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Radiation damage in diopside and calcite crystals from uranothorianite inclusions.

Anne-Magali Seydoux-Guillaume, Jean-Marc Montel, Richard Wirth, Bernard Moine

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Table 1. Compositions (in wt%) of uranothorianite (UTh), diopside (Cpx), calcite (Cc) and sheet silicate (φ) from figure 2A obtained by EMP.

# (Fig. 2A)	Uranothorianite (UTh)					Sheet silicate (φ)				Diopside (Cpx)				Calcite (Cc)
	1	2	12	13	14	3	4	5	6	7	8	9	10	11
Na ₂ O	0.00	0.00	0.08	0.00	0.00	0.07	0.00	0.00	0.00	0.12	0.22	0.21	0.29	0.00
MgO	0.00	0.00	0.00	0.01	0.00	10.56	14.02	15.50	13.75	13.79	13.72	14.05	13.99	0.66
Al ₂ O ₃	0.00	0.00	0.00	0.00	0.00	19.05	18.42	18.75	19.06	8.22	8.19	8.38	8.35	0.00
SiO ₂	0.00	0.39	0.00	0.01	0.00	43.58	39.52	33.68	43.81	48.73	48.70	49.27	48.67	0.04
K ₂ O	0.10	0.03	0.05	0.04	0.11	0.21	0.10	0.03	0.20	0.00	0.02	0.00	0.00	0.00
CaO	0.19	0.25	0.16	0.11	0.16	2.26	1.87	1.94	2.34	25.03	25.38	25.00	25.07	55.95
TiO ₂	0.00	0.00	0.00	0.00	0.00	0.25	0.18	0.09	0.24	0.74	0.72	0.83	0.68	0.00
Cr ₂ O ₃	0.04	0.00	0.07	0.00	0.01	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.02	0.02
MnO	0.00	0.07	0.07	0.05	0.02	0.13	0.01	0.23	0.10	0.11	0.05	0.00	0.04	0.02
FeO	0.12	0.00	0.00	0.01	0.01	6.28	7.55	14.45	7.25	2.36	2.26	2.23	2.50	0.19
PbO	3.77	3.74	4.10	4.33	3.92	0.06	0.17	0.14	0.00	0.25	0.00	0.00	0.05	0.18
ThO ₂	66.37	64.80	66.33	66.12	66.99	0.04	0.68	0.10	0.00	0.03	0.00	0.06	0.08	0.00
UO ₂	29.24	28.50	30.27	29.76	28.92	0.10	0.00	0.00	0.00	0.00	0.06	0.00	0.01	0.00
Total	99.83	97.78	101.14	100.44	100.15	82.57	82.56	84.93	86.75	99.38	99.31	100.03	99.75	57.06

EMP operating at 15 kV, 20 nA. Standards are : albite (NaK α), periclase (MgK α), corundum (AlK α), wollastonite (Si and CaK α), sanidine (KK α), perovskite (Ti and MnK α), Cr₂O₃ (CrK α), Hematite (FeK α), synthetic Pb-glass (PbM β), synthetic ThO₂-ceramic (ThM α) and synthetic UO₂-ceramic (UM β).