

Table T2. Microprobe analyses of olivine in Leg 176 gabbros. (Continued on next four pages.)

Sample:*	MS1-1	MS3-2	MS6-3	MS9-4	MS11-5	MS12-6	MS14-7	MS18-8	MS19-9	MS20-10	MS22-11	MS23-12	MS26-15	MS27-16	MS28-17	MS60-19	MS70-20
N:	5	15	13	10	6	5	5	5	4	5	10	5	5	3	4	5	8
Major element oxides (wt%):																	
SiO ₂	39.86	39.56	39.55	40.04	37.60	37.28	37.63	37.25	37.02	37.06	37.07	37.14	37.22	37.95	36.54	37.50	36.91
TiO ₂	0.01	0.01	0.01	0.00	0.01	0.01	0.00	0.02	0.01	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.01
Al ₂ O ₃	0.03	0.01	0.01	0.02	0.02	0.01	0.01	0.00	0.01	0.07	0.00	0.04	0.01	0.00	0.00	0.00	0.01
FeO	15.42	17.39	17.11	15.91	27.11	28.83	26.98	29.28	30.42	30.31	30.41	29.83	30.70	27.31	33.18	28.03	31.13
MnO	0.24	0.26	0.27	0.24	0.39	0.45	0.45	0.45	0.46	0.47	0.54	0.46	0.47	0.42	0.56	0.46	0.50
MgO	44.62	43.29	43.28	45.40	34.89	33.45	34.97	33.29	32.30	32.42	32.46	32.80	32.95	36.12	30.17	34.36	31.78
CaO	0.01	0.03	0.03	0.04	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.01	0.03	0.03	0.03	0.02
NiO	0.15	0.14	0.15	0.18	0.05	0.06	0.05	0.05	0.04	0.03	0.03	0.03	0.06	0.05	0.04	0.04	0.05
Cr ₂ O ₃	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Total:	100.38	100.72	100.42	101.86	100.11	100.11	100.13	100.39	100.30	100.43	100.59	100.38	101.46	101.92	100.54	100.47	100.43
Calculated cation proportions:																	
Si	1.0000	0.9982	0.9997	0.9923	1.0012	1.0013	1.0012	0.9999	1.0003	0.9996	0.9992	0.9999	0.9950	0.9925	0.9994	0.9996	0.9999
Ti	0.0001	0.0002	0.0002	0.0001	0.0002	0.0001	0.0001	0.0004	0.0002	0.0003	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002	0.0002
Al	0.0007	0.0004	0.0002	0.0005	0.0006	0.0002	0.0003	0.0001	0.0004	0.0022	0.0001	0.0013	0.0003	0.0001	0.0000	0.0001	0.0002
Fe	0.3229	0.3664	0.3610	0.3292	0.6027	0.6465	0.5995	0.6562	0.6863	0.6825	0.6843	0.6705	0.6853	0.5963	0.7576	0.6237	0.7042
Mn	0.0051	0.0056	0.0058	0.0050	0.0088	0.0102	0.0100	0.0103	0.0106	0.0107	0.0124	0.0104	0.0106	0.0094	0.0129	0.0105	0.0115
Mg	1.6673	1.6271	1.6293	1.6757	1.3835	1.3386	1.3860	1.3313	1.3001	1.3026	1.3032	1.3154	1.3121	1.4072	1.2289	1.3642	1.2823
Ca	0.0004	0.0008	0.0008	0.0012	0.0002	0.0002	0.0003	0.0002	0.0005	0.0006	0.0005	0.0009	0.0003	0.0008	0.0008	0.0008	0.0006
Ni	0.0030	0.0028	0.0029	0.0035	0.0011	0.0013	0.0011	0.0011	0.0009	0.0007	0.0007	0.0006	0.0012	0.0011	0.0008	0.0009	0.0011
Total:	2.9995	3.0014	2.9999	3.0074	2.9983	2.9984	2.9985	2.9996	2.9993	2.9990	3.0006	2.9993	3.0048	3.0074	3.0005	3.0001	2.9999
Fo	83.4	81.2	81.5	83.2	69.3	67.0	69.4	66.6	65.1	65.2	65.1	65.8	65.3	69.8	61.4	68.2	64.1
1 σ	0.29	0.41	0.43	0.21	1.1	0.30	0.96	0.43	0.39	0.66	0.79	0.26	0.67	0.09	0.19	0.51	0.17

Notes: * = ODP sample designations for the sample IDs can be found in Table T1, p. 29. N = averages of a number of point analyses on more than one crystal in a thin section are reported. The analyses were done on a JXA-8800L Superprobe at The University of Queensland. See text for analytical details. F (fine) and C (coarse) in GS samples refer to fine-grained microgabbro "bands" or "veins" entrained or enclosed within coarse-grained gabbro host. Note the compositional similarity between F and C portions of the same samples. Fo = forsterite.

Table T2 (continued).

Sample* N:	MS71-21 3	MS72-22 3	MS74-23 3	MS76-24 6	MS79-26 3	MS82-27 3	MS8428 3	MS89-29 3	MS90-30 6	MS91-31 3	MS92-32 3	MS93-33 3	MS95-34 6	MS97-35 3	MS98-36 5	MS-99-37 5	MS101-38 5	
Major element oxides (wt%):																		
SiO ₂	38.08	37.90	38.06	38.07	38.47	38.47	38.28	38.45	37.96	38.56	38.21	38.43	38.46	38.36	38.21	38.48	38.42	
TiO ₂	0.01	0.00	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.02	0.01	0.01	0.00	
Al ₂ O ₃	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	
FeO	24.52	25.36	24.53	24.54	23.84	24.25	24.38	24.43	27.24	23.28	23.87	22.91	22.64	23.08	23.99	22.48	22.61	
MnO	0.37	0.38	0.37	0.38	0.37	0.37	0.38	0.37	0.41	0.36	0.36	0.34	0.35	0.35	0.37	0.36	0.33	
MgO	36.92	36.20	36.89	36.87	38.48	38.44	37.74	38.34	36.17	38.91	37.52	38.41	38.58	38.14	37.48	38.66	38.43	
CaO	0.04	0.03	0.03	0.04	0.03	0.05	0.03	0.05	0.01	0.04	0.01	0.02	0.03	0.04	0.04	0.02	0.03	
NiO	0.07	0.04	0.06	0.06	0.05	0.08	0.07	0.07	0.07	0.08	0.07	0.09	0.07	0.06	0.07	0.09	0.07	
Cr ₂ O ₃	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	
Total:	100.05	99.96	99.97	100.01	101.31	101.70	100.89	101.75	101.93	101.25	100.10	100.26	100.18	100.08	100.21	100.14	99.93	
Calculated cation proportions:																		
Si	1.0016	1.0020	1.0018	1.0018	0.9954	0.9932	0.9972	0.9932	0.9926	0.9955	1.0013	1.0007	1.0010	1.0015	1.0009	1.0012	1.0022	
Ti	0.0002	0.0001	0.0002	0.0003	0.0004	0.0004	0.0002	0.0001	0.0002	0.0003	0.0003	0.0002	0.0002	0.0003	0.0001	0.0002	0.0001	
Al	0.0001	0.0001	0.0002	0.0002	0.0001	0.0002	0.0002	0.0003	0.0003	0.0001	0.0003	0.0002	0.0002	0.0001	0.0002	0.0004	0.0002	
Fe	0.5386	0.5597	0.5390	0.5391	0.5150	0.5227	0.5302	0.5268	0.5946	0.5018	0.5223	0.4981	0.4919	0.5030	0.5246	0.4883	0.4924	
Mn	0.0083	0.0086	0.0083	0.0085	0.0081	0.0081	0.0083	0.0080	0.0090	0.0078	0.0079	0.0074	0.0076	0.0077	0.0082	0.0079	0.0072	
Mg	1.4468	1.4256	1.4464	1.4452	1.4833	1.4784	1.4643	1.4752	1.4087	1.4961	1.4643	1.4900	1.4956	1.4832	1.4623	1.4981	1.4933	
Ca	0.0013	0.0010	0.0007	0.0013	0.0009	0.0015	0.0007	0.0013	0.0003	0.0010	0.0003	0.0006	0.0008	0.0011	0.0011	0.0006	0.0008	
Ni	0.0013	0.0009	0.0013	0.0012	0.0010	0.0017	0.0015	0.0015	0.0015	0.0017	0.0015	0.0018	0.0015	0.0013	0.0015	0.0017	0.0014	
Total:	2.9982	2.9978	2.9979	2.9977	3.0041	3.0062	3.0025	3.0065	3.0071	3.0042	2.9982	2.9990	2.9988	2.9981	2.9989	2.9984	2.9976	
Fo	72.5	71.4	72.5	72.4	73.9	73.5	73.0	73.3	69.9	74.5	73.4	74.6	74.9	74.3	73.2	75.0	74.8	
1 σ	0.17	0.09	0.18	0.15	0.07	0.16	0.30	0.13	0.69	0.52	0.62	0.21	0.33	0.34	0.48	0.34	0.19	

Table T2 (continued).

Sample:*	GS30-1	GS30-1	GS31-2	GS31-2	GS32-3	GS33-3	GS33-4	GS33-4	GS34-5	GS40-6	GS40-6	GS40-6	GS44-8	GS44-8	GS64-10	GS64-10	GS77-11
N:	5	5	3	3	3	3	3	3	3	3	3	3	3	3	5	5	5
	F	C	F	C	C	F	F	C	C	C	F		F	C	F	C	C
Major element oxides (wt%):																	
SiO ₂	37.38	37.31	38.12	37.90	37.08	37.33	38.05	37.79	37.58	37.15	37.59	37.11	37.46	37.13	37.25	37.54	37.67
TiO ₂	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.00	0.01	0.00	0.02	0.01	0.01	0.02	0.01	0.01	0.01
Al ₂ O ₃	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00
FeO	27.89	28.32	24.29	25.16	28.99	27.38	23.68	25.06	26.40	28.74	26.57	29.71	28.25	30.10	28.04	26.36	25.84
MnO	0.43	0.44	0.37	0.38	0.45	0.40	0.37	0.38	0.41	0.42	0.41	0.42	0.44	0.46	0.42	0.44	0.40
MgO	33.94	33.61	37.08	36.18	32.71	33.83	36.90	35.83	34.88	33.03	34.88	32.73	34.20	32.72	33.48	34.72	35.26
CaO	0.04	0.04	0.04	0.02	0.04	0.02	0.01	0.02	0.01	0.04	0.02	0.00	0.03	0.01	0.01	0.03	0.03
NiO	0.08	0.06	0.07	0.07	0.05	0.06	0.08	0.02	0.06	0.05	0.06	0.06	0.05	0.05	0.06	0.05	0.05
Cr ₂ O ₃	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01
Total:	99.80	99.85	100.03	99.75	99.39	99.07	99.15	99.13	99.39	99.46	99.57	100.09	100.45	100.54	99.28	99.17	99.28
Calculated cation proportions:																	
Si	1.0029	1.0028	1.0018	1.0031	1.0051	1.0065	1.0064	1.0061	1.0050	1.0045	1.0040	1.0015	0.9995	0.9993	1.0053	1.0060	1.0054
Ti	0.0002	0.0003	0.0003	0.0003	0.0004	0.0001	0.0002	0.0001	0.0002	0.0001	0.0005	0.0003	0.0001	0.0004	0.0003	0.0002	0.0002
Al	0.0001	0.0001	0.0001	0.0002	0.0000	0.0002	0.0001	0.0000	0.0002	0.0002	0.0001	0.0001	0.0000	0.0003	0.0002	0.0001	0.0000
Fe	0.6246	0.6354	0.5330	0.5560	0.6561	0.6164	0.5228	0.5571	0.5895	0.6487	0.5924	0.6694	0.6293	0.6763	0.6319	0.5897	0.5759
Mn	0.0098	0.0101	0.0083	0.0086	0.0104	0.0091	0.0083	0.0086	0.0093	0.0096	0.0092	0.0097	0.0100	0.0104	0.0096	0.0099	0.0090
Mg	1.3563	1.3455	1.4517	1.4265	1.3204	1.3590	1.4536	1.4209	1.3892	1.3303	1.3877	1.3158	1.3595	1.3118	1.3459	1.3859	1.4021
Ca	0.0013	0.0012	0.0012	0.0006	0.0011	0.0007	0.0003	0.0006	0.0002	0.0010	0.0005	0.0001	0.0009	0.0004	0.0002	0.0009	0.0008
Ni	0.0016	0.0014	0.0015	0.0014	0.0010	0.0014	0.0017	0.0004	0.0013	0.0010	0.0012	0.0012	0.0010	0.0011	0.0012	0.0011	0.0010
Total:	2.9968	2.9968	2.9979	2.9965	2.9946	2.9933	2.9934	2.9938	2.9948	2.9954	2.9955	2.9981	3.0004	3.0001	2.9944	2.9938	2.9944
Fo	68.0	67.5	72.7	71.6	66.4	68.4	73.2	71.5	69.8	66.8	69.7	65.9	67.9	65.6	67.7	69.7	70.5
1 σ	0.28	0.32	0.53	0.31	0.66	0.20	0.27	0.21	0.07	0.26	0.31	0.33	0.37	0.27	0.17	0.57	0.10

Table T2 (continued).

Sample:*	GS77-11	GS83-12	GS83-12	GS86-13	GS87-14	GS88-15	GS88-15	GS96-16	GS100-17	GS100-17	GS55-19	GS85-20	GS85-20	GS102-21	FV5-2	FV29-5	FV45-9
N:	5	5	5	5	3	2	3	3	2	3	4	3	3	5	4	3	6
	F	F	C	F	C	C	F		F	C		F	C	F			
Major element oxides (wt%):																	
SiO ₂	37.72	38.34	38.33	37.23	38.10	37.95	38.04	38.47	38.41	38.28	37.51	38.10	38.21	37.96	39.08	36.91	37.91
TiO ₂	0.02	0.00	0.01	0.02	0.01	0.00	0.03	0.01	0.01	0.01	0.01	0.03	0.01	0.04	0.01	0.01	0.02
Al ₂ O ₃	0.01	0.01	0.01	0.02	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00
FeO	25.33	22.28	22.67	28.46	23.69	24.56	23.98	21.83	22.30	22.88	28.13	23.70	23.56	24.47	18.42	29.91	24.66
MnO	0.39	0.33	0.34	0.40	0.33	0.34	0.36	0.31	0.31	0.33	0.44	0.35	0.36	0.36	0.29	0.48	0.38
MgO	35.50	38.14	38.06	33.35	37.02	36.46	36.81	38.71	38.40	37.89	34.41	37.07	37.52	36.46	41.27	32.01	36.29
CaO	0.03	0.01	0.03	0.01	0.03	0.01	0.01	0.01	0.02	0.04	0.02	0.03	0.05	0.03	0.03	0.03	0.02
NiO	0.06	0.08	0.07	0.08	0.11	0.08	0.08	0.09	0.10	0.07	0.05	0.07	0.09	0.06	0.13	0.02	0.05
Cr ₂ O ₃	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01
Total:	99.10	99.22	99.57	99.59	99.44	99.46	99.35	99.46	99.58	99.52	100.60	99.41	99.82	99.40	99.27	99.37	99.35
Calculated cation proportions:																	
Si	1.0064	1.0058	1.0041	1.0038	1.0044	1.0047	1.0053	1.0045	1.0040	1.0042	0.9989	1.0049	1.0028	1.0047	1.0059	1.0048	1.0051
Ti	0.0003	0.0001	0.0002	0.0004	0.0002	0.0000	0.0006	0.0002	0.0001	0.0003	0.0002	0.0006	0.0002	0.0008	0.0001	0.0001	0.0004
Al	0.0004	0.0003	0.0003	0.0005	0.0036	0.0001	0.0000	0.0004	0.0003	0.0001	0.0002	0.0001	0.0003	0.0002	0.0000	0.0000	0.0000
Fe	0.5642	0.4881	0.4958	0.6405	0.5213	0.5429	0.5291	0.4757	0.4867	0.5011	0.6253	0.5220	0.5162	0.5407	0.3962	0.6799	0.5459
Mn	0.0088	0.0073	0.0075	0.0091	0.0074	0.0076	0.0080	0.0069	0.0068	0.0073	0.0098	0.0078	0.0079	0.0081	0.0064	0.0110	0.0085
Mg	1.4108	1.4906	1.4851	1.3395	1.4537	1.4378	1.4493	1.5053	1.4953	1.4803	1.3649	1.4566	1.4666	1.4376	1.5818	1.2980	1.4331
Ca	0.0010	0.0002	0.0010	0.0002	0.0007	0.0004	0.0002	0.0004	0.0006	0.0010	0.0006	0.0009	0.0013	0.0008	0.0008	0.0007	0.0005
Ni	0.0013	0.0016	0.0015	0.0016	0.0023	0.0017	0.0017	0.0018	0.0020	0.0014	0.0010	0.0015	0.0018	0.0013	0.0027	0.0005	0.0010
Total:	2.9931	2.9939	2.9955	2.9956	2.9936	2.9952	2.9941	2.9951	2.9958	2.9955	3.0008	2.9944	2.9969	2.9944	2.9940	2.9950	2.9945
Fo	71.0	75.0	74.6	67.3	73.2	72.2	72.9	75.6	75.1	74.3	68.2	73.2	73.6	72.3	79.6	65.2	72.1
1 σ	0.55	0.46	0.23	0.14	0.16	0.15	0.09	0.20	0.05	0.32	0.55	0.27	0.11	0.10	2.11	0.12	0.82

Table T2 (continued).

Sample* N:	FV47-10 6	FV50-11 3	FV58-13 6	FV61-14 6	FV62-15 3	FV63-16 3
Major element oxides (wt%):						
SiO ₂	37.14	38.25	36.87	37.38	37.49	37.35
TiO ₂	0.01	0.00	0.01	0.02	0.00	0.01
Al ₂ O ₃	0.00	0.02	0.01	0.00	0.01	0.06
FeO	28.28	24.16	31.35	28.95	29.09	29.37
MnO	0.47	0.36	0.52	0.43	0.45	0.45
MgO	33.00	37.61	31.60	33.80	34.21	33.59
CaO	0.01	0.01	0.02	0.03	0.01	0.03
NiO	0.06	0.07	0.05	0.03	0.02	0.07
Cr ₂ O ₃	0.01	0.02	0.00	0.01	0.01	0.00
Total:	99.04	100.56	100.48	100.73	101.31	100.97
Calculated cation proportions:						
Si	1.0070	0.9993	0.9997	0.9987	0.9954	0.9971
Ti	0.0002	0.0001	0.0003	0.0004	0.0001	0.0002
Al	0.0000	0.0006	0.0004	0.0000	0.0004	0.0019
Fe	0.6402	0.5270	0.7097	0.6457	0.6447	0.6546
Mn	0.0108	0.0080	0.0119	0.0097	0.0100	0.0102
Mg	1.3329	1.4635	1.2762	1.3451	1.3529	1.3355
Ca	0.0003	0.0003	0.0005	0.0007	0.0004	0.0007
Ni	0.0012	0.0015	0.0011	0.0006	0.0005	0.0015
Total:	2.9927	3.0003	2.9998	3.0009	3.0044	3.0018
Fo	67.1	73.2	63.8	67.2	67.4	66.7
1 σ	1.4	0.51	0.54	0.46	0.11	0.21