



Supplement of

Crystal chemistry and molar volume of potassic-chloro-hastingsite

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Table S1. Regression statistics and coefficients obtained by multiple regression of the composition vs unit-cell parameters for the amphiboles synthesized in this study.

Parameter	<i>a</i>		<i>b</i>		<i>c</i>		β	
Multiple R	0.990		0.994		0.964		0.989	
R ²	0.981		0.987		0.929		0.978	
Adjusted R ²	0.976		0.984		0.910		0.974	
Standard Error	0.0097		0.0088		0.0040		0.0556	
<i>n</i>	25		25		25		25	

	ψ_i^a (Å)	P-value (<i>a</i>)	ψ_i^b (Å)	P-value (<i>b</i>)	ψ_i^c (Å)	P-value (<i>c</i>)	ψ_i^β (°)	P-value (β)
Intercept	9.5539 (698)	6.4 x 10 ⁻³⁰	17.8516 (584)	1.5 x 10 ⁻³⁶	5.2817 (108)	2.1 x 10 ⁻⁴⁰	103.7621 (3751)	2.6 x 10 ⁻³⁷
^T Al	-0.0268 (90)	7.5 x 10 ⁻³	-0.0651 (80)	1.4 x 10 ⁻⁷	0.0206 (42)	9.4 x 10 ⁻⁵	-	-
^C Fe _{Total}	0.0348 (52)	2.3 x 10 ⁻⁶	0.0465 (51)	2.2 x 10 ⁻⁸	0.0109 (21)	4.0 x 10 ⁻⁵	-0.0843 (299)	1.1 x 10 ⁻²
^B Ca	0.1275 (423)	7.2 x 10 ⁻³	0.1422 (364)	9.5 x 10 ⁻⁴	-	-	0.7375 (2413)	6.2 x 10 ⁻³
^A Na	-	-	0.0273 (86)	5.2 x 10 ⁻³	0.0250 (81)	5.8 x 10 ⁻³	-	-
^A K	0.1681 (100)	7.3 x 10 ⁻¹³	-	-	-0.0285 (80)	2.1 x 10 ⁻³	0.7623 (563)	1.6 x 10 ⁻¹¹
Cl	-0.0299 (51)	1.3 x 10 ⁻⁵	0.0903 (45)	3.1 x 10 ⁻¹⁴	0.0240 (23)	3.6 x 10 ⁻⁹	-0.3790 (294)	3.7 x 10 ⁻¹¹

Table S2. List of amphiboles used in the multivariate regression that are not from this study.

Amphibole Species	Sample ID	a (Å)	b (Å)	c (Å)	β (Å)	Study
MHst	A3-11T	9.926	18.029	5.297	105.460	Semet (1973)
	A4-11C	9.928	18.015	5.282	105.430	
FTs	-	9.818	18.106	5.331	105.000	Hawthorne & Grundy (1973a)
Krs	-	9.892	18.064	5.312	105.388	Hawthorne & Grundy (1973b)
Hst	-	9.866	18.014	5.355	105.082	Hawthorne & Grundy (1977)
KcHst	-	9.962	18.287	5.360	104.920	Dick & Robinson (1979)
Hbl	-	9.832	18.037	5.302	105.010	Hawthorne et al. (1980)
KcHst	-	9.957	18.294	5.377	104.900	Suwa et al. (1987)
KCFPrg	AN-4	9.922	18.219	5.360	104.810	Castelli (1988)
KcFPrg	AN-2	9.884	18.143	5.332	104.860	
KcHst	-	9.962	18.283	5.372	104.870	Makino et al. (1993)
KHst	Cl0	9.895	18.119	5.332	105.170	Oberti et al. (1993)
cFPrg	Cl1	9.884	18.143	5.332	104.860	
KCHst	Cl2	9.922	18.219	5.360	104.810	
ζ Prg	FP(1)	9.820	17.896	5.294	105.300	Oberti et al. (1995)
	FP(2)	9.808	17.868	5.297	105.300	
Cnl	-	9.826	17.906	5.301	105.410	Hawthorne et al. (1996)
Prg	Parg 11-7	9.893	17.944	5.280	105.505	Sharma & Jenkins (1999)
	Parg 19-11	9.902	17.975	5.275	105.384	
	Parg 19-12	9.888	17.976	5.276	105.320	
	Parg 13-43	9.901	17.972	5.276	105.393	
	Parg 13-44	9.896	17.972	5.278	105.389	
	Parg 20-2	9.847	17.990	5.279	105.099	
Tr	Parg 17-4	9.828	18.024	5.279	104.867	Sokolova et al. (2000)
	Parg 18-3	9.816	18.040	5.278	104.741	
	Trem 23-13	9.809	18.054	5.276	104.570	
KfSdg	-	9.931	18.095	5.368	105.190	Sokolova et al. (2000)
MSdg	GSJM35151-1	9.869	17.933	5.322	105.290	Banno et al. (2004)
	GSJM35151-2	9.906	17.971	5.319	105.480	

Table S2. (continued)

Amphibole Species	Sample ID	<i>a</i> (Å)	<i>b</i> (Å)	<i>c</i> (Å)	β (Å)	Study
KMHst	77010721-3	10.007	18.107	5.368	105.660	Shirashi et al. (1994)
	77010721-1	9.941	18.110	5.337	105.250	
	80D10-3	10.002	18.112	5.356	105.540	
KfSdn	FS	9.926	18.092	5.371	105.190	Hawthorne & Harlow (2008)
KFPrg	GSJ M38953	9.925	18.102	5.339	105.242	Banno et al. (2009)
Tr	TREM 23-13	9.803	18.042	5.274	104.571	Jenkins et al. (2013)
	TREM 26-2	9.815	18.045	5.275	104.620	
	WIN 7-1	9.816	18.039	5.276	104.585	
	WIN 8-1	9.816	18.031	5.275	104.612	
	Win9-1	9.808	18.000	5.280	104.575	
	WIN 10-1	9.789	17.980	5.275	104.487	
	Win4-2	9.774	17.964	5.266	104.423	
	WIN 1-1	9.763	17.930	5.277	104.380	
Gln	WIN 11-1	9.747	17.920	5.277	104.268	
	WIN 12-2	9.692	17.857	5.279	104.056	
	WIN 2-2	9.657	17.800	5.285	103.942	
	WIN 13-3	9.579	17.715	5.284	103.766	
Prg	-	9.882	17.973	5.282	105.200	Heaveysege et al. (2015)
ζMfHbl	-	9.839	18.078	5.319	104.990	Oberti et al. (2016a)
FfHbl	1258	9.941	18.222	5.332	104.946	Oberti et al. (2016b)
Prg	Hast-5-0-2c	9.844	17.993	5.286	105.083	Mueller et al. (2017)
MHbl	Hast-5-20	9.819	18.032	5.297	104.878	
Prg	Hast-5-40-2b	9.823	18.087	5.313	104.699	
	Hast-5-50	9.794	18.059	5.319	104.628	
FfHbl	Hast-5-60-2	9.840	18.152	5.328	104.651	
FHbl	Hast-5-80	9.841	18.182	5.337	104.511	
FfHbl	Hast-5-100-2	9.864	18.200	5.336	104.756	
Hst	Hast-3-7	9.973	18.177	5.324	105.261	
Prg	Hast-6-1	9.865	17.999	5.288	105.172	
Rct	Am4	9.845	17.940	5.294	105.221	Day et al. (2018)
Prg	Am5	9.885	17.978	5.283	105.193	
MHbl	-	9.831	18.066	5.297	104.771	Oberti et al. (2018a)

Note: Prefixes: C = chloro (Cl > OH,F), c = Cl-rich (OH,F > Cl > 0.5 apfu), F = ferro, f = ferri, ζ = fluoro, M = magnesio, K = potassic.

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