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**Supplementary Table OM1** - Potential isobaric interferences in TOF-SIMS analyses on silica minerals from the predominant isotopes present.

Nominal mass	Isotope	Interference
43	$^{43}\text{Ca}$	$^{27}\text{Al}^{16}\text{O}$
44	$^{44}\text{Ca}$	$^{28}\text{Si}^{16}\text{O}$
45	$^{45}\text{Sc}$	$^{29}\text{Si}^{16}\text{O}$ or $^{28}\text{Si}^{16}\text{O}^1\text{H}$
46	$^{46}\text{Ti}$ , $^{46}\text{Ca}$	$^{30}\text{Si}^{16}\text{O}$
56	$^{56}\text{Fe}$	$^{28}\text{Si}_2$ or $^{40}\text{Ca}^{16}\text{O}$
58	$^{58}\text{Ni}$ , $^{58}\text{Fe}$	$^{29}\text{Si}_2$
60	$^{60}\text{Ni}$	$^{30}\text{Si}_2$
59	$^{59}\text{Co}$	$^{27}\text{Al}^{16}\text{O}_2$
60	$^{60}\text{Ni}$	$^{28}\text{Si}^{16}\text{O}_2$
61	$^{61}\text{Ni}$	$^{29}\text{Si}^{16}\text{O}_2$
62	$^{62}\text{Ni}$	$^{30}\text{Si}^{16}\text{O}_2$
69	$^{69}\text{Ga}$	$^{69}\text{Ga}^{\text{a}}$
97	$^{97}\text{Mo}$	$^{28}\text{Si}^{69}\text{Ga}$
98	$^{98}\text{Mo}$ , $^{98}\text{Ru}$	$^{29}\text{Si}^{69}\text{Ga}$
99	$^{99}\text{Ru}$	$^{30}\text{Si}^{69}\text{Ga}$
113	$^{113}\text{Cd}$ , $^{113}\text{In}$	$^{28}\text{Si}^{16}\text{O}^{69}\text{Ga}$
114	$^{114}\text{Cd}$ , $^{114}\text{Sn}$	$^{29}\text{Si}^{16}\text{O}^{69}\text{Ga}$
115	$^{115}\text{In}$	$^{30}\text{Si}^{16}\text{O}^{69}\text{Ga}$
129	$^{129}\text{Xe}$	$^{28}\text{Si}^{16}\text{O}_2^{69}\text{Ga}$
130	$^{130}\text{Te}$ , $^{130}\text{Ba}$ , $^{130}\text{Xe}$	$^{29}\text{Si}^{16}\text{O}_2^{69}\text{Ga}$
131	$^{130}\text{Xe}$	$^{30}\text{Si}^{16}\text{O}_2^{69}\text{Ga}$
138	$^{138}\text{Ba}$	$^{69}\text{Ga}_2$
197	$^{197}\text{Au}$	$^{197}\text{Au}^{\text{b}}$
207	$^{207}\text{Pb}$	$^{69}\text{Ga}_3$

<sup>a</sup> Signal from primary ion beam

<sup>b</sup> Signal from gold coating