

Table 1. Major element (% weight) data analysis of the Azegour granitic samples and of neighbouring granitoids in the MHA.

Geochemical data of the Tichka granitoids, taken from Gasquet et al. (1992), are plotted for comparison.

	Azegour granite				Ad. granite		Md granite		Bz granite	Tichka granitoids					
	AZ-1	AZ-2	AZ-3	AZ-4	Ad1	Ad3	Md1	Md2	GB1	Gab.	Di	Gd-Tn.	Mzgr.	Lecgr.	
Major elements (%)															
SiO ₂	77.95	77.53	78.14	77.70	69.46	70.98	66.51	65.37	61.62	48.02	57.20	62.94	59.42	71.50	76.92
TiO ₂	0.13	0.13	0.11	0.07	0.39	0.32	0.52	0.54	0.94	1.89	1.14	0.90	1.19	0.36	0.01
Al ₂ O ₃	12.33	12.33	12.12	12.01	15.73	14.81	16.43	16.81	16.13	17.50	19.02	16.85	17.59	14.63	12.98
Fe ₂ O _{3t}	0.80	0.87	0.81	0.90	2.87	2.25	3.27	4.17	6.00	9.12	5.54	4.78	5.57	2.34	0.21
MnO	0.01	0.01	0.01	0.00	0.06	0.03	0.05	0.07	0.09	0.15	0.10	0.08	0.09	0.04	0.00
MgO	0.13	0.12	0.10	0.04	0.98	0.74	1.80	2.38	2.44	6.58	3.27	1.88	2.66	0.94	0.16
CaO	0.42	0.47	0.41	0.39	1.52	1.10	1.89	2.36	4.72	9.90	5.68	3.95	4.96	1.95	0.43
Na ₂ O	3.52	3.56	3.65	3.51	3.56	4.02	5.00	4.41	3.83	3.70	5.20	4.88	4.83	4.02	3.96
K ₂ O	5.04	4.70	4.63	4.96	3.59	3.21	1.91	1.81	2.49	0.79	1.48	2.49	1.86	3.79	4.41
P ₂ O ₅	0.03	0.04	0.04	0.02	0.15	0.17	0.14	0.17	0.55	0.29	0.20	0.31	0.30	0.13	0.03
LOI	0.37	0.37	0.25	0.26	1.11	1.67	1.71	2.09	1.88	0.94	1.33	0.53	0.88	0.53	0.44
Total	100.73	100.13	100.27	99.87	99.42	99.29	99.22	100.2	100.70	98.98	100.14	99.59	99.36	100.23	99.55
A/CNK	1.03	1.05	1.03	1.01	1.26	1.23	1.20	1.24	0.92	0.70	0.93	0.94	0.93	1.03	1.08
Na ₂ O+K ₂ O	8.56	8.26	8.28	8.47	7.15	7.23	6.91	6.22	6.32	4.49	6.68	7.37	6.69	7.81	8.37

L.O.I – Loss On Ignition. A/CNK = Al₂O₃/(Na₂O+K₂O+CaO) and Na₂O+K₂O are molar ratios. Abbreviations: Ad.: Adassil granite, Md.: Medinat granite, Bz.: Bouzouga granite; Tichka granitoids (Gasquet et al., 1992): Gab.: Gabbro, Di.: Diorite, Gd.-Tn.: Granodiorite-Tonalite, Mzg.: Monzogranite and Lecgr.: leucogranite.

Table 1. Continued. Trace and rare earth element (ppm) concentrations of the Azegour granitic samples. Geochemical data available from granitoids in the northern part of the MHA (Adassil, Medinat and Bouzouga granites) are used for comparative purposes.

	Azegour granite				Ad. granite		Md. granite		Bz. granite
	AZ-1	AZ-2	AZ-3	AZ-4	Ad1	Ad3	Md1	Md2	GB1
Trace elements (ppm)									
Sc	-	-	-	-	-	-	7	8	11
Be	-	-	-	-	-	-	1	2	2
V	< 5	< 5	6	10	33	25	70	74	94
Cr	< 20	< 20	< 20	20	30	30	< 20	30	50
Co	< 1	< 1	1	< 1	8	4	7	9	11
Ni	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
Cu	< 10	< 10	< 10	< 10	30	10	30	20	40
Zn	< 30	< 30	< 30	< 30	90	< 30	50	70	60
Ga	23	23	24	23	23	21	19	21	23
Ge	1.9	1.9	2	2	1.5	1.6	1	1	1.3
As	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Rb	209	215	229	204	126	94	26	29	83
Sr	46	36	24	12	272	157	443	469	601
Rb/Sr	4.54	5.97	9.54	17.00	0.46	0.60	0.06	0.06	0.14
Y	14.00	13.50	9.80	6.50	20.60	19.30	11.70	11.90	33.00
Zr	88.00	105.00	46.00	31.00	184.00	148.00	134.00	142.00	389.00
Nb	26.2	24	27.8	20	11.2	10	3	2.8	13.3
Mo	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	4
Ag	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
In	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sn	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	4
Sb	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	2.8	1.4	< 0.2
Cs	1.2	2.1	0.9	1.9	2.5	0.9	0.5	0.6	5.5
Ba	235	167	107	113	1129	820	854	732	835
La	38.2	36	30.4	7.06	34.7	44.2	13.5	14.4	55.4

Ce	70.2	58.9	49.3	12.3	65.9	79.4	28.3	30.2	110
Pr	4.98	4.88	4.05	1.19	7.51	8.89	3.57	3.9	12.9
Nd	13.4	12.6	9.91	3.38	26.7	31	13.6	15.3	47.3
Sm	2.07	1.84	1.4	0.56	5.35	5.62	2.65	2.99	8.44
Eu	0.30	0.25	0.17	0.14	1.05	1.22	0.91	0.94	2.1
Gd	1.34	1.32	0.92	0.58	4.64	4.41	2.64	2.64	7.17
Tb	0.28	0.24	0.17	0.12	0.68	0.65	0.39	0.4	1.11
Dy	1.73	1.54	1.1	0.82	3.43	3.35	2.08	2.19	6
Ho	0.39	0.36	0.27	0.18	0.61	0.6	0.4	0.42	1.11
Er	1.4	1.36	1	0.64	1.67	1.6	1.19	1.23	3.28
Tm	0.29	0.30	0.22	0.13	0.25	0.24	0.18	0.19	0.48
Yb	2.22	2.39	1.83	0.99	1.53	1.47	1.13	1.25	3.1
Lu	0.37	0.42	0.30	0.16	0.22	0.19	0.18	0.19	0.45
Hf	3.2	3.8	2.1	1.5	4.8	4.1	3.6	4	8.7
Ta	2.6	2.32	2.56	2.46	1.07	1.26	0.28	0.28	1.01
W	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5
Tl	0.68	0.88	0.76	0.77	0.61	0.33	0.22	0.19	0.54
Pb	7	13	8	8	28	11	12	15	< 5
Bi	< 0.1	0.2	0.1	0.1	0.2	0.2	0.1	< 0.1	< 0.1
Th	30.4	38	32.3	19.5	13.8	11.5	2.7	3.01	7.76
U	5.43	5.75	2.94	1.98	3.71	2.05	2.04	1.13	2.38
∑ REE	137.17	122.40	101.05	28.25	154.25	182.84	70.71	76.24	258.84
Eu/Eu*	0.17	0.25	0.20	0.40	0.63	0.72	1.04	1.01	0.81
La_N / Ce_N	1.09	0.45	0.42	0.43	1.37	1.45	1.24	1.24	1.31
Gd_N/Yb_N	1.12	0.23	0.21	0.26	2.45	2.42	1.89	1.71	1.87
1000*Ga/Al	95.10	95.10	100.95	97.63	75.00	72.00	58.95	63.69	72.69

< below detection, (-) not determined. La_N/Yb_N, La_N/Ce_N and Gd_N/Yb_N are chondrite normalized values from Evensen et al. (1978).
Abbreviations: Ad. gr.: Adassil granite, Md. gr.: Medinat granite, Bz. gr.: Bouzouga granite.

Table 2. Whole-rock Sr-Nd isotopic data for the Azegour granite. $^{87}\text{Sr}/^{86}\text{Sr}$ and $^{143}\text{Nd}/^{144}\text{Nd}$ ratios, ϵSr and ϵNd values for an age of 270 Ma.

	Rb	Sr	$^{87}\text{Rb}/^{86}\text{Sr}$	2σ	$^{87}\text{Sr}/^{86}\text{Sr}$	2σ	$(^{87}\text{Sr}/^{86}\text{Sr})_{270}$	$(^{143}\text{Nd}/^{144}\text{Nd})_{270}$	ϵSr_{270}	ϵNd_{270}	T_{DM}
AZ-1	192	46	12.15	0.34	0.751525	0.000036	0.704843	0.512242	9.32	-0.94	0.83 Ga
AZ-2	202	36	16.1	0.46	0.766134	0.000035	0.704287	0.512233	1.43	-1.12	0.83 Ga
AZ-3	213	24	25.89	0.73	0.803537	0.000035	0.704084	0.512232	-1.45	-1.13	0.80 Ga
AZ-4	193	12	45.58	1.29	0.879725	0.000044	0.704636	0.512042	6.39	-4.85	0.11 Ga

Table 3. CIPW calculation results for the Azegour granite samples and neighbouring granitoids in the MHA.

	Azegour granite				Ad. granite		Md. granite		Bz. granite
	AZ-1	AZ-2	AZ-3	AZ-4	Ad1	Ad3	Md1	Md2	GB1
Quartz	36.61	37.46	37.84	37.05	30.99	32.98	24.07	24.74	16.49
Anorthite	1.80	1.98	1.69	1.72	6.61	4.40	8.65	10.89	19.97
Hypersthene	0.60	0.63	0.57	0.54	3.75	2.85	5.72	7.68	8.82
Albite	29.85	30.41	31.06	29.99	31.87	35.94	45.48	40.38	34.94
Orthoclase	30.51	28.68	28.16	30.24	22.97	20.51	12.40	11.84	16.24
Apatite	0.06	0.08	0.08	0.04	0.30	0.33	0.28	0.34	1.13
Ilmenite	0.14	0.14	0.12	0.07	0.43	0.35	0.58	0.61	1.06
Corundum	0.26	0.42	0.30	0.14	2.48	2.18	2.15	2.64	0.00
Magnetite	0.18	0.20	0.18	0.21	0.58	0.46	0.68	0.87	1.13
Diopside	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
LOI	0.37	0.37	0.25	0.26	1.11	1.67	1.71	2.09	1.88
Total	100.37	100.37	100.25	100.26	101.11	101.67	101.71	102.09	101.88