	0.446	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.005	0.000	0.332	0.355	0.324
Mg Na	0.000	0.219	0.428	0.060	0.662	0.638	0.671
Fe K	0.000	0.781	0.567	0.940	0.006	0.007	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51918

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	65.22	64.39	63.73	64.56	65.33	64.94	64.14
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	18.75	18.85	18.87	18.78	18.77	18.54	18.67
FeO	0.04	0.00	0.00	0.04	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	0.07	0.07	0.00	0.00
Na2O	0.59	0.59	0.63	0.89	0.83	0.56	0.60
K2O	16.33	16.34	15.93	15.69	15.53	16.00	15.98
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.07	0.00
Total	100.93	100.17	99.16	100.03	100.53	100.11	99.39

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	11.952	11.903	11.884	11.920	11.971	11.978	11.928
Al iv	4.051	4.108	4.148	4.088	4.055	4.031	4.093
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.006	0.000	0.000	0.006	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	0.014	0.014	0.000	0.000
Na	0.210	0.211	0.228	0.319	0.295	0.200	0.216
K	3.818	3.854	3.790	3.696	3.630	3.765	3.791
Cr	0.000	0.000	0.000	0.000	0.000	0.010	0.000
Total	20.036	20.076	20.050	20.043	19.965	19.984	20.029
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.003	0.003	0.000	0.000
Mg Na	0.052	0.052	0.057	0.079	0.075	0.051	0.054
Fe K	0.948	0.948	0.943	0.917	0.922	0.949	0.946

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51918

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.99	64.23	64.72	60.64	58.87	64.16	60.92
TiO2	0.00	0.00	0.05	0.00	0.00	0.00	0.00
Al2O3	26.06	18.69	18.63	25.98	25.67	18.67	25.72
FeO	0.06	0.01	0.04	0.06	0.01	0.06	0.02
MnO	0.00	0.00	0.00	0.00	0.00	0.08	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	7.35	0.00	0.06	7.60	7.16	0.00	7.05
Na2O	7.55	0.79	0.63	7.61	8.06	0.62	7.99
K2O	0.11	15.44	15.95	0.13	0.16	16.01	0.09
Cr2O3	0.00	0.07	0.00	0.00	0.00	0.00	0.00
Total	101.14	99.23	100.08	102.02	99.93	99.60	101.79

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.582	11.935	11.948	10.611	10.540	11.918	10.670
Al iv	5.423	4.094	4.055	5.359	5.418	4.089	5.311
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.007	0.000	0.000	0.000	0.000
Fe	0.009	0.002	0.006	0.009	0.001	0.009	0.003
Mn	0.000	0.000	0.000	0.000	0.000	0.013	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.389	0.000	0.012	1.425	1.374	0.000	1.323
Na	2.582	0.285	0.226	2.582	2.798	0.223	2.714
K	0.025	3.660	3.757	0.029	0.037	3.794	0.020
Cr	0.000	0.010	0.000	0.000	0.000	0.000	0.000
Total	20.010	19.985	20.009	20.015	20.168	20.046	20.041
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.348	0.000	0.003	0.353	0.326	0.000	0.326
Hg Na	0.646	0.072	0.056	0.640	0.665	0.056	0.669
Fe K	0.006	0.928	0.941	0.007	0.009	0.944	0.005

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51918

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.92	59.39	58.43	59.48	60.46	59.56	62.16
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	25.31	26.41	26.50	26.27	25.89	26.58	22.56
FeO	0.08	0.01	0.08	0.00	0.04	0.04	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	6.99	8.29	8.40	7.80	7.26	8.02	4.03
Na2O	7.56	7.26	7.27	7.58	7.88	7.26	5.23
K2O	0.20	0.07	0.16	0.12	0.13	0.07	6.47
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.06	101.43	100.84	101.25	101.66	101.53	100.45

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.734	10.473	10.391	10.504	10.616	10.482	11.192
Al iv	5.258	5.491	5.556	5.469	5.359	5.515	4.789
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.012	0.001	0.012	0.000	0.006	0.006	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.320	1.566	1.601	1.476	1.366	1.512	0.777
Na	2.583	2.483	2.507	2.596	2.683	2.477	1.826
K	0.045	0.016	0.036	0.027	0.029	0.016	1.486
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.951	20.030	20.103	20.072	20.060	20.008	20.070
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.334	0.385	0.386	0.360	0.335	0.378	0.190
Mg Na	0.654	0.611	0.605	0.633	0.658	0.619	0.446
Fe K	0.011	0.004	0.009	0.007	0.007	0.004	0.363

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 51918

Mineral	FELD	FELD	FELD	FELD	FELD
SiO2	64.92	65.53	64.97	59.35	60.49
TiO2	0.00	0.00	0.00	0.05	0.00
Al2O3	18.55	18.92	18.57	25.77	25.83
FeO	0.00	0.00	0.03	0.09	0.06
MnO	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	7.19	7.47
Na2O	0.80	0.81	0.57	7.80	7.75
K2O	15.78	16.03	16.32	0.11	0.10
Cr2O3	0.00	0.00	0.00	0.00	0.00
Total	100.05	101.29	100.46	100.36	101.70

Structural Formula

NO.OX.	32.	32.	32.	32.	32.
Si	11.975	11.947	11.965	10.565	10.619
Al iv	4.034	4.066	4.032	5.408	5.346
Al vi	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.007	0.000
Fe	0.000	0.000	0.005	0.013	0.009
Mn	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.009	0.000
Ca	0.000	0.000	0.000	1.379	1.405
Na	0.286	0.286	0.204	2.692	2.638
K	3.713	3.728	3.834	0.025	0.022
Cr	0.000	0.000	0.000	0.000	0.000
Total	20.008	20.028	20.039	20.082	20.039
Mg/Mg+Fe	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.335	0.346
Mg Na	0.072	0.071	0.050	0.658	0.649
Fe K	0.928	0.929	0.950	0.006	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 52006

Mineral	Amph	Amph	Bi	Bi
SiO2	43.74	43.26	36.72	36.67
TiO2	1.36	1.25	1.93	1.85
Al2O3	9.76	9.77	16.35	16.18
FeO	17.70	17.54	18.14	17.14
MnO	0.29	0.34	0.19	0.20
MgO	10.95	10.69	12.76	12.83
CaO	11.95	12.08	0.00	0.00
Na2O	1.23	1.22	0.13	0.20
K2O	0.99	1.10	9.59	9.53
Cr2O3	0.07	0.04	0.05	0.03
Total	98.04	97.29	95.86	94.63

Structural Formula

NO.OX.	23.	23.	22.	22.
Si	6.581	6.570	5.537	5.576
Al iv	1.419	1.430	2.463	2.424
Al vi	0.312	0.319	0.443	0.477
Ti	0.154	0.143	0.219	0.212
Fe	2.227	2.228	2.287	2.180
Mn	0.037	0.044	0.024	0.026
Mg	2.455	2.420	2.867	2.908
Ca	1.927	1.966	0.000	0.000
Na	0.359	0.359	0.038	0.059
K	0.190	0.213	1.845	1.849
Cr	0.008	0.005	0.006	0.004
Total	15.670	15.696	15.730	15.714
Mg/Mg+Fe	0.524	0.521	0.556	0.572
Ca Ca	0.291	0.297	0.000	0.000
Mg Na	0.372	0.366	0.000	0.000
Fe K	0.337	0.337	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52008

Mineral	Px	Px	Px	Px	Px	Px	Px
SiO2	50.18	50.18	49.98	51.89	51.85	51.80	51.87
TiO2	0.13	0.09	0.06	0.10	0.08	0.12	0.07
Al2O3	0.57	0.53	0.63	0.52	0.56	0.50	0.62
FeO	33.96	34.72	34.78	33.56	34.48	34.28	33.88
MnO	0.69	0.73	0.57	0.45	0.61	0.55	0.76
HgO	13.50	13.46	13.51	13.69	13.75	13.10	13.26
CaO	1.47	1.13	1.14	1.79	1.30	1.31	0.78
Na2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	100.50	100.84	100.67	102.00	102.63	101.66	101.24

Structural Formula

NO.OX.	δ.	δ.	δ.	δ.	δ.	δ.	δ.
Si	1.978	1.976	1.972	2.001	1.994	2.009	2.014
Al iv	0.022	0.024	0.028	0.000	0.006	0.000	0.000
Al vi	0.004	0.000	0.001	0.024	0.019	0.023	0.028
Ti	0.004	0.003	0.002	0.003	0.002	0.003	0.002
Fe	1.119	1.144	1.148	1.082	1.109	1.112	1.100
Mn	0.023	0.024	0.019	0.015	0.020	0.018	0.025
Hg	0.793	0.790	0.794	0.787	0.788	0.757	0.767
Ca	0.062	0.048	0.048	0.074	0.054	0.054	0.032
Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	4.005	4.009	4.012	3.985	3.991	3.976	3.970
Hg/Mg+Fe	0.415	0.409	0.409	0.421	0.415	0.405	0.411
Ca Ca	0.031	0.024	0.024	0.038	0.027	0.028	0.017
Hg Na	0.402	0.399	0.399	0.405	0.404	0.394	0.404
Fe K	0.567	0.577	0.577	0.557	0.569	0.578	0.579

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52008

Mineral	Px	Px	Amph	Amph	Amph	Amph	Bi
SiO2	52.07	51.79	41.56	42.71	42.93	43.54	35.45
TiO2	0.00	0.00	1.88	2.25	2.33	2.15	5.31
Al2O3	0.51	0.60	11.21	10.61	10.54	10.53	14.34
FeO	34.07	33.65	20.75	21.31	21.38	20.63	22.45
MnO	0.64	0.61	0.07	0.11	0.12	0.16	0.00
MgO	13.83	13.25	7.36	7.61	7.57	7.76	8.72
CaO	1.05	1.10	11.74	11.40	11.56	11.31	0.00
Na2O	0.00	0.00	1.24	1.35	1.31	1.25	0.00
K2O	0.00	0.00	1.60	1.74	1.66	1.55	9.05
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	102.17	101.00	97.41	99.09	99.40	98.88	95.32

Structural Formula

NO.OX.	6.	6.	23.	23.	23.	23.	22.
Si	2.005	2.015	6.417	6.486	6.497	6.579	5.500
Al iv	0.000	0.000	1.583	1.514	1.503	1.421	2.500
Al vi	0.023	0.028	0.458	0.385	0.377	0.455	0.123
Ti	0.000	0.000	0.218	0.257	0.265	0.244	0.620
Fe	1.097	1.095	2.680	2.706	2.706	2.607	2.913
Mn	0.021	0.020	0.009	0.014	0.015	0.020	0.000
Mg	0.794	0.768	1.694	1.722	1.707	1.748	2.016
Ca	0.043	0.046	1.942	1.855	1.874	1.831	0.000
Na	0.000	0.000	0.371	0.398	0.384	0.366	0.000
K	0.000	0.000	0.315	0.337	0.320	0.299	1.791
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	3.983	3.971	15.687	15.675	15.650	15.571	15.464
Hg/Hg+Fe	0.420	0.412	0.387	0.389	0.387	0.401	0.409
Ca Ca	0.022	0.024	0.308	0.295	0.298	0.296	0.000
Mg Na	0.410	0.402	0.268	0.274	0.272	0.283	0.000
Fe K	0.567	0.574	0.424	0.431	0.430	0.421	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52008

Mineral	Bi	Bi	Bi	FELD	FELD	FELD	FELD
SiO2	35.78	36.71	36.63	56.97	57.80	58.84	56.88
TiO2	5.58	5.35	5.27	0.00	0.00	0.00	0.00
Al2O3	14.37	13.69	14.01	27.09	26.70	26.83	27.42
FeO	22.76	21.65	22.83	0.16	0.08	0.18	0.09
MnO	0.00	0.08	0.00	0.05	0.09	0.00	0.00
MgO	8.61	8.79	8.86	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	9.06	8.32	8.47	9.27
Na2O	0.06	0.00	0.00	6.47	6.55	6.54	6.24
K2O	9.19	9.49	9.43	0.36	0.38	0.34	0.33
Cr2O3	0.00	0.07	0.00	0.09	0.00	0.00	0.00
Total	96.35	95.83	97.03	100.25	99.92	101.20	100.23

Structural Formula

NO.OX.	22.	22.	22.	32.	32.	32.	32.
Si	5.499	5.644	5.586	10.222	10.364	10.408	10.196
Al iv	2.501	2.356	2.414	5.731	5.644	5.595	5.795
Al vi	0.102	0.126	0.104	0.000	0.000	0.000	0.000
Ti	0.645	0.619	0.604	0.000	0.000	0.000	0.000
Fe	2.925	2.784	2.911	0.024	0.012	0.027	0.013
Mn	0.000	0.010	0.000	0.008	0.014	0.000	0.000
Mg	1.972	2.014	2.013	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	1.742	1.598	1.605	1.781
Na	0.018	0.000	0.000	2.251	2.277	2.243	2.169
K	1.802	1.862	1.835	0.082	0.087	0.077	0.075
Cr	0.000	0.009	0.000	0.013	0.000	0.000	0.000
Total	15.464	15.423	15.468	20.073	19.996	19.955	20.029
Mg/Mg+Fe	0.403	0.420	0.409	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.427	0.403	0.409	0.442
Mg Na	0.000	0.000	0.000	0.552	0.575	0.571	0.539
Fe K	0.000	0.000	0.000	0.020	0.022	0.020	0.019

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52008

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.52	63.77	56.85	58.71	59.75	59.78	60.65
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.46	18.49	27.27	26.33	26.43	26.27	26.40
FeO	0.15	0.00	0.13	0.21	0.09	0.16	0.19
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.15	0.00	9.17	8.23	8.48	8.47	8.40
Na2O	6.87	0.51	6.45	7.17	6.84	6.88	7.01
K2O	0.35	15.62	0.24	0.28	0.35	0.23	0.34
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.50	98.39	100.11	100.93	101.94	101.79	102.99

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.490	11.955	10.205	10.431	10.491	10.508	10.539
Al iv	5.498	4.086	5.771	5.515	5.471	5.444	5.408
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.022	0.000	0.020	0.031	0.013	0.024	0.028
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.539	0.000	1.764	1.567	1.595	1.595	1.564
Na	2.348	0.185	2.245	2.470	2.329	2.345	2.362
K	0.079	3.736	0.055	0.063	0.078	0.052	0.075
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.975	19.963	20.059	20.078	19.977	19.968	19.976
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.388	0.000	0.434	0.382	0.399	0.400	0.391
Hg Na	0.592	0.047	0.552	0.602	0.582	0.587	0.590
Fe K	0.020	0.953	0.014	0.015	0.020	0.013	0.019

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52008

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	60.06	61.06	59.44	65.26	60.60	60.26	60.39
TiO2	0.00	0.00	0.00	0.06	0.00	0.00	0.00
Al2O3	26.40	25.58	26.92	18.47	26.14	26.13	26.10
FeO	0.13	0.19	0.07	0.04	9.13	0.14	0.11
MnO	0.00	0.00	0.00	0.07	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.04	7.86	8.96	0.00	8.53	8.22	8.39
Na2O	6.94	7.09	6.51	0.28	6.61	6.91	6.88
K2O	0.39	0.39	0.26	15.76	0.35	0.39	0.30
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	101.96	102.17	102.16	99.94	102.36	102.05	102.17

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	10.531	10.674	10.415	12.023	10.579	10.560	10.567
Al ^{iv}	5.457	5.272	5.561	4.012	5.380	5.398	5.384
Al ^{vi}	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.008	0.000	0.000	0.000
Fe	0.019	0.028	0.010	0.006	0.019	0.021	0.016
Mn	0.000	0.000	0.000	0.011	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.511	1.472	1.682	0.000	1.596	1.544	1.573
Na	2.359	2.403	2.212	0.100	2.237	2.348	2.334
K	0.087	0.087	0.058	3.704	0.078	0.087	0.067
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.964	19.935	19.939	19.865	19.889	19.958	19.942
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca _{Ca}	0.382	0.372	0.426	0.000	0.408	0.388	0.396
Hg _{Na}	0.596	0.606	0.560	0.026	0.572	0.590	0.587
Fe _K	0.022	0.022	0.015	0.974	0.020	0.022	0.017

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52008

Mineral	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	59.73	61.04	60.09	60.20	60.99	59.81
TiO2	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	26.14	25.93	26.86	26.01	25.76	26.40
FeO	0.11	0.06	0.09	0.04	0.13	0.06
MnO	0.00	0.00	0.08	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00
CaO	8.86	8.02	8.76	8.35	7.86	8.75
Na2O	6.69	6.94	6.48	6.82	6.98	6.39
K2O	0.26	0.42	0.26	0.33	0.40	0.38
Cr2O3	0.06	0.00	0.00	0.00	0.00	0.00
Total	101.85	102.41	102.62	101.75	102.12	101.79

Structural Formula

NO.OX.	32.	32	32.	32.	32.	32.
Si	10.502	10.640	10.470	10.573	10.660	10.506
Al iv	5.419	5.329	5.517	5.386	5.308	5.467
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.016	0.009	0.013	0.006	0.019	0.009
Mn	0.000	0.000	0.012	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000
Ca	1.669	1.498	1.635	1.571	1.472	1.647
Na	2.281	2.346	2.189	2.323	2.366	2.176
K	0.058	0.093	0.058	0.074	0.089	0.085
Cr	0.008	0.000	0.000	0.000	0.000	0.000
Total	19.954	19.915	19.895	19.932	19.913	19.891
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.416	0.380	0.421	0.396	0.375	0.421
Mg Na	0.569	0.596	0.564	0.585	0.602	0.557
Fe K	0.015	0.024	0.015	0.019	0.023	0.022

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 52008

Mineral	Px	Px	Amph	Amph	Bi	Bi	FELD
SiO2	49.39	48.78	40.76	40.71	34.51	34.81	58.53
TiO2	0.05	0.13	2.03	2.01	5.82	5.44	0.10
Al2O3	0.61	0.65	10.67	10.39	13.46	13.63	25.57
FeO	35.26	33.98	21.83	21.26	22.90	22.92	0.05
MnO	0.61	0.58	0.22	0.15	0.02	0.13	0.04
HgO	13.27	13.43	7.29	7.62	8.56	8.55	0.00
CaO	0.92	1.14	10.78	11.23	0.00	0.00	7.76
Na2O	0.01	0.02	1.32	1.17	0.02	0.06	6.81
K2O	0.00	0.01	1.71	1.58	9.26	9.18	0.39
Cr2O3	0.00	0.06	0.08	0.04	0.02	0.04	0.00
Total	100.12	98.78	96.69	96.16	94.57	94.76	99.25

Structural Formula

NO.OX.	6.	23.	23.	22.	22.	32.
Si	1.962	6.388	6.400	5.444	5.475	10.542
Al iv	0.031	1.612	1.600	2.503	2.525	5.429
Al vi	0.000	0.359	0.326	0.000	0.002	0.000
Ti	0.001	0.004	0.239	0.238	0.691	0.643
Fe	1.174	2.861	2.795	3.021	3.015	0.008
Mn	0.021	0.029	0.020	0.003	0.017	0.006
Hg	0.787	1.703	1.785	2.013	2.004	0.000
Ca	0.039	1.810	1.892	0.000	0.000	1.498
Na	0.000	0.401	0.357	0.006	0.018	2.378
K	0.000	0.342	0.317	1.864	1.842	0.090
Cr	0.000	0.010	0.005	0.002	0.005	0.000
Total	4.018	15.754	15.734	15.547	15.546	19.964
Hg/Hg+Fe	0.401	0.373	0.390	0.400	0.399	0.000
Ca Ca	0.020	0.284	0.292	0.000	0.000	0.378
Hg Na	0.394	0.267	0.276	0.000	0.000	0.600
Fe K	0.587	0.449	0.432	0.000	0.000	0.023

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 52008

Mineral	FELD	FELD	FELD
SiO2	57.38	57.86	57.52
TiO2	0.08	0.00	0.06
Al2O3	25.93	26.39	25.96
FeO	0.20	0.12	0.30
MnO	0.03	0.00	0.00
HgO	0.00	0.01	0.00
CaO	8.40	8.29	8.47
Na2O	6.59	6.20	6.16
K2O	0.31	0.39	0.38
Cr2O3	0.08	0.00	0.01
Total	99.00	99.26	98.86

Structural Formula

NO.OX.	32.	32.	32.
Si	10.397	10.423	10.423
Al iv	5.539	5.604	5.546
Al vi	0.000	0.000	0.000
Ti	0.011	0.000	0.008
Fe	0.030	0.018	0.045
Mn	0.005	0.000	0.000
Hg	0.000	0.003	0.000
Ca	1.631	1.600	1.645
Na	2.315	2.166	2.164
K	0.072	0.090	0.088
Cr	0.011	0.000	0.001
Total	20.011	19.903	19.921
Hg/Mg+Fe	0.000	0.129	0.000
Ca Ca	0.406	0.415	0.422
Hg Na	0.576	0.562	0.555
Fe K	0.018	0.023	0.023

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52009

Mineral	Epi	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	41.53	67.70	66.64	66.66	66.42	67.24	66.37
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	31.37	20.85	21.96	21.31	21.52	19.04	18.70
FeO	2.17	0.04	0.12	0.06	0.07	0.00	0.00
MnO	0.16	0.00	0.00	0.00	0.00	0.00	0.06
HgO	0.00	0.00	0.07	0.00	0.00	0.00	0.00
CaO	22.99	1.09	1.85	2.02	3.61	0.19	0.00
Na2O	0.52	10.82	9.88	10.42	9.86	3.80	2.17
K2O	0.08	0.41	0.90	0.06	0.50	11.73	13.99
Cr2O3	0.00	0.60	0.00	0.31	0.06	0.00	0.00
Total	98.82	101.51	101.42	100.84	102.04	102.00	101.29

Structural Formula

NO.OX.	25.	32.	32.	32.	32.	32.	32.
Si	6.267	11.714	11.561	11.610	11.503	11.986	12.007
Al iv	0.000	4.253	4.491	4.376	4.394	4.001	3.988
Al vi	5.581	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.274	0.006	0.017	0.009	0.010	0.000	0.000
Mn	0.020	0.000	0.000	0.000	0.000	0.000	0.009
Hg	0.000	0.000	0.018	0.000	0.000	0.000	0.000
Ca	3.717	0.202	0.344	0.377	0.670	0.036	0.000
Na	0.152	3.630	3.324	3.519	3.311	1.313	0.761
K	0.015	0.091	0.199	0.013	0.110	2.668	3.229
Cr	0.000	0.082	0.000	0.043	0.008	0.000	0.000
Total	16.027	19.978	19.955	19.947	20.007	20.004	19.994
Hg/Hg+Fe	0.000	0.000	0.510	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.052	0.089	0.096	0.164	0.009	0.000
Hg Na	0.000	0.925	0.860	0.900	0.809	0.327	0.191
Fe K	0.000	0.023	0.052	0.003	0.027	0.664	0.809

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52009

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	67.88	67.16	66.77	67.06	65.99	65.39	65.87
TiO2	0.00	0.00	0.00	0.00	0.06	0.00	0.00
Al2O3	19.30	19.05	18.94	18.64	18.55	18.82	18.48
FeO	0.03	0.13	0.00	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.29	0.17	0.00	0.14	0.09	0.00	0.10
Na2O	6.66	2.81	1.79	2.40	1.19	0.82	1.91
K2O	7.20	12.91	14.65	13.39	14.95	15.41	13.67
Cr2O3	0.00	0.09	0.00	0.00	0.00	0.10	0.00
Total	101.36	102.32	102.15	101.63	100.83	100.54	100.03

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	11.983	11.982	11.996	12.049	12.021	11.970	12.038
Al iv	4.017	4.007	4.012	3.948	3.984	4.062	3.982
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.008	0.000	0.000
Fe	0.004	0.019	0.000	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.055	0.032	0.000	0.027	0.018	0.000	0.020
Na	2.280	0.972	0.624	0.836	0.420	0.291	0.677
K	1.627	2.938	3.358	3.069	3.475	3.599	3.187
Cr	0.000	0.013	0.000	0.000	0.000	0.014	0.000
Total	19.960	19.964	19.989	19.930	19.926	19.937	19.903
Hg/Mg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.014	0.008	0.000	0.007	0.004	0.000	0.005
Hg Na	0.576	0.247	0.157	0.213	0.107	0.075	0.174
Fe K	0.410	0.745	0.843	0.781	0.888	0.925	0.821

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52009

Mineral	FELD	FELD	FELD	FELD	FELD
SiO2	66.65	66.62	65.81	66.67	68.38
TiO2	0.00	0.00	0.00	0.00	0.00
Al2O3	18.83	18.39	22.65	22.19	20.41
FeO	0.03	0.00	0.12	0.13	0.05
MnO	0.00	0.05	0.00	0.06	0.00
HgO	0.00	0.00	0.00	0.00	0.05
CaO	0.10	0.10	2.77	2.52	0.94
Na2O	1.49	2.07	8.48	9.87	10.96
K2O	14.64	13.93	2.24	0.49	0.36
Cr2O3	0.06	0.00	0.00	0.00	0.39
Total	101.80	101.16	102.07	101.93	101.54

Structural Formula

NO.OX.	32.	32.	32.	32.	32.
Si	12.010	12.058	11.421	11.512	11.809
Al iv	4.000	3.924	4.634	4.517	4.155
Al vi	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000
Fe	0.005	0.000	0.017	0.019	0.007
Mn	0.000	0.008	0.000	0.009	0.000
Hg	0.000	0.000	0.000	0.000	0.013
Ca	0.019	0.019	0.515	0.466	0.174
Na	0.521	0.726	2.854	3.305	3.670
K	3.366	3.217	0.496	0.108	0.079
Cr	0.009	0.000	0.000	0.000	0.053
Total	19.929	19.952	19.937	19.936	19.961
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.641
Ca Ca	0.005	0.005	0.133	0.120	0.044
Hg Na	0.133	0.183	0.738	0.852	0.935
Fe K	0.862	0.812	0.125	0.028	0.020

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52101A

Mineral	Bi	Bi	Bi	Bi	Bi	Bi	FELD
SiO2	36.44	36.50	35.14	36.26	35.12	34.45	64.76
TiO2	3.11	3.08	2.93	3.18	3.09	3.03	0.00
Al2O3	17.32	17.18	16.52	16.87	16.85	16.39	18.48
FeO	19.78	19.90	19.98	20.45	19.74	20.36	0.01
MnO	0.35	0.38	0.31	0.36	0.31	0.32	0.00
HgO	9.07	9.42	9.19	9.58	9.55	9.36	0.00
CaO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Na2O	0.09	0.07	0.05	0.08	0.07	0.06	0.71
K2O	9.69	9.82	9.98	10.36	10.12	9.55	16.59
Cr2O3	0.00	0.00	0.06	0.00	0.00	0.00	0.00
Total	95.85	96.35	94.16	97.14	94.85	93.52	100.55

Structural Formula

NO.OX.	22.	22.	22.	22.	22.	22.	32.
Si	5.536	5.525	5.481	5.482	5.433	5.420	11.946
Al iv	2.464	2.475	2.519	2.518	2.567	2.580	4.019
Al vi	0.638	0.590	0.518	0.489	0.506	0.460	0.000
Ti	0.355	0.351	0.344	0.362	0.359	0.359	0.000
Fe	2.513	2.519	2.606	2.586	2.554	2.679	0.002
Mn	0.045	0.049	0.041	0.046	0.041	0.043	0.000
Hg	2.054	2.125	2.136	2.159	2.202	2.195	0.000
Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Na	0.027	0.021	0.015	0.023	0.021	0.018	0.254
K	1.878	1.896	1.986	1.998	1.997	1.917	3.904
Cr	0.000	0.000	0.007	0.000	0.000	0.000	0.000
Total	15.510	15.550	15.654	15.663	15.680	15.669	20.124
Hg/Hg+Fe	0.450	0.458	0.450	0.455	0.463	0.450	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg Na	0.000	0.000	0.000	0.000	0.000	0.000	0.061
Fe K	0.000	0.000	0.000	0.000	0.000	0.000	0.939

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52101A

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	66.04	63.58	64.26	65.37	63.31	64.25	65.09
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	18.27	24.44	18.56	18.40	24.04	18.19	18.38
FeO	0.00	0.00	0.03	0.00	0.05	0.07	0.10
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	5.45	0.00	0.00	5.37	0.00	0.00
Na2O	0.79	8.47	0.72	1.10	8.66	0.68	0.60
K2O	15.82	0.18	15.68	15.53	0.15	15.94	15.89
Cr2O3	0.00	0.00	0.00	0.05	0.00	0.00	0.00
Total	100.92	102.12	99.25	100.45	101.58	99.13	100.06

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	12.059	11.025	11.951	12.001	11.045	11.985	12.006
Al iv	3.933	4.996	4.069	3.982	4.944	4.000	3.997
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.005	0.000	0.007	0.011	0.015
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	1.013	0.000	0.000	1.004	0.000	0.000
Na	0.280	2.848	0.260	0.392	2.930	0.246	0.215
K	3.685	0.040	3.720	3.637	0.033	3.793	3.739
Cr	0.000	0.000	0.000	0.007	0.000	0.000	0.000
Total	19.957	19.921	20.005	20.019	19.964	20.035	19.972
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.260	0.000	0.000	0.253	0.000	0.000
Mg Na	0.071	0.730	0.065	0.097	0.739	0.061	0.054
Fe K	0.929	0.010	0.935	0.903	0.008	0.939	0.946

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52101A

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	64.19	64.89	64.02	62.97	64.16	61.20	62.42
TiO2	0.00	0.00	0.00	0.05	0.00	0.00	0.00
Al2O3	18.53	18.27	18.44	17.93	17.76	23.53	23.90
FeO	0.00	0.00	0.00	0.00	0.00	0.01	0.11
MnO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	0.00	0.00	5.21	5.43
Na2O	0.75	0.71	0.87	0.92	0.71	8.37	8.54
K2O	16.34	16.30	15.79	15.45	15.80	0.12	0.15
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.81	100.17	99.12	97.32	98.43	98.44	100.55

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	11.922	11.991	11.941	11.961	12.042	11.015	11.012
Al iv	4.057	3.980	4.055	4.015	3.930	4.993	4.971
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.007	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000	0.000	0.002	0.016
Mn	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	0.000	0.000	1.005	1.026
Na	0.270	0.254	0.315	0.339	0.258	2.921	2.921
K	3.872	3.843	3.757	3.744	3.783	0.028	0.034
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	20.121	20.068	20.068	20.066	20.014	19.963	19.980
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.000	0.000	0.254	0.258
Hg Na	0.065	0.062	0.077	0.083	0.064	0.739	0.734
Fe K	0.935	0.938	0.923	0.917	0.936	0.007	0.008

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52101A

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	62.85	64.14	61.46	64.26	61.85	63.01	61.38
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	22.74	17.91	23.08	18.42	23.02	23.16	23.36
FeO	0.24	0.00	0.03	0.00	0.00	0.00	0.01
MnO	0.06	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	5.06	0.00	5.16	0.00	5.00	5.02	5.11
Na2O	8.53	1.06	8.62	0.66	8.76	8.73	8.83
K2O	0.16	15.71	0.14	15.87	0.15	0.07	0.17
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	99.64	98.82	98.49	99.21	98.78	99.99	98.86

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	11.176	12.003	11.065	11.965	11.097	11.148	11.021
Al iv	4.767	3.951	4.899	4.043	4.869	4.831	4.945
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.036	0.000	0.005	0.000	0.000	0.000	0.002
Mn	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.964	0.000	0.995	0.000	0.961	0.952	0.983
Na	2.941	0.385	3.009	0.238	3.048	2.995	3.074
K	0.036	3.751	0.032	3.770	0.034	0.016	0.039
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	19.929	20.089	20.006	20.017	20.009	19.942	20.063
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.245	0.000	0.247	0.000	0.238	0.240	0.240
Hg Na	0.746	0.093	0.745	0.059	0.754	0.756	0.750
Fe K	0.009	0.907	0.008	0.941	0.008	0.004	0.010

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 52101A

Mineral	FELD	FELD
SiO2	61.82	61.24
TiO2	0.00	0.00
Al2O3	23.87	23.70
FeO	0.00	0.01
MnO	0.00	0.00
HgO	0.00	0.00
CaO	5.53	5.50
Na2O	8.97	8.53
K2O	0.11	0.11
Cr2O3	0.00	0.00
Total	100.30	99.09

Structural Formula

NO.OX.	32.	32.
Si	10.957	10.970
Al iv	4.988	5.005
Al vi	0.000	0.000
Ti	0.000	0.000
Fe	0.000	0.001
Mn	0.000	0.000
Hg	0.000	0.000
Ca	1.050	1.056
Na	3.083	2.963
K	0.025	0.025
Cr	0.000	0.000
Total	20.103	20.021
Hg/Hg+Fe	0.000	0.000
Ca Ca	0.253	0.261
Hg Na	0.741	0.733
Fe K	0.006	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 52103

Mineral	Bi	Bi	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	34.86	35.59	60.89	59.16	63.22	60.28	66.03
TiO2	2.36	2.36	0.00	0.00	0.00	0.00	0.00
Al2O3	16.12	16.18	25.11	25.05	18.04	24.85	18.67
FeO	24.61	23.53	0.00	0.00	0.00	0.00	0.00
MnO	0.34	0.34	0.00	0.00	0.00	0.00	0.00
HgO	7.87	7.70	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	6.51	6.86	0.13	6.44	0.00
Na2O	0.00	0.06	7.98	7.56	1.64	7.91	0.58
K2O	9.76	9.74	0.14	0.13	13.99	0.13	16.42
Cr2O3	0.12	0.07	0.00	0.00	0.00	0.00	0.00
Total	96.04	95.57	100.63	98.76	97.02	99.61	101.70

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	5.449	5.548	10.766	10.673	11.971	10.767	11.998
Al iv	2.551	2.452	5.234	5.328	4.027	5.233	3.999
Al vi	0.420	0.521	0.000	0.000	0.000	0.000	0.000
Ti	0.277	0.277	0.000	0.000	0.000	0.000	0.000
Fe	3.217	3.067	0.000	0.000	0.000	0.000	0.000
Mn	0.045	0.045	0.000	0.000	0.000	0.000	0.000
Hg	1.833	1.789	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	1.233	1.326	0.026	1.233	0.000
Na	0.000	0.018	2.736	2.645	0.602	2.740	0.204
K	1.946	1.937	0.032	0.030	3.380	0.030	3.806
Cr	0.015	0.009	0.000	0.000	0.000	0.000	0.000
Total	15.754	15.662	20.001	20.001	20.006	20.001	20.008
Hg/Hg+Fe	0.363	0.368	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.308	0.331	0.007	0.308	0.000
Hg Na	0.000	0.000	0.684	0.661	0.150	0.685	0.051
Fe K	0.000	0.000	0.008	0.007	0.843	0.007	0.949

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 73103

Mineral	Px	Px	Px	Px	Px	Px	Px
SiO2	53.92	54.36	53.88	54.14	54.31	54.08	54.26
TiO2	0.00	0.00	0.14	0.00	0.00	0.00	0.08
Al2O3	0.83	0.83	1.40	0.83	0.83	0.95	0.80
FeO	23.87	23.31	8.33	24.17	24.38	23.73	23.93
MnO	0.52	0.39	0.14	0.47	0.52	0.42	0.44
HgO	21.84	21.96	14.37	21.95	21.76	21.50	22.03
CaO	0.50	1.12	22.59	0.57	0.52	0.63	0.51
Na2O	0.00	0.00	0.30	0.00	0.00	0.00	0.00
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cr2O3	0.00	0.05	0.10	0.00	0.00	0.00	0.06
Total	101.48	102.02	101.25	102.13	102.32	101.31	102.11

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	6.
Si	1.987	1.989	1.976	1.985	1.988	1.994	1.986
Al iv	0.013	0.011	0.024	0.015	0.012	0.006	0.014
Al vi	0.023	0.025	0.037	0.020	0.024	0.035	0.021
Ti	0.000	0.000	0.004	0.000	0.000	0.000	0.002
Fe	0.736	0.713	0.256	0.741	0.746	0.732	0.733
Mn	0.016	0.012	0.004	0.015	0.016	0.013	0.014
Hg	1.200	1.197	0.786	1.199	1.187	1.181	1.202
Ca	0.020	0.044	0.888	0.022	0.020	0.025	0.020
Na	0.000	0.000	0.021	0.000	0.000	0.000	0.000
K	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cr	0.000	0.001	0.003	0.000	0.000	0.000	0.002
Total	3.995	3.993	3.999	3.998	3.994	3.986	3.993
Hg/Hg+Fe	0.620	0.627	0.755	0.618	0.614	0.618	0.621
Ca Ca	0.010	0.022	0.460	0.011	0.010	0.013	0.010
Hg Na	0.614	0.613	0.407	0.611	0.608	0.610	0.615
Fe K	-0.376	0.365	0.132	0.378	0.382	0.378	0.375

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 73103

Mineral	Px	Px	Px	Px	Px	Px	Anph
SiO2	54.27	53.64	53.21	53.66	54.15	53.26	48.75
TiO2	0.00	0.18	0.23	0.00	0.00	0.23	1.23
Al2O3	0.88	1.46	1.68	0.95	0.84	1.70	8.67
FeO	24.75	8.83	8.45	24.38	24.40	8.91	12.05
MnO	0.32	0.15	0.21	0.42	0.43	0.21	0.09
HgO	22.00	14.71	14.10	21.58	21.96	14.31	14.37
CaO	0.54	22.68	22.46	0.60	0.47	22.60	11.63
Na2O	0.00	0.31	0.30	0.00	0.00	0.30	0.94
K2O	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Cr2O3	0.00	0.09	0.09	0.00	0.13	0.00	0.28
Total	102.76	102.05	100.73	101.59	102.38	101.52	98.50

Structural Formula

NO.OX.	6.	6.	6.	6.	6.	6.	23.
Si	1.980	1.959	1.965	1.981	1.982	1.956	6.996
Al iv	0.020	0.041	0.035	0.019	0.018	0.044	1.004
Al vi	0.018	0.022	0.038	0.022	0.018	0.030	0.463
Ti	0.000	0.005	0.006	0.000	0.000	0.006	0.133
Fe	0.755	0.270	0.261	0.753	0.747	0.274	1.446
Mn	0.010	0.005	0.007	0.013	0.013	0.007	0.011
Hg	1.196	0.801	0.776	1.187	1.198	0.783	3.073
Ca	0.021	0.888	0.889	0.024	0.018	0.890	1.788
Na	0.000	0.022	0.021	0.000	0.000	0.021	0.262
K	0.000	0.000	0.000	0.000	0.000	0.000	0.090
Cr	0.000	0.003	0.003	0.000	0.004	0.000	0.032
Total	4.001	4.014	4.001	3.999	3.998	4.011	15.298
Hg/Hg+Fe	0.613	0.748	0.748	0.612	0.616	0.741	0.680
Ca Ca	0.011	0.453	0.462	0.012	0.009	0.457	0.284
Hg Na	0.606	0.409	0.403	0.605	0.610	0.402	0.487
Fe K	0.383	0.138	0.136	0.383	0.380	0.141	0.229

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 73103

Mineral	Anph	Anph	Anph	Anph	FELD	FELD	FELD
SiO2	47.33	47.18	48.49	47.61	51.58	50.48	52.94
TiO2	1.74	1.95	1.79	1.62	0.00	0.00	0.00
Al2O3	10.05	9.56	8.91	9.01	31.85	32.17	31.20
FeO	12.54	12.81	12.26	12.39	0.13	0.14	0.08
MnO	0.00	0.00	0.11	0.12	0.00	0.00	0.00
MgO	13.80	13.97	14.35	14.35	0.00	0.00	0.00
CaO	11.46	11.55	11.62	11.50	14.79	15.37	13.80
Na2O	1.36	1.46	1.07	1.07	3.38	2.90	3.71
K2O	0.62	0.58	0.56	0.53	0.00	0.00	0.00
Cr2O3	0.17	0.20	0.08	0.00	0.00	0.00	0.00
Total	99.07	99.26	99.24	98.20	101.73	101.06	101.73

Structural Formula

NO.OX.	23.	23.	23.	23.	32.	32.	32.
Si	6.791	6.777	6.923	6.881	9.236	9.114	9.438
Al iv	1.209	1.223	1.072	1.119	6.723	6.847	6.557
Al vi	0.491	0.395	0.422	0.416	0.000	0.000	0.000
Ti	0.188	0.211	0.192	0.176	0.000	0.000	0.000
Fe	1.505	1.539	1.464	1.498	0.019	0.021	0.012
Mn	0.000	0.000	0.013	0.015	0.000	0.000	0.000
Hg	2.951	2.990	3.053	3.091	0.000	0.000	0.000
Ca	1.762	1.778	1.778	1.781	2.838	2.973	2.636
Na	0.378	0.407	0.296	0.300	1.173	1.015	1.282
K	0.113	0.106	0.102	0.098	0.000	0.000	0.000
Cr	0.019	0.023	0.009	0.000	0.000	0.000	0.000
Total	15.408	15.448	15.330	15.374	19.989	19.970	19.925
Hg/Hg+Fe	0.662	0.660	0.676	0.674	0.000	0.000	0.000
Ca Ca	0.283	0.282	0.282	0.280	0.707	0.745	0.673
Hg Na	0.475	0.474	0.485	0.485	0.293	0.255	0.327
Fe K	0.242	0.244	0.233	0.235	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 73103

Mineral	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	50.54	51.09	52.01	52.15	51.53	54.14
TiO2	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	32.38	31.85	31.47	31.88	31.83	30.30
FeO	0.27	0.10	0.16	0.23	0.10	0.21
MnO	0.00	0.00	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00
CaO	15.46	14.97	14.30	14.91	14.88	13.06
Na2O	2.90	3.29	3.55	3.32	3.30	4.27
K2O	0.00	0.00	0.07	0.00	0.08	0.00
Cr2O3	0.07	0.00	0.00	0.00	0.00	0.00
Total	101.62	101.30	101.56	102.49	101.72	101.98

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.
Si	9.084	9.194	9.318	9.268	9.231	9.616
Al iv	6.862	6.757	6.647	6.679	6.722	6.344
Al vi	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.041	0.015	0.024	0.034	0.015	0.031
Mn	0.000	0.000	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000
Ca	2.978	2.887	2.745	2.839	2.856	2.485
Na	1.011	1.148	1.233	1.144	1.146	1.471
K	0.000	0.000	0.016	0.000	0.018	0.000
Cr	0.010	0.000	0.000	0.000	0.000	0.000
Total	19.985	20.001	19.983	19.964	19.990	19.947
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.747	0.715	0.687	0.713	0.710	0.628
Hg Na	0.253	0.285	0.309	0.287	0.285	0.372
Fe K	0.000	0.000	0.004	0.000	0.005	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 9060

Mineral	-Bi	Bi	Epi	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	35.43	35.01	37.23	62.78	59.84	65.99	65.56
TiO2	1.90	2.53	0.12	0.00	0.00	0.00	0.00
Al2O3	16.82	16.42	23.29	24.41	23.91	18.66	18.54
FeO	21.84	23.34	12.01	0.00	0.00	0.00	0.00
MnO	0.27	0.26	0.23	0.00	0.00	0.00	0.00
HgO	9.62	8.00	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	23.20	5.49	5.77	0.00	0.00
Na2O	0.12	0.07	0.00	8.69	8.10	0.49	0.49
K2O	9.95	9.67	0.01	0.12	0.09	16.54	16.43
Cr2O3	0.04	0.04	0.06	0.00	0.00	0.00	0.00
Total	95.99	95.34	96.15	101.49	97.71	101.68	101.02

Structural Formula

NO.OX.	22.	22.	25.	32.	32.	32.	32.
Si	5.458	5.470	6.164	10.971	10.877	11.998	11.998
Al iv	2.542	2.530	0.000	5.029	5.123	4.000	4.000
Al vi	0.513	0.494	4.546	0.000	0.000	0.000	0.000
Ti	0.220	0.297	0.015	0.000	0.000	0.000	0.000
Fe	2.814	3.050	1.663	0.000	0.000	0.000	0.000
Mn	0.035	0.034	0.032	0.000	0.000	0.000	0.000
Hg	2.209	1.863	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	4.116	1.028	1.124	0.000	0.000
Na	0.036	0.021	0.000	2.945	2.855	0.173	0.174
K	1.956	1.928	0.002	0.027	0.021	3.837	3.836
Cr	0.005	0.005	0.008	0.000	0.000	0.000	0.000
Total	15.787	15.692	16.545	20.000	19.999	20.007	20.007
Hg/Hg+Fe	0.440	0.379	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.257	0.281	0.000	0.000
Hg Na	0.000	0.000	0.000	0.736	0.714	0.043	0.043
Fe K	0.000	0.000	0.000	0.007	0.005	0.957	0.957

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 90601

Mineral	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	58.48	59.49	66.68	67.10
TiO2	0.00	0.00	0.00	0.00
Al2O3	24.52	24.61	18.86	18.97
FeO	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00
CaO	6.58	6.42	0.00	0.00
Na2O	7.54	7.79	0.62	0.64
K2O	0.14	0.11	16.53	16.60
Cr2O3	0.00	0.00	0.00	0.00
Total	97.26	98.42	102.69	103.31

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	10.708	10.755	11.997	11.998
Al iv	5.293	5.245	4.000	3.999
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000
Ca	1.291	1.244	0.000	0.000
Na	2.677	2.731	0.216	0.222
K	0.033	0.025	3.794	3.787
Cr	0.000	0.000	0.000	0.000
Total	20.001	20.000	20.008	20.006
Hg/Hg+Fe	0.000	0.000	0.000	0.000
Ca Ca	0.323	0.311	0.000	0.000
Hg Na	0.669	0.683	0.054	0.055
Fe K	0.008	0.006	0.946	0.945

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 90807

Mineral	Bi	Bi	Epi	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	34.64	34.58	36.76	60.05	59.43	60.42	55.57
TiO2	2.52	2.89	0.12	0.00	0.00	0.00	0.00
Al2O3	16.73	16.64	22.87	25.18	25.11	25.17	27.91
FeO	22.04	21.99	12.10	0.00	0.00	0.00	0.00
MnO	0.26	0.23	0.22	0.00	0.00	0.00	0.00
HgO	9.11	9.15	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	23.22	6.77	6.85	6.67	10.06
Na2O	0.03	0.06	0.04	7.73	7.60	7.72	5.78
K2O	9.66	9.61	0.00	0.16	0.15	0.32	0.10
Cr2O3	0.02	0.03	0.00	0.00	0.00	0.00	0.00
Total	95.01	95.18	95.33	99.89	99.14	100.30	99.42

Structural Formula

NO.OX.	22.	22.	25.	32.	32.	32.	32.
Si	5.401	5.381	6.153	10.707	10.680	10.730	10.050
Al iv	2.599	2.619	0.000	5.293	5.320	5.270	5.951
Al vi	0.476	0.434	4.513	0.000	0.000	0.000	0.000
Ti	0.295	0.338	0.015	0.000	0.000	0.000	0.000
Fe	2.874	2.862	1.694	0.000	0.000	0.000	0.000
Mn	0.034	0.030	0.031	0.000	0.000	0.000	0.000
Hg	2.117	2.122	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	4.164	1.293	1.319	1.269	1.949
Na	0.009	0.018	0.013	2.672	2.648	2.658	2.027
K	1.922	1.908	0.000	0.036	0.034	0.073	0.023
Cr	0.002	0.004	0.000	0.000	0.000	0.000	0.000
Total	15.730	15.716	16.582	20.001	20.001	20.000	20.000
Hg/Hg+Fe	0.424	0.426	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.323	0.330	0.317	0.487
Hg Na	0.000	0.000	0.000	0.668	0.662	0.665	0.507
Fe K	0.000	0.000	0.000	0.009	0.009	0.018	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 90807

Mineral	Feld(3)	Feld(3)
SiO2	59.50	60.43
TiO2	0.00	0.00
Al2O3	24.60	24.60
FeO	0.00	0.00
MnO	0.00	0.00
HgO	0.00	0.00
CaO	6.41	6.20
Na2O	7.78	8.02
K2O	0.14	0.14
Cr2O3	0.00	0.00
Total	98.43	99.39

Structural Formula

NO.OX.	32.	32.
Si	10.757	10.811
Al iv	5.243	5.188
Al vi	0.000	0.000
Ti	0.000	0.000
Fe	0.000	0.000
Mn	0.000	0.000
Hg	0.000	0.000
Ca	1.242	1.188
Na	2.727	2.782
K	0.032	0.032
Cr	0.000	0.000
Total	20.001	20.002
Hg/Hg+Fe	0.000	0.000
Ca Ca	0.310	0.297
Hg Na	0.682	0.695
Fe K	0.008	0.008

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 91502

Mineral	Px	Px	Px	Px	Bi	Bi	Feld(3)
SiO2	49.68	49.91	49.91	49.58	35.51	35.12	54.97
TiO2	0.05	0.00	0.08	0.03	3.66	3.46	0.00
Al2O3	1.69	1.61	1.36	1.25	15.59	15.76	28.18
FeO	32.54	31.47	32.09	32.35	19.05	19.40	0.00
MnO	0.80	0.78	0.84	0.74	0.07	0.09	0.00
HgO	16.56	15.86	16.42	16.08	11.65	11.41	0.00
CaO	0.22	0.22	0.20	0.23	0.00	0.00	10.43
Na2O	0.01	0.02	0.00	0.08	0.02	0.00	5.54
K2O	0.03	0.00	0.01	0.03	9.47	9.49	0.11
Cr2O3	0.05	0.00	0.02	0.02	0.18	0.10	0.00
Total	101.63	99.87	100.93	100.39	95.20	94.83	99.23

Structural Formula

NO.OX.	6.	6.	6.	6.	22.	22.	32.
Si	1.919	1.950	1.937	1.939	5.436	5.411	9.972
Al iv	0.077	0.050	0.062	0.058	2.564	2.589	6.027
Al vi	0.000	0.025	0.000	0.000	0.249	0.274	0.000
Ti	0.001	0.000	0.002	0.000	0.421	0.401	0.000
Fe	1.051	1.029	1.041	1.058	2.439	2.500	0.000
Mn	0.026	0.026	0.028	0.025	0.009	0.012	0.000
Hg	0.953	0.924	0.950	0.937	2.658	2.620	0.000
Ca	0.009	0.009	0.008	0.010	0.000	0.000	2.027
Na	0.000	0.002	0.000	0.006	0.006	0.000	1.949
K	0.001	0.000	0.000	0.001	1.849	1.865	0.025
Cr	0.002	0.000	0.001	0.001	0.022	0.012	0.000
Total	4.041	4.013	4.030	4.035	15.653	15.683	20.001
Hg/Hg+Fe	0.476	0.473	0.477	0.470	0.521	0.512	0.000
Ca Ca	0.005	0.005	0.004	0.005	0.000	0.000	0.507
Hg Na	0.473	0.471	0.475	0.467	0.000	0.000	0.487
Fe K	0.522	0.524	0.521	0.528	0.000	0.000	0.006

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 91502

Mineral	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	56.42	65.56	65.27	55.70
TiO2	0.00	0.00	0.00	0.00
Al2O3	27.27	18.54	18.46	28.51
FeO	0.00	0.00	0.00	0.00
MnO	0.00	0.00	0.00	0.00
HgO	0.00	0.00	0.00	0.00
CaO	9.33	0.00	0.00	10.53
Na2O	6.14	0.76	0.92	5.59
K2O	0.19	16.01	15.70	0.16
Cr2O3	0.00	0.00	0.00	0.00
Total	99.35	100.87	100.35	100.49

Structural Formula

NO.OX.	32.	32.	32.	32.
Si	10.192	11.998	11.997	9.979
Al iv	5.808	4.000	4.000	6.021
Al vi	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000
Fe	0.000	0.000	0.000	0.000
Mn	0.000	0.000	0.000	0.000
Hg	0.000	0.000	0.000	0.000
Ca	1.806	0.000	0.000	2.021
Na	2.151	0.270	0.328	1.942
K	0.044	3.738	3.682	0.037
Cr	0.000	0.000	0.000	0.000
Total	20.001	20.006	20.007	20.000

Hg/Hg+Fe 0.000 0.000 0.000 0.000

Ca Ca 0.451 0.000 0.000 0.505
 Hg Na 0.538 0.067 0.082 0.485
 Fe K 0.011 0.933 0.918 0.009

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 91508

Mineral	Bi	Bi	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	35.26	35.54	65.46	56.77	58.11	65.75	67.06
TiO2	2.33	2.05	0.00	0.00	0.00	0.00	0.00
Al2O3	16.38	16.26	18.51	27.70	26.89	18.62	18.96
FeO	24.72	24.82	0.00	0.00	0.00	0.00	0.00
MnO	0.21	0.21	0.00	0.00	0.00	0.00	0.00
MgO	7.28	7.17	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	9.61	8.63	0.02	0.00
Na2O	0.12	0.04	0.39	6.16	6.76	2.22	1.43
K2O	9.16	9.56	16.56	0.10	0.08	13.83	15.38
Cr2O3	0.05	0.12	0.00	0.00	0.00	0.00	0.00
Total	95.51	95.77	100.92	100.34	100.47	100.44	102.83

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	5.513	5.552	11.998	10.157	10.352	11.994	11.999
Al iv	2.487	2.448	4.000	5.843	5.648	4.004	3.999
Al vi	0.532	0.547	0.000	0.000	0.000	0.000	0.000
Ti	0.274	0.241	0.000	0.000	0.000	0.000	0.000
Fe	3.232	3.243	0.000	0.000	0.000	0.000	0.000
Mn	0.028	0.028	0.000	0.000	0.000	0.000	0.000
Mg	1.696	1.669	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	1.842	1.647	0.004	0.000
Na	0.036	0.012	0.139	2.137	2.335	0.785	0.496
K	1.827	1.905	3.872	0.023	0.018	3.219	3.511
Cr	0.006	0.015	0.000	0.000	0.000	0.000	0.000
Total	15.632	15.661	20.008	20.002	20.001	20.006	20.005
Hg/Mg+Fe	0.344	0.340	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.460	0.412	0.001	0.000
Mg Na	0.000	0.000	0.035	0.534	0.584	0.196	0.124
Fe K	0.000	0.000	0.965	0.006	0.005	0.803	0.876

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 91608

Mineral	FELD	FELD	FELD	FELD	FELD	FELD	FELD
SiO2	64.52	66.99	58.78	70.26	68.09	69.37	73.03
TiO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Al2O3	21.61	21.08	21.03	21.13	18.22	17.80	18.71
FeO	0.05	0.00	0.00	0.03	0.01	0.08	0.01
MnO	0.00	0.00	0.00	0.00	0.07	0.00	0.00
HgO	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CaO	0.06	0.09	0.07	0.10	0.00	0.08	0.09
Na2O	11.95	12.04	20.16	10.91	0.18	11.10	11.03
K2O	0.05	0.20	0.08	0.13	14.95	0.06	0.00
Cr2O3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	98.24	100.40	100.12	102.56	101.52	98.49	102.87

Structural Formula

NO.OX.	32.	32.	32.	32.	32.	32.	32.
Si	11.536	11.704	10.784	11.916	12.229	12.253	12.303
Al iv	4.555	4.342	4.549	4.225	3.858	3.707	3.716
Al vi	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fe	0.007	0.000	0.000	0.004	0.002	0.012	0.001
Mn	0.000	0.000	0.000	0.000	0.011	0.000	0.000
Hg	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca	0.011	0.017	0.014	0.018	0.000	0.015	0.016
Na	4.143	4.079	7.172	3.588	0.063	3.802	3.603
K	0.011	0.045	0.019	0.028	3.425	0.014	0.000
Cr	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	20.264	20.186	22.537	19.779	19.587	19.801	19.640
Hg/Hg+Fe	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.003	0.004	0.002	0.005	0.000	0.004	0.004
Hg Na	0.995	0.985	0.995	0.987	0.018	0.993	0.996
Fe K	0.003	0.011	0.003	0.008	0.982	0.004	0.000

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL 733)

Sample 91608

Mineral	FELD
SiO2	71.04
TiO2	0.00
Al2O3	19.30
FeO	0.00
MnO	0.00
HgO	0.00
CaO	0.08
Na2O	11.36
K2O	0.07
Cr2O3	0.14
Total	101.99

Structural Formula

NO.OX.	32.
Si	12.123
Al iv	3.883
Al vi	0.000
Ti	0.000
Fe	0.000
Mn	0.000
Hg	0.000
Ca	0.015
Na	3.759
K	0.015
Cr	0.019

Total 19.813

Hg/Hg+Fe 0.000

Ca Ca 0.004
Hg Na 0.992
Fe K 0.004

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 92006

Mineral	Bi	Bi	Feld(3)	Feld(3)	Feld(3)	Feld(3)	Feld(3)
SiO2	36.42	36.26	65.68	63.10	60.67	63.97	67.36
TiO2	1.94	1.76	0.00	0.00	0.00	0.00	0.00
Al2O3	14.36	14.25	18.57	18.31	17.34	18.10	19.41
FeO	24.52	24.78	0.00	0.00	0.00	0.00	0.00
MnO	0.41	0.35	0.00	0.00	0.00	0.00	0.00
MgO	8.63	8.70	0.00	0.00	0.00	0.00	0.00
CaO	0.00	0.00	0.00	0.38	0.15	0.01	0.30
Na2O	0.01	0.12	0.41	10.67	10.35	3.76	11.13
K2O	9.95	9.85	16.57	0.06	0.04	11.03	0.52
Cr2O3	0.05	0.03	0.00	0.00	0.00	0.00	0.00
Total	96.29	96.10	101.23	92.52	88.55	96.87	98.72

Structural Formula

NO.OX.	22.	22.	32.	32.	32.	32.	32.
Si	5.671	5.666	11.999	11.922	11.968	11.996	11.943
Al iv	2.329	2.334	3.999	4.078	4.032	4.002	4.057
Al vi	0.307	0.291	0.000	0.000	0.000	0.000	0.000
Ti	0.227	0.207	0.000	0.000	0.000	0.000	0.000
Fe	3.193	3.238	0.000	0.000	0.000	0.000	0.000
Mn	0.054	0.046	0.000	0.000	0.000	0.000	0.000
Hg	2.003	2.026	0.000	0.000	0.000	0.000	0.000
Ca	0.000	0.000	0.000	0.077	0.032	0.002	0.057
Na	0.003	0.036	0.145	3.909	3.959	1.367	3.826
K	1.977	1.964	3.862	0.014	0.010	2.639	0.118
Cr	0.006	0.004	0.000	0.000	0.000	0.000	0.000
Total	15.770	15.813	20.005	20.001	20.001	20.006	20.001
Hg/Hg+Fe	0.385	0.385	0.000	0.000	0.000	0.000	0.000
Ca Ca	0.000	0.000	0.000	0.019	0.008	0.001	0.014
Hg Na	0.000	0.000	0.036	0.977	0.990	0.341	0.956
Fe K	0.000	0.000	0.964	0.004	0.003	0.658	0.029

NO.OX. = Number of oxygens in structural formula.

Electron Microprobe Analyses (by JEOL JXA-5A)

Sample 92404

Mineral	Anph	Anph	Bi	Bi	Epi
SiO2	43.68	43.82	36.43	36.40	36.71
TiO2	1.07	0.81	1.68	1.47	0.08
Al2O3	9.27	9.23	15.96	16.44	22.88
FeO	18.07	17.98	18.19	17.37	12.89
MnO	0.43	0.43	0.35	0.35	0.19
HgO	10.74	10.80	13.05	12.87	0.00
CaO	11.79	11.67	0.00	0.00	23.63
Na2O	1.27	1.15	0.16	0.10	0.05
K2O	0.93	0.86	9.98	9.30	0.00
Cr2O3	0.00	0.00	0.05	0.05	0.01
Total	97.25	96.75	95.85	94.35	96.44

Structural Formula

NO.OX.	23.	23.	22.	22.	25.
Si	6.640	6.681	5.522	5.554	6.105
Al iv	1.360	1.319	2.478	2.446	0.000
Al vi	0.301	0.341	0.373	0.512	4.486
Ti	0.122	0.093	0.192	0.169	0.010
Fe	2.297	2.293	2.306	2.217	1.793
Mn	0.055	0.056	0.045	0.045	0.027
Hg	2.433	2.454	2.948	2.927	0.000
Ca	1.920	1.907	0.000	0.000	4.211
Na	0.374	0.340	0.047	0.030	0.016
K	0.180	0.167	1.930	1.810	0.000
Cr	0.000	0.000	0.006	0.006	0.001
Total	15.684	15.650	15.846	15.715	16.649
Hg/Hg+Fe	0.514	0.517	0.561	0.569	0.000
Ca Ca	0.289	0.287	0.000	0.000	0.000
Hg Na	0.366	0.369	0.000	0.000	0.000
Fe K	0.345	0.345	0.000	0.000	0.000

NO.OX. = Number of oxygens in structural formula.