

The REE-Zr-U-Th minerals of the Maronia monzodiorites, N. Greece: Implications on the saturation and segregation mechanisms of critical metals in intermediate-mafic compositions

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Table S1. EDS analyses and stoichiometric formula of the Maronia zirconolites.

Sample	MAR-1						
SiO ₂	0.69	n.d.	n.d.	n.d.	n.d.	n.d.	2.07
TiO ₂	37.96	37.14	34.87	34.35	31.61	31.52	28.50
Al ₂ O ₃	0.65	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
FeO	10.16	14.56	14.35	11.06	12.49	12.08	10.71
CaO	11.09	8.56	5.99	7.41	4.83	4.18	4.99
Ce ₂ O ₃	n.d.	n.d.	n.d.	4.70	n.d.	n.d.	n.d.
Nd ₂ O ₃	n.d.	n.d.	n.d.	2.90	4.45	3.28	3.05
Y ₂ O ₃	n.d.	n.d.	12.34	n.d.	n.d.	11.31	n.d.
Nb ₂ O ₅	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
ZrO ₂	32.23	31.52	32.45	23.43	23.44	29.29	21.10
ThO ₂	5.32	8.22	n.d.	2.38	6.26	n.d.	12.33
UO ₂	n.d.	n.d.	n.d.	13.77	14.28	8.35	17.16
Total	100.00	100.00	100.00	100.00	100.00	100.01	99.91
Structural formula based on 7 oxygens (a.p.f.u.)							
<u>M1-site</u>							
Ca	0.725	0.575	0.400	0.539	0.366	0.298	0.387
Na	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Zr	0.200	0.310	0.190	0.030	0.200	0.100	0.060
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
REE	0.000	0.000	0.409	0.187	0.113	0.479	0.079
Th	0.074	0.117	0.000	0.037	0.101	0.000	0.203
U	0.000	0.000	0.000	0.208	0.225	0.124	0.276
Total	0.999	1.002	0.999	1.001	1.005	1.001	1.005
<u>M2-site</u>							
Zr	0.759	0.653	0.796	0.746	0.609	0.852	0.684
Ti	0.241	0.347	0.204	0.254	0.391	0.148	0.316
Ca							
Total	1.000	1.000	1.000	1.000	1.000	1.000	1.000
<u>M3-site</u>							
Ti	1.500	1.404	1.430	1.501	1.293	1.431	1.235
Zr							
Fe	0.500	0.596	0.570	0.499	0.707	0.569	0.765
Total	2.000	2.000	2.000	2.000	2.000	2.000	2.000
<u>M4-site</u>							
Fe	0.018	0.167	0.177	0.129	0.033	0.104	0.000
Ti	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.018	0.167	0.177	0.129	0.033	0.104	0.000
Total cations	4.017	4.169	4.176	4.131	4.037	4.106	4.005

(a)

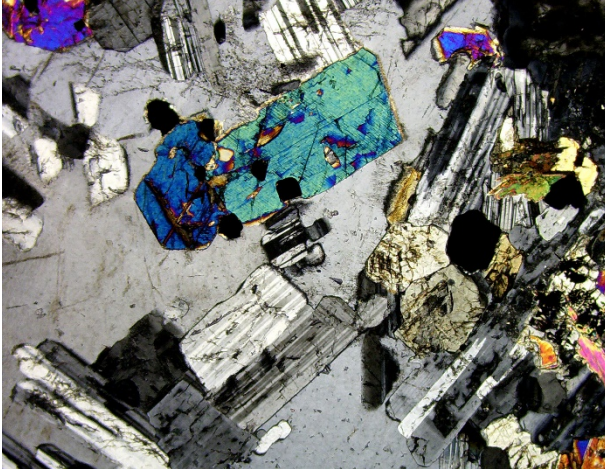


(b)



Figure S1. Hand specimens' photographs of Maronia monzodiorite samples (a,b).

(a)



(b)



(c)



(d)

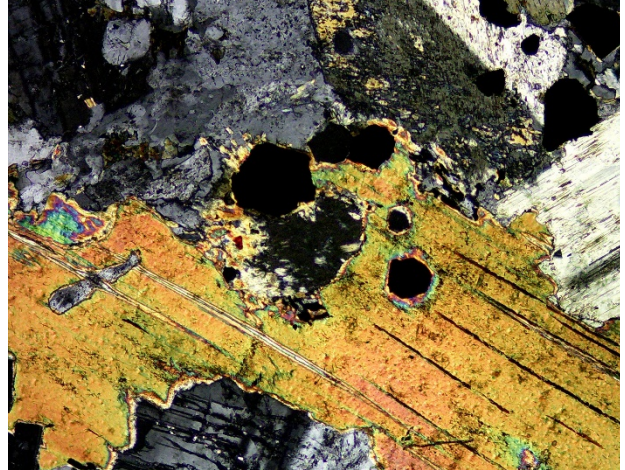


Figure S2. Representative microphotographs of the studied Maronia samples from petrographic microscope under crossed polarizers.