Original tables for deposit

Table 3 Melt compositions: analytical, mass balance and modeling results.

Run no.	[a]C3269		[a]C3922		D1222		C3927		C3955	
Starting Comp.	EPSM-1		EPSM-2		EPSM-6		EPSM-3		EPSM-4	
		[b]*σ(8)*		*σ(5)*		*σ(5)*		*σ(5)*		*σ(6)*
SiO_2	63.60	*0.64*	64.47	*0.58*	62.64	*0.28*	64.91	*1.03*	63.42	*0.36*
TiO_2	0.22	*0.04*	0.17	*0.07*	0.21	*0.12*	0.15	*0.03*	0.22	*0.05*
Al_2O_3	12.42	*0.32*	12.58	*0.18*	12.73	*0.08*	12.63	*0.10*	12.59	*0.11*
FeO	0.54	*0.07*	0.57	*0.11*	0.48	*0.07*	0.33	*0.09*	0.42	*0.10*
MgO	0.39	*0.04*	0.38	*0.03*	0.42	*0.03*	0.39	*0.02*	0.35	*0.10*
CaO	0.87	*0.05*	0.72	*0.07*	0.68	*0.03*	0.64	*0.04*	0.62	*0.04*
Na_2O	3.12	*0.51*	3.75	*0.42*	4.12	*0.14*	4.30	*0.10*	4.64	*0.15*
K_2O	3.33	*0.10*	3.09	*0.10*	3.07	*0.04*	3.04	*0.05*	2.76	*0.06*
P_2O_5	0.29	*0.04*	0.32	*0.07*	0.35	*0.04*	0.20	*0.04*	0.19	*0.06*
Cl	0.08	*0.02*	0.26	*0.01*	0.07	*0.02*			0.11	*0.02*
Total	84.85	*0.93*	86.30	*0.46*	84.90	*0.56*	86.60	*1.08*	85.30	*0.68*
		σ(9)		*σ(4)*		*σ(5)*		*σ(4)*		*σ(6)*
[c]Cl(EMPA)	0.09	*0.01*	0.33	*0.02*	0.07	*0.01*			0.10	*0.01*
[c]F(EMPA)							0.04	*0.01*	0.06	*0.01*
[d]Si/Al	4.35		4.36		4.18		4.37		4.28	
[d]Na+K/Al	0.70		0.76		0.79		0.82		0.84	
Mass balance results										
Cl wt%	0.12	*0.02*	0.28	*0.05*	0.11	*0.02*			0.11	*0.02*
H_2O wt%	11	*2*	11	*2*	12	*2*	12	*2*	12	*3*
F wt%							0.05	*0.01*	0.07	*0.01*
[e]Modeling after Silver and Stolper (1985) and Hui et al. (2008)										
W	32.43		32.51		32.54		*32.43*		32.52	
K_1	0.34		0.34		0.34		0.34		0.34	
X_{H2Ot}	0.19	*0.03*	0.18	*0.03*	0.20	*0.04*	0.20	*0.04*	0.20	*0.04*
X_{H2Om}	0.11	*0.04*	0.10	*0.04*	0.11	*0.04*	0.11	*0.04*	0.11	*0.05*
X_O	0.73	*0.04*	0.74	*0.04*	0.72	*0.04*	0.72	*0.04*	0.72	*0.05*
X_{OH}	0.16	*0.03*	0.16	*0.03*	0.17	*0.03*	0.17	*0.03*	0.17	*0.03*
X_{Cl}	0.0007	*0.0002*	0.0022	*0.0001*	0.0006	*0.0002*			0.0009	*0.0002*
X_F							0.0006	*0.0001*	0.0009	*0.0001*

Table 3 (continued)

Run no.	[a]D1218		C4049		C4058		C4059	
Starting Comp.	EPSM-5		EPSM-8		EPSM-10		EPSM-9	
		[b]*σ(4)*		*σ(5)*		*σ(6)*		*σ(6)*
SiO_2	63.78	*0.03*	63.48	*0.27*	63.13	*0.36*	62.38	*0.20*
TiO_2	0.20	*0.06*	0.19	*0.03*	0.23	*0.04*	0.19	*0.03*
Al_2O_3	12.16	*0.11*	12.30	*0.12*	12.55	*0.07*	12.22	*0.06*
FeO	0.65	*0.10*	0.73	*0.05*	0.56	*0.05*	0.65	*0.06*
MgO	0.49	*0.03*	0.60	*0.02*	0.49	*0.06*	0.63	*0.04*
CaO	0.95	*0.06*	1.11	*0.04*	0.82	*0.03*	0.95	*0.04*
Na_2O	3.04	*0.11*	3.41	*0.06*	4.23	*0.10*	4.00	*0.15*
K_2O	3.56	*0.04*	3.48	*0.05*	2.78	*0.04*	2.88	*0.03*
P_2O_5	0.31	*0.05*	0.38	*0.05*	0.26	*0.06*	0.30	*0.05*
Cl	0.23	*0.02*	0.39	*0.04*	0.15	*0.03*	0.28	*0.02*
Total	85.36	*0.13*	86.06	*0.27*	85.19	*0.57*	84.48	*0.32*
		σ(3)		*σ(3)*		*σ(5)*		*σ(5)*
[c]Cl(EMPA)	0.22	*0.01*	0.36	*0.06*	0.16	*0.01*	0.30	*0.05*
[c]F(EMPA)	0.03	*0.004*	0.02	*0.01*	0.15	*0.01*	0.15	*0.01*
[d]Si/Al	4.46		4.39		4.27		4.34	
[d]Na+K/Al	0.73		0.76		0.79		0.79	
Mass balance results								
Cl wt%	0.32	*0.06*	0.62	*0.10*	0.18	*0.03*	0.35	*0.06*
H_2O wt%	11	*2*	11	*2*	12	*2*	12	*2*
F wt%	0.06	*0.01*	0.07	*0.01*	0.14	*0.03*	0.14	*0.02*
[e]Modeling after Silver and Stolper (1985) and Hui et al. (2008)								
W	*32.56*		32.72		32.54		32.64	
K_1	0.34		0.34		0.34		0.34	
X_{H2Ot}	0.18	*0.03*	0.18	*0.03*	0.20	*0.04*	0.20	*0.04*
X_{H2Om}	0.10	*0.04*	0.10	*0.03*	0.11	*0.04*	0.11	*0.04*
X_O	0.74	*0.04*	0.74	*0.03*	0.72	*0.04*	0.72	*0.04*
X_{OH}	0.16	*0.03*	0.16	*0.02*	0.17	*0.03*	0.17	*0.03*
X_{Cl}	0.0019	*0.0002*	0.0033	*0.0004*	0.0013	*0.0003*	0.0024	*0.0002*
X_F	0.0005	*0.0001*	0.0003	*0.0001*	0.0024	*0.0002*	0.0024	*0.0001*

[a]This experiment was previously reported in Li and Hermann (2015), and is relisted here for ease of comparison.

[b]The standard deviation of multiple analyses; number of analyses shown in brackets.

[c]Cl and F contents in melt obtained from EMP WDS analysis.

[d]These are molar ratios.

[e]Hydrous silicate melts are modeled as ideal mixtures of water molecules (H_2O_m), OH, O, Cl and F following the work of Silver and Stolper (1985). *W* (in g/mol) is the molar weight of anhydrous silicate per oxygen for melt. K_1 is the equilibrium constant for the reaction H_2O_m (melt) + O (melt) = 2OH (melt), calculated based on Hui et al. (2008); X_{H2Ot}, X_{OH}, X_{H2Om}, X_O, X_{Cl} and X_F are the mole fractions of total H_2O, OH, H_2O_m, O, Cl and F, respectively. For further details see appendix C of Li and Hermann (2015).

Table 4 Apatite compositions and resultant partition and exchange coefficients.

Run no.	[a]C3269		[a]C3922		D1222		C3927		C3955	
Starting Comp.	EPSM-1		EPSM-2		EPSM-6		EPSM-3		EPSM-4	
		[b]σ(10)		σ(6)		σ(6)		σ(5)		σ(7)
SiO_2	1.11	*0.24*	0.69	*0.23*	0.67	*0.29*	0.66	*0.09*	0.74	*0.24*
Al_2O_3	0.24	*0.15*	0.13	*0.05*	0.17	*0.09*	0.12	*0.04*	0.17	*0.05*
FeO	0.86	*0.14*	1.04	*0.09*	0.97	*0.12*	0.59	*0.08*	0.74	*0.10*
MgO	0.58	*0.06*	0.65	*0.03*	0.68	*0.04*	0.50	*0.07*	0.43	*0.08*
CaO	49.86	*0.79*	49.59	*0.36*	50.34	*0.16*	50.40	*1.22*	50.79	*0.49*
Na_2O	0.35	*0.08*	0.41	*0.11*	0.42	*0.11*	0.42	*0.26*	0.65	*0.17*
K_2O	0.18	*0.07*	0.15	*0.04*	0.11	*0.05*	0.15	*0.05*	0.15	*0.05*
P_2O_5	41.61	*0.63*	39.72	*0.14*	40.91	*0.33*	39.53	*0.91*	40.37	*0.47*
Cl	1.20	*0.07*	2.67	*0.06*	0.91	*0.03*			0.33	*0.02*
								σ(20)		σ(15)
[c]F(EMPA)							2.02	*0.14*	2.05	*0.08*
Less O=F							-0.85		-0.86	
Less O=Cl	-0.27		-0.60		-0.20				-0.07	
Total	95.71	*1.41*	94.44	*0.51*	94.97	*0.21*	93.55	*2.27*	95.48	*0.93*
Apatite structure formula based on 12.5 O^{2-}										
Si	0.095	*0.020*	0.061	*0.020*	0.058	*0.025*	0.059	*0.008*	0.064	*0.021*
Al	0.024	*0.015*	0.013	*0.005*	0.017	*0.010*	0.013	*0.005*	0.018	*0.005*
Fe	0.062	*0.010*	0.077	*0.007*	0.070	*0.009*	0.044	*0.006*	0.054	*0.007*
Mg	0.073	*0.008*	0.086	*0.004*	0.088	*0.005*	0.066	*0.008*	0.056	*0.010*
Ca	4.568	*0.030*	4.706	*0.034*	4.667	*0.021*	4.789	*0.031*	4.736	*0.037*
Na	0.058	*0.014*	0.070	*0.019*	0.071	*0.018*	0.072	*0.044*	0.109	*0.029*
K	0.019	*0.008*	0.017	*0.005*	0.013	*0.006*	0.017	*0.006*	0.017	*0.005*
P	3.013	*0.017*	2.978	*0.013*	2.997	*0.024*	2.968	*0.005*	2.974	*0.012*
Tot.Cat.	7.912	*0.017*	8.007	*0.011*	7.980	*0.019*	8.027	*0.024*	8.028	*0.022*
F							0.567	*0.040*	0.565	*0.024*
Cl	0.173	*0.009*	0.401	*0.009*	0.133	*0.005*			0.048	*0.004*
OH	0.827	*0.009*	0.599	*0.009*	0.867	*0.005*	0.433	*0.040*	0.387	*0.024*
[d]X_F							0.537	*0.036*	0.545	*0.022*
[d]X_{Cl}	0.176	*0.011*	0.392	*0.008*	0.133	*0.005*			0.048	*0.004*
[d]X_{OH}	0.824	*0.011*	0.608	*0.008*	0.867	*0.005*	0.463	*0.036*	0.407	*0.023*
Partition and exchange coefficients										
[e]C_{Cl}^{melt} wt%	0.09	0.01	0.26	*0.01*	0.07	*0.01*			0.11	*0.02*
$D_{Cl}^{Ap\text{-}melt}$	13.8	*1.3*	10.1	*0.6*	12.4	*2.2*			3.1	*0.7*
$K_{d\,Cl\text{-}OH}^{Ap\text{-}melt}$	47	*9*	49	*9*	42	*11*			23	*7*
[f]C_F^{melt} wt%							0.04	*0.01*	0.06	*0.01*
$D_F^{Ap\text{-}melt}$							51	*11*	34	*4*
$K_{d\,F\text{-}OH}^{Ap\text{-}melt}$							353	*105*	256	*62*
$K_{d\,F\text{-}Cl}^{Ap\text{-}melt}$									11	*3*

Table 4 (continued)

Run no.	[a]D1218		C4049		C4058		C4059	
Starting Comp.	EPSM-5		EPSM-8		EPSM-10		EPSM-9	
		σ(8)		*σ(6)*		*σ(6)*		*σ(6)*
SiO_2	0.62	*0.19*	0.55	*0.08*	0.72	*0.20*	0.82	*0.41*
Al_2O_3	0.13	*0.03*	0.10	*0.04*	0.13	*0.04*	0.16	*0.06*
FeO	0.91	*0.11*	1.11	*0.14*	0.71	*0.14*	0.86	*0.08*
MgO	0.67	*0.08*	0.62	*0.07*	0.45	*0.06*	0.47	*0.07*
CaO	51.61	*0.37*	50.98	*0.43*	51.06	*0.48*	50.75	*0.50*
Na_2O	0.25	*0.10*	0.24	*0.04*	0.31	*0.16*	0.27	*0.05*
K_2O	0.12	*0.04*	0.15	*0.03*	0.17	*0.06*	0.16	*0.05*
P_2O_5	40.68	*0.24*	42.52	*0.45*	42.13	*0.40*	41.87	*0.48*
Cl	0.88	*0.02*	1.33	*0.04*	0.34	*0.02*	0.51	*0.01*
		σ(21)		*σ(24)*		*σ(20)*		*σ(20)*
[c]F(EMPA)	1.71	*0.10*	1.57	*0.16*	2.49	*0.16*	2.38	*0.15*
Less O=F	-0.72		-0.66		-1.05		-1.00	
Less O=Cl	-0.20		-0.30		-0.08		-0.12	
Total	96.66	*0.62*	98.20	*0.97*	97.38	*1.12*	97.12	*0.52*
Apatite structure formula based on 12.5 O^{2-}								
Si	0.053	*0.016*	0.046	*0.007*	0.061	*0.017*	0.070	*0.035*
Al	0.013	*0.003*	0.008	*0.005*	0.013	*0.004*	0.016	*0.006*
Fe	0.066	*0.008*	0.079	*0.010*	0.050	*0.010*	0.061	*0.006*
Mg	0.086	*0.010*	0.078	*0.008*	0.057	*0.008*	0.060	*0.009*
Ca	4.768	*0.026*	4.613	*0.024*	4.645	*0.017*	4.634	*0.033*
Na	0.041	*0.016*	0.039	*0.007*	0.051	*0.025*	0.044	*0.009*
K	0.013	*0.004*	0.016	*0.003*	0.018	*0.007*	0.017	*0.005*
P	2.970	*0.011*	3.040	*0.004*	3.029	*0.013*	3.021	*0.023*
Tot.Cat.	8.012	*0.010*	7.918	*0.011*	7.924	*0.023*	7.922	*0.011*
F	0.465	*0.029*	0.420	*0.044*	0.669	*0.044*	0.641	*0.041*
Cl	0.128	*0.003*	0.190	*0.006*	0.049	*0.003*	0.074	*0.002*
OH	0.407	*0.029*	0.390	*0.044*	0.282	*0.044*	0.285	*0.041*
[d]X_F	0.453	*0.028*	0.417	*0.043*	0.661	*0.043*	0.631	*0.039*
[d]X_{Cl}	0.129	*0.003*	0.195	*0.005*	0.050	*0.003*	0.075	*0.002*
[d]X_{OH}	0.419	*0.028*	0.387	*0.044*	0.289	*0.043*	0.294	*0.039*
Partition and exchange coefficients								
[e]C_{Cl}^{melt} wt%	0.22	*0.02*	0.39	*0.04*	0.15	*0.03*	0.28	*0.02*
$D_{Cl}^{Ap\text{-}melt}$	3.9	*0.4*	3.4	*0.4*	2.3	*0.5*	1.8	*0.2*
$K_{d\,Cl\text{-}OH}^{Ap\text{-}melt}$	27	*6*	25	*5*	24	*8*	19	*5*
[f]C_F^{melt} wt%	0.03	*0.004*	0.02	*0.01*	0.15	*0.01*	0.15	*0.01*
$D_F^{Ap\text{-}melt}$	51	*7*	72	*22*	16	*1*	16	*1*
$K_{d\,F\text{-}OH}^{Ap\text{-}melt}$	343	*78*	512	*184*	173	*44*	164	*39*
$K_{d\,F\text{-}Cl}^{Ap\text{-}melt}$	13	*2*	21	*7*	7	*2*	9	*1*

[a]This experiment was previously reported in Li and Hermann (2015), and is relisted here for ease of comparison.

[b]The standard deviation of multiple analyses; number of analyses shown in brackets.

[c]F and Cl contents obtained from EMP WDS analysis.

[d]Mole fractions of F and Cl in apatite are calculated using the method of Piccoli and Candela (2002) with the equations: $X_F^{Ap}=C_F^{Ap}/3.767$ and $X_{Cl}^{Ap}=C_{Cl}^{Ap}/6.809$, where X_F^{Ap} & X_{Cl}^{Ap} are the mole fractions of FAp and ClAp, and C_F^{Ap} & C_{Cl}^{Ap} are the concentrations of F and Cl in apatite in wt%.

[e]Cl content in melt obtained from SEM EDS analysis if >0.1 wt%, and EMP WDS analysis if <0.1 wt%.

[f]F content in melt obtained from EMP WDS analysis.

Table 5 Phengite compositions and resultant partition and exchange coefficients.

Run no.	[a]C3269		[a]C3922		D1222		C3927		C3955	
Starting Comp.	EPSM-1		EPSM-2		EPSM-6		EPSM-3		EPSM-4	
		[b]σ(5)		σ(6)		σ(4)		σ(5)		σ(5)
SiO_2	47.17	*0.79*	47.81	*1.07*	47.47	*0.53*	44.80	*4.39*	48.12	*0.68*
TiO_2	1.88	*0.17*	1.62	*0.18*	1.55	*0.13*	1.58	*0.23*	1.56	*0.09*
Al_2O_3	26.87	*0.99*	28.02	*1.18*	26.69	*0.65*	25.94	*2.35*	27.11	*0.50*
FeO	1.33	*0.26*	1.47	*0.18*	1.91	*0.25*	1.62	*0.21*	1.55	*0.12*
MgO	4.75	*0.42*	4.39	*0.37*	4.50	*0.35*	4.65	*0.42*	4.57	*0.14*
Na_2O	0.67	*0.11*	1.03	*0.22*	1.67	*0.45*	1.01	*0.17*	1.42	*0.20*
K_2O	9.65	*0.38*	9.89	*0.40*	9.25	*0.31*	9.23	*0.81*	9.54	*0.16*
Cl									0.032	*0.013*
Total	92.32	*1.71*	94.23	*0.29*	93.03	*1.08*	88.83	*8.26*	93.90	*0.66*
		σ(3)		σ(6)		σ(5)				σ(5)
[c]Cl(EMPA)	0.022	*0.002*	0.058	*0.010*	0.016	*0.005*			0.025	*0.006*
								σ(8)		σ(8)
[c]F(EMPA)							0.08	*0.03*	0.09	*0.02*
Structure formula based on $11O^{2-}$										
Si	3.250	*0.023*	3.233	*0.070*	3.259	*0.033*	3.220	*0.033*	3.266	*0.029*
Ti	0.097	*0.007*	0.082	*0.009*	0.080	*0.007*	0.085	*0.006*	0.080	*0.005*
Al	2.181	*0.044*	2.233	*0.091*	2.159	*0.043*	2.199	*0.037*	2.169	*0.039*
Fe	0.077	*0.016*	0.083	*0.010*	0.109	*0.014*	0.098	*0.011*	0.088	*0.007*
Mg	0.488	*0.051*	0.442	*0.038*	0.460	*0.036*	0.500	*0.028*	0.462	*0.017*
Na	0.090	*0.016*	0.135	*0.029*	0.222	*0.059*	0.141	*0.015*	0.187	*0.025*
K	0.848	*0.021*	0.853	*0.036*	0.810	*0.027*	0.847	*0.021*	0.826	*0.017*
Tot. Cat.	7.031	*0.017*	7.062	*0.031*	7.098	*0.026*	7.089	*0.025*	7.077	*0.013*
Cl	0.003	*0.000*	0.007	*0.001*	0.002	*0.001*			0.003	*0.001*
F							0.018	*0.007*	0.019	*0.005*
OH	1.997	*0.000*	1.993	*0.001*	1.998	*0.001*	1.982	*0.007*	1.979	*0.005*
Partition and exchange coefficients										
[e]C_{Cl}^{melt} wt%	0.09	0.01	0.26	*0.01*	0.07	*0.01*			0.11	*0.02*
$D_{Cl}^{Phen\text{-}melt}$	0.25	*0.03*	0.22	*0.04*	0.22	*0.08*			0.24	*0.08*
[f]C_F^{melt} wt%							0.04	*0.01*	0.06	*0.01*
$D_F^{Phen\text{-}melt}$							2.0	*0.9*	1.4	*0.4*
$K_{d\,Cl\text{-}OH}^{Phen\text{-}melt}$	0.28	*0.06*	0.24	*0.06*	0.26	*0.12*			0.27	*0.10*
$K_{d\,F\text{-}OH}^{Phen\text{-}melt}$									6	*3*
$K_{d\,F\text{-}Cl}^{Phen\text{-}melt}$							2	*1*	1.7	*0.6*

Table 5 (continued)

Run no.	[a]D1218		C4049		C4058		C4059	
Starting Comp.	EPSM-5		EPSM-8		EPSM-10		EPSM-9	
		σ(6)		*σ(4)*		*σ(5)*		*σ(4)*
SiO_2	47.58	*0.71*	47.04	*0.62*	47.97	*1.12*	47.18	*0.24*
TiO_2	1.54	*0.21*	1.47	*0.15*	1.44	*0.12*	1.16	*0.13*
Al_2O_3	26.84	*0.61*	27.37	*0.49*	27.32	*0.91*	27.78	*0.40*
FeO	1.41	*0.27*	2.32	*0.32*	1.92	*0.55*	2.23	*0.34*
MgO	5.11	*0.76*	5.21	*0.37*	4.42	*0.19*	4.06	*0.42*
Na_2O	0.46	*0.02*	0.47	*0.05*	1.09	*0.42*	0.68	*0.09*
K_2O	9.82	*0.23*	9.97	*0.14*	9.54	*0.37*	9.85	*0.23*
Cl	0.042	*0.023*	0.123	*0.022*	0.056	*0.025*	0.085	*0.013*
Total	92.80	*0.39*	93.95	*0.67*	93.76	*0.94*	93.03	*0.25*
		σ(5)		*σ(6)*		*σ(5)*		*σ(7)*
[c]Cl(EMPA)	0.054	*0.006*	0.101	*0.012*	0.043	*0.006*	0.061	*0.014*
[c]F(EMPA)	0.15	*0.02*	0.04	*0.02*	0.19	*0.02*	0.22	*0.04*
Structure formula based on $11O^{2-}$								
Si	3.263	*0.027*	3.210	*0.019*	3.262	*0.073*	3.242	*0.010*
Ti	0.079	*0.011*	0.075	*0.008*	0.074	*0.006*	0.060	*0.007*
Al	2.168	*0.036*	2.201	*0.028*	2.190	*0.069*	2.250	*0.030*
Fe	0.081	*0.016*	0.132	*0.019*	0.109	*0.031*	0.128	*0.020*
Mg	0.523	*0.080*	0.530	*0.040*	0.448	*0.020*	0.416	*0.043*
Na	0.061	*0.003*	0.062	*0.006*	0.143	*0.055*	0.091	*0.012*
K	0.859	*0.023*	0.868	*0.012*	0.828	*0.031*	0.864	*0.019*
Tot. Cat.	7.034	*0.055*	7.079	*0.030*	7.055	*0.028*	7.050	*0.005*
Cl	0.006	*0.001*	0.012	*0.001*	0.005	*0.001*	0.007	*0.002*
F	0.032	*0.003*	0.009	*0.004*	0.041	*0.005*	0.047	*0.008*
OH	1.962	*0.003*	1.979	*0.004*	1.954	*0.005*	1.946	*0.008*
Partition and exchange coefficients								
[e]C_{Cl}^{melt} wt%	0.22	*0.02*	0.39	*0.04*	0.15	*0.03*	0.28	*0.02*
$D_{Cl}^{Phen\text{-}melt}$	0.24	*0.04*	0.26	*0.04*	0.29	*0.07*	0.22	*0.05*
[f]C_F^{melt} wt%	0.03	*0.004*	0.02	*0.01*	0.15	*0.01*	0.15	*0.01*
$D_F^{Phen\text{-}melt}$	4.4	*0.7*	1.9	*1.0*	1.2	*0.2*	1.4	*0.2*
$K_{d_{Cl\text{-}OH}}^{Phen\text{-}melt}$	0.27	*0.06*	0.29	*0.06*	0.34	*0.10*	0.26	*0.08*
$K_{d_{F\text{-}OH}}^{Phen\text{-}melt}$	18	*4*	7	*4*	4	*1*	7	*2*
$K_{d_{F\text{-}Cl}}^{Phen\text{-}melt}$	5	*1*	2	*1*	1.5	*0.3*	1.7	*0.4*

Footnotes are the same as those for Table 4.

Table 6 Biotite compositions and resultant partition and exchange coefficients.

Run no.	C3955		C4059		C4058	
Starting Comp.	EPSM-4		EPSM-9		EPSM-10	
		[b]*σ(3)*		*σ(2)*		*σ(2)*
SiO_2	41.96	*0.78*	41.27	*0.01*	42.33	*0.40*
TiO_2	2.64	*0.13*	2.70	*0.20*	2.76	*0.40*
Al_2O_3	17.60	*0.21*	17.44	*0.83*	18.26	*0.36*
FeO	5.40	*0.27*	5.53	*0.09*	5.32	*0.15*
MgO	15.58	*0.45*	15.80	*0.33*	15.09	*0.21*
Na_2O	0.94	*0.27*	0.85	*0.13*	1.32	*0.47*
K_2O	9.19	*0.17*	9.20	*0.40*	9.14	*0.21*
Cl	0.087	*0.015*	0.235	*0.007*	0.135	*0.007*
Total	93.77	*0.91*	93.01	*1.08*	94.33	*0.45*
		σ(6)		*σ(4)*		*σ(3)*
[c]Cl(EMPA)	0.102	*0.011*	0.228	*0.018*	0.146	*0.005*
		σ(5)				
[c]F(EMPA)	0.30	*0.02*	0.48	*0.04*	0.60	*0.03*
Structure formula based on $11O^{2-}$						
Si	3.007	*0.024*	2.981	*0.028*	3.002	*0.039*
Ti	0.142	*0.007*	0.147	*0.009*	0.147	*0.021*
Al	1.486	*0.020*	1.484	*0.056*	1.526	*0.025*
Fe	0.323	*0.018*	0.334	*0.002*	0.315	*0.008*
Mg	1.664	*0.055*	1.702	*0.052*	1.595	*0.017*
Na	0.131	*0.036*	0.118	*0.020*	0.182	*0.065*
K	0.840	*0.017*	0.847	*0.029*	0.826	*0.016*
Tot. Cat.	7.594	*0.009*	7.613	*0.004*	7.593	*0.019*
Cl	0.012	*0.001*	0.028	*0.002*	0.017	*0.001*
F	0.068	*0.004*	0.109	*0.008*	0.135	*0.007*
OH	1.920	*0.004*	1.863	*0.008*	1.848	*0.007*
Partition and exchange coefficients						
[e]C_{Cl}^{melt} wt%	0.11	*0.02*	0.28	*0.02*	0.15	*0.03*
$D_{Cl}^{Bi\text{-}melt}$	0.97	*0.24*	0.81	*0.09*	0.97	*0.20*
[f]C_F^{melt} wt%	0.06	*0.01*	0.15	*0.01*	0.15	*0.01*
$D_F^{Bi\text{-}melt}$	5.0	*0.7*	3.1	*0.3*	4.0	*0.3*
$K_{d\,Cl\text{-}OH}^{Bi\text{-}melt}$	1.23	*0.39*	1.06	*0.22*	1.26	*0.34*
$K_{d\,F\text{-}OH}^{Bi\text{-}melt}$	5	*1*	3.9	*0.6*	4.1	*0.9*
$K_{d\,F\text{-}Cl}^{Bi\text{-}melt}$	6	*2*	4.1	*0.8*	5	*1*

Footnotes are the same as those for Table 4.