

Table 1S. Experimental run conditions, materials added to starting charges, and phases present at run conditions.

Run I.D.	T ^a (°C)	P (MPa)	Duration (hrs)	Starting silicates ^b	Added salts and solutions ^c	Stable phases at end of run ^d	Notes
1-12-05A	1000	101	286	LPA-1 + apat	NaCl:KCl + H ₃ PO ₄ solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, pyr	
1-12-05B	1000	101	286	LPA-1 + apat	NaCl:KCl + H ₃ PO ₄ solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, FeOx	
CS-14-18A	850	49	1008	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq	
CS-14-18B	850	49	1008	LPA-1 + apat	NaCl:KCl + HCl solution + CaHPO ₄ + Ca(OH) ₂ +	glass, apat, salts, aqliq	
CS-14-18C	850	49	1008	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, apat, salts, aqliq	
CS-14-18D	850	49	1008	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq	
CS-15-01B ^a	702	49.5	767	LPA-1 + apat	NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, apat, salts, aqliq, plag, qtz, FeOx	Trace glass
CS-15-02 ^a	843	49.5	575	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, cpx	
CS-15-03 ^a	844	49	844	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq	
CS-15-04A ^a	844	49.5	579	LPA-1 + apat	NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, cpx, FeOx	
CS-15-04B ^a	844	49.5	579	LPA-1 + apat	NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, FeOx	
CS-15-04C ^a	844	49.5	579	LPA-1 + apat	NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, apat, salts, aqliq, FeOx	
CS-15-05A ^a	862	51	858	LPA-1 + apat	HCl:NaCl:KCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, qtz, FeOx	
CS-15-05B ^a	862	51	858	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, qtz	
CS-15-05C ^a	862	51	858	LPA-1 + apat	NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq	
CS-15-05D ^a	862	51	858	LPA-1 + apat	HCl:NaCl:KCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, qtz	
CS-15-06 ^a	850	49.5	679	LPA-1 + apat	NaCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, FeOx	
CS-15-07 ^a	844	49.5	795	LPA-1 + apat	NaCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, apat, salts, aqliq, FeOx	
CS-15-09A ^{a,c}	850	49	670	LPA-1 + apat	CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, CaSi	Slow, non-isobaric quench
CS-15-09B ^{a,c}	850	49	670	LPA-1 + apat	CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, CaSi	Slow, non-isobaric quench
CS-15-16A ^a	853	50	936	LPA-2 + apat	CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, FeOx, CaSi	
1-15-14A ^a	995	50	792	LPA-2 + apat	NaCl + NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, FeOx	
1-15-14B ^a	995	50	792	LPA-2 + apat	HCl:NaCl:KCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, FeOx	
CS-15-18 ^a	722	49	1149	LPA-2 + apat	NaCl:KCl + HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, apat, salts, aqliq, FeOx	
1-15-10A ^a	775	203	478	LPA-2 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, cpx	
1-15-10B ^a	775	203	478	LPA-2 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq, cpx	
1-15-13A ^a	748	202	603	LPA-2 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq	
1-15-13B ^a	748	202	603	LPA-2 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, apat, salts, aqliq	
CS-14-17B ^f	868	51	165	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, salts, aqliq, plag, μm-sized apat	No analyzable apatite
CS-14-17C ^f	868	51	165	LPA-1 + apat	HCl:NaCl:KCl solution + HCl solution + CaHPO ₄ + Ca(OH) ₂ + DD H ₂ O	glass, salts, aqliq, cpx, μm-sized apat	No analyzable apatite
CS-14-17D ^f	868	51	165	LPA-1 + apat	NaCl:KCl + HCl solution + CaHPO ₄ + Ca(OH) ₂	glass, salts, aqliq, plag, μm-sized apat	No analyzable apatite
1-95-9E	930	50	624	TM-61a	NaCl:KCl + DD H ₂ O	glass, salts, aqliq, μm-sized apat	No analyzable apatite
1-95-9F	930	50	624	TM-61a	NaCl:KCl + DD H ₂ O	glass, salts, aqliq, μm-sized apat	No analyzable apatite
1-95-9B	930	50	624	TM-61a	NaCl:KCl	glass, salts, aqliq, μm-sized apat	No analyzable apatite
1-95-9D	930	50	624	TM-61a	NaCl:KCl + DD H ₂ O	glass, salts, aqliq, μm-sized apat	No analyzable apatite
1-95-9C	930	50	624	TM-61a	NaCl:KCl + DD H ₂ O	glass, salts, aqliq, μm-sized apat	No analyzable apatite
1-95-10F	901	49	288	TM-61a	NaCl:KCl + DD H ₂ O	glass, salts, aqliq, μm-sized apat	No analyzable apatite

Runs with “CS-” prefix were conducted in cold seal pressure vessels and runs with “1-” prefix in internally heated pressure vessel.

^aTemperature held constant at run temperature for initial 72 hours, cycled ± 10-15°C daily afterward, and temperature held constant at run temperature for final 48-72 hours.

^bStarting silicate glass or glass-apatite mixtures used (see Table 1 for compositions).

^cLPA-1 mix, LPA-2 mix, apat = 1-3 μm-diameter Durango apatite seeds, DD H₂O = distilled and deionized H₂O. All solutions involved distilled and deionized H₂O.

^dPhases in run product at conclusion of experiment: apat = apatite, plag = plagioclase, FeOx = iron (± titanium) oxides, cpx = clinopyroxene, CaSi – high-Ca aluminosilicate phase, salts = residual soluble salts, and aqliq = aqueous liquid.

^eRun experienced slow, non-isobaric (uncontrolled) quench.

^fPremature, slow, non isobaric quench and apatite too small to analyze