

Table S2. Solubility data of Ülgase.

Experiment nr.	HCl (M)	Sample mass (g)	HCl/Ca (mole ratio)	Solubility (%)			
	X1	X2		P	F	Fe	REE
				Y1	Y2	Y3	Y4
RU3	0.49	20.0046	2.51	99.67	100	60.59	100
RU2b	0.49	25.0043	2.01	86.96	93.19	52.90	89.23
RU2	0.49	25.0046	2.01	87.83	94.27	52.23	91.09
RU5	0.518	34.0018	1.56	71.80	70.71	48.29	49.79
RU4	0.49	50.0015	1.01	52.50	44.59	37.56	1.31
RU7	1.01	36.0026	2.88	100	100	74.50	100
RU6	1.01	51.0041	2.03	93.250	91.4	57.51	8.90
RU8	1.01	67.0014	1.55	82.06	44.44	44.91	0.62
RU9	1.5	52.0049	2.96	100	100	74.49	100
RU11	1.5	76.0076	2.02	99.66	46.62	54.83	5.66
RU10	1.5	100.0029	1.54	85.65	26.15	45.88	5.55