

TABLE 2. Composition of solid inclusions within corundum from Snezhnoe by electron microprobe analysis.^{a,b,c}

Oxides (wt.%)	Allanite (n=6) ^a	Thorianite (n=3)	REE carbonate (n=1)	Zircon (n=2)	Rutile (n=2)	Fuchsite (n=1)
H ₂ O (calculated)	1.47	–	13.55	–	–	–
CO ₂ (calculated)	–	–	24.83	–	–	–
Na ₂ O	–	–	–	–	–	3.88
MgO	0.56–1.29 (0.87) ^b	0.12	–	–	–	1.01
Al ₂ O ₃	20.45–23.81 (33.07)	0.17	1.06	–	–	35.51
SiO ₂	32.42–34.58 (33.07)	0.27	1.5	30.13–31.50 (30.82)	–	45.28
K ₂ O	–	–	–	–	–	6.04
CaO	12.19–15.13 (12.82)	0.15	0.73	–	–	0.82
TiO ₂	bdl–0.5 (0.23)	–	–	–	98.33–98.94 (98.64)	–
MnO	bdl–0.39 (0.16)	–	–	–	–	–
Cr ₂ O ₃	–	–	–	–	0.49–0.81 (0.65)	0.93
FeO	–	–	0.21	–	–	–
Fe ₂ O ₃	5.32–9.2 (8.0)	–	–	–	–	–
ZrO ₂	–	–	–	63.98–66.46 (65.22)	–	–
Y ₂ O ₃	bdl–0.39 (0.24)	–	0.48	–	–	–
La ₂ O ₃	3.7–6.14 (4.84)	–	11.36	–	–	–
Hf ₂ O	–	–	–	bdl–2.06 (1.03)	–	–
Ce ₂ O ₃	7.93–11.08 (9.99)	0.21	29.32	–	–	–
Pr ₂ O ₃	0.34–1.31 (0.86)	–	3.2	–	–	–
Nd ₂ O ₃	3.03–4.19 (3.55)	–	12.45	–	–	–
Sm ₂ O ₃	0.19–0.85 (0.48)	–	1.15	–	–	–
Gd ₂ O ₃	0.19–0.82 (0.48)	0.30	1.15	–	–	–
ThO ₂	0.55–1.0 (0.81)	80.36	0.86	–	–	–
UO ₂	bdl–0.15 (0.03)	17.52	–	–	–	–
Total	99.32–100.34 (99.57)	99.1	102.37	94.12–100.0 (97.06)	98.95–99.75 (99.35)	93.86

^an = number of measurements.^bMinimum and maximum values are given, along with average (in parentheses); bdl = below detection limit.^cThorianite and REE carbonate are within the allanite crystal.