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Experimental constraints on the origin of chlorine emissions at the Soufriere Hills volcano, Montserrat

Published online: 13 November 2001
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Bull Volcanol (2001) 62:431–440

In the printed version of the article in Table 1 a row of values for wt% K_2O was inadvertently omitted and some of the reported Na_2O values were actually those for K_2O . The complete, correct table is reproduced below.

The online version of the article can be found at <http://dx.doi.org/10.1007/s004550000106>

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Table 1 Analyses of major and trace elements (wt% $\pm 1\sigma$ on water-free basis with original analytical totals) from Soufrière Hills experiments (exp) and starting material (sm). The experiments at higher pressure (100–250 MPa) were analysed at both 10 and 2 nA (Morgan and London 1996)

Experiment	SHM 1bis	SHM 4	SHM 2bis	SHM 3bis	
T (°C)	890	880	880	870	
P (MPa)	25	50	100	150	
No. analyses	10	21	25	24	
Type	exp	exp	exp	exp	
Beam current (wt% $\pm 1\sigma$)	10 nA	10 nA	10 nA	2 nA	10 nA 2 nA
SiO ₂	77.52 $\pm$ 0.72	77.67 $\pm$ 0.49	74.27 $\pm$ 0.31	74.51 $\pm$ 0.22	73.05 $\pm$ 0.25 73.27 $\pm$ 0.33
TiO ₂	0.36 $\pm$ 0.04	0.31 $\pm$ 0.03	0.25 $\pm$ 0.03	0.31 $\pm$ 0.06	0.23 $\pm$ 0.04 0.26 $\pm$ 0.04
Al ₂ O ₃	11.43 $\pm$ 0.31	11.30 $\pm$ 0.29	13.26 $\pm$ 0.21	13.36 $\pm$ 0.08	14.16 $\pm$ 0.11 14.12 $\pm$ 0.14
FeO _{tot.}	1.81 $\pm$ 0.14	1.89 $\pm$ 0.14	1.79 $\pm$ 0.09	1.84 $\pm$ 0.19	1.91 $\pm$ 0.08 1.98 $\pm$ 0.27
MnO	b.d.l.	b.d.l.	b.d.l.	b.d.l.	b.d.l. b.d.l.
MgO	0.26 $\pm$ 0.18	0.30 $\pm$ 0.13	0.32 $\pm$ 0.05	0.28 $\pm$ 0.03	0.33 $\pm$ 0.03 0.35 $\pm$ 0.06
CaO	1.20 $\pm$ 0.44	1.59 $\pm$ 0.24	2.18 $\pm$ 0.16	2.11 $\pm$ 0.06	2.65 $\pm$ 0.06 2.61 $\pm$ 0.19
Na ₂ O	3.21 $\pm$ 0.07	3.78 $\pm$ 0.29	4.79 $\pm$ 0.17	5.00 $\pm$ 0.19	4.61 $\pm$ 0.12 5.03 $\pm$ 0.17
K ₂ O	3.67 $\pm$ 0.11	2.55 $\pm$ 0.08	2.42 $\pm$ 0.06	2.46 $\pm$ 0.05	2.41 $\pm$ 0.04 2.33 $\pm$ 0.07
Cl	0.50 $\pm$ 0.02	0.59 $\pm$ 0.03	0.68 $\pm$ 0.03	n.d.	0.65 $\pm$ 0.04 n.d.
Total	97.42 $\pm$ 0.43	97.55 $\pm$ 0.51	94.50 $\pm$ 0.31	94.36 $\pm$ 0.23	92.70 $\pm$ 0.32 92.70 $\pm$ 0.55
Run (h)	336	288	240		192
Capsule	Au	Au	Au		Au
[1] Mass sm	37.25	39.34	32.27		30.71
[2] Mass fluid	2.02	3.33	6.01		7.18
[3] (mCl) _i	5	5	5		5
[4] (mCl) _r	2.94 $\ddagger$	4.20 $\ddagger$	5.20 $\ddagger$		5.68 $\ddagger$
[5] (fl/p) _i	0.06	0.09	0.19		0.23
[6] (fl/m) _r	0.03	0.05	0.13		0.17
[7]	n.a.*	n.a.*	n.a.*		n.a.*
[8] Crystals	<i>P, C, O, Q</i>	<i>P, C, O, Q</i>	<i>C, P</i>		<i>C, P</i>
[9] A.I.	0.81	0.80	0.79	0.82	0.72 0.76
[10] A/CNK	1.00	0.95	0.92	0.90	0.94 0.91
[11] N	11.51	11.67	9.51	9.47	8.76 8.80

Experiment	SHM 5bis	SHM 6	Mon6aX	
T (°C)	870	860		
P (MPa)	200	250		
No. analyses	29	31		
Type	exp	exp		sm
Beam current (wt% $\pm 1\sigma$)	10 nA	10 nA	2 nA	
SiO ₂	72.88 $\pm$ 0.29	73.17 $\pm$ 0.39	73.45 $\pm$ 0.32	71.41
TiO ₂	0.24 $\pm$ 0.03	0.24 $\pm$ 0.03	0.26 $\pm$ 0.06	0.26
Al ₂ O ₃	14.19 $\pm$ 0.11	14.50 $\pm$ 0.11	14.46 $\pm$ 0.17	13.58
FeO _{tot.}	1.94 $\pm$ 0.11	1.59 $\pm$ 0.17	1.59 $\pm$ 0.16	2.78
MnO	b.d.l.	b.d.l.	b.d.l.	0.13
MgO	0.41 $\pm$ 0.14	0.38 $\pm$ 0.02	0.38 $\pm$ 0.04	1.64
CaO	2.88 $\pm$ 0.22	2.87 $\pm$ 0.05	2.80 $\pm$ 0.08	4.86
Na ₂ O	4.75 $\pm$ 0.12	4.34 $\pm$ 0.13	4.71 $\pm$ 0.18	3.73
K ₂ O	2.22 $\pm$ 0.04	2.38 $\pm$ 0.04	2.28 $\pm$ 0.09	1.6
Cl	0.48 $\pm$ 0.02	n.d.	n.d.	0.0
Total	92.88 $\pm$ 0.35	89.96 $\pm$ 0.50	91.21 $\pm$ 0.36	99.99
Run (h)	168	168		—
Capsule	Au	Au		—
[1] mass sm	30.01	27.56		
[2] mass fluid	6.43	7		
[3] (mCl) _i	5	5		—
[4] (mCl) _r	6.73	6.76		—
[5] (fl/p) _i	0.21	0.25		—
[6] (fl/m) _r	0.14	0.17		—
[7] D _{Cl} ^{fl/m}	53	52		—
[8] Crystals	<i>C</i>	<i>C</i>		—
[9] A.I.	0.72	0.67	0.71	0.58
[10] A/CNK	0.92	0.97	0.94	0.81
[11] N	8.72	8.57	8.64	8.92

[1] mass (mg) of starting material powder; [2] mass (mg) of starting material fluid; [3] initial chlorine molality in the aqueous fluid phase; [4] chlorine molality in the aqueous phase during the run; $\ddagger$ apparent Cl molality (see text); [5] initial fluid/powder ratio by weight; [6] fluid/melt ratio during the run by weight; [7] fluid/melt distribution coefficient; n.a.*, not

applicable because values are meaningless for subcritical fluids – see text; [8] mineralogical assemblage after the run: *Q*, quartz; *C*, clinopyroxene; *O*, Fe-Ti oxides; *P*, plagioclase; [9] Na+K/Al molar ratio; [10] Al/Ca+Na+K molar ratio; [11] Si/Al molar ratio. n.d., not determined. b.d.l., below the detection limit