

**Table S1.** Atom coordinates (x,y,z), equivalent isotropic displacement parameters ( $U_{\text{iso}}$ , Å<sup>2</sup>) and occupancies for rusinovite from Shadil-Khokh volcano, South Ossetia.

Atom	<i>x</i>	<i>y</i>	<i>z</i>	$U_{\text{eq}}$	Occupancy
Ca1	0	0.43100(3)	0.75	0.01315(11)	1
Ca2	0.5	0.218412(19)	0.608452(18)	0.01639(10)	1
Ca3	0	0.03273(2)	0.59702(2)	0.02072(11)	1
Si1	0.43236(12)	−0.11787(3)	0.55026(3)	0.00992(17)	0.5
Si2	0.92883(18)	0.11161(5)	0.75	0.0117(2)	0.5
O1	0.4512(10)	−0.05644(9)	0.61762(8)	0.0156(8)	0.5
O2	0.5	0.1190(3)	0.7326(3)	0.0254(15)	0.25
O3	0	0.09507(13)	0.45996(13)	0.0150(5)	0.5
O4	0.4266(4)	0.09578(9)	0.53517(9)	0.0181(5)	0.5
O5	0	0.29063(7)	0.56856(7)	0.0180(3)	1
O6	0.9521(18)	0.14824(10)	0.66946(10)	0.0277(13)	0.5
O7	0	0.1643(9)	0.75	0.0181(4)	1
Cl1	0.5	0.31223(3)	0.75	0.01828(14)	1