

Table S1. Contents of major (wt.%) elements in pyroxenes and amphiboles of the magmatic rocks of Kuranakh, Elikchan and Istekh ore fields

massif	Kuranakh massif							Elikchan massif				Istekh massif			Dikes and fractured bodies			
Rock	amphibole-biotite granite							Granodiorite				amphibole-biotite granite	granodiorite	Granophyry	trachydolerite			
Mineral	magne-sian augite	subcal-cic augite	magnesio-ferri-horn-blende	magnesio-ferro-hornblende		magnesi-an augite	Subcal-cic augite	magnesio-ferro-hornblende		ferro—tscher-makite		magnesio-ferro-hornblende	magnesian augite	subcalcic augite	diopside -augite	ferro-pargasite		
Sample	1213/2							O212/9		O196/12		K27/11	T704/1		T640		T639/6	
SiO ₂	51.50	51.46	49.80	47.43	47.83	48.43	50.85	52.27	51.07	47.45	50.89	40.02	50.56	52.88	52.17	53.45	50.85	41.13
TiO ₂	0.42	0.40	0.94	1.09	1.19	1.25	0.70	0.33	0.45	0.79	0.23	0.28	0.46	0.75	0.61	0.17	0.70	0.46
Al ₂ O ₃	2.45	2.69	4.19	4.96	5.50	6.25	2.54	2.98	5.32	8.68	4.56	13.05	2.98	1.56	5.11	2.25	2.54	17.25
Cr ₂ O ₃	0.47	0.09	0	0	0	0.15	0.05	0	0	0.02	0.01	0.01	0.09	0.06	0.97	0.05	0.05	0.03
Fe ₂ O ₃	4.82	3.14	8.59	0.28	4.50	3.76	5.08	0	3.49	4.85	5.39	6.37	2.50	1.25	0	0	5.08	0
FeO	0.73	10.84	5.24	14.87	11.00	11.99	3.76	13.45	9.80	10.69	6.73	21.68	12.47	6.53	4.57	18.30	3.76	13.93
MnO	0.15	0.48	0.38	0.59	0.52	0.48	0.30	0.48	0.55	0.71	0.38	0.24	0.97	0.16	0.17	0.25	0.30	0.45
MgO	17.90	17.46	14.31	14.37	13.56	12.83	16.14	16.27	15.18	12.47	18.22	2.80	13.67	14.08	16.83	13.88	16.14	8.19
CaO	21.20	11.90	14.24	11.31	11.32	11.29	20.90	11.75	10.75	11.28	9.87	10.52	11.26	21.11	19.96	11.22	20.90	12.85
Na ₂ O	0.36	0.82	0.93	1.44	1.50	1.42	0.25	0.84	1.14	1.53	0.44	1.32	0.73	0.96	0.39	0.71	0.25	1.95
K ₂ O	0	0.24	0.33	0.62	0.64	0.72	0.01	0.24	0.13	0.13	0	0.50	0.32	0	0	0.17	0.01	0.25
H ₂ O	-	-	2.04	1.86	2.02	2.03	-	-	1.81	1.97	2.06	10.81	1.76	-	-	-	-	1.89
F	-	0.25	-	0.20	0.29	-	0.15	0.09	0.53	0.10	0.20	0.05	0.34	-	0.13	0.17	0.15	0
Cl	-	0.04	-	0.20	0.10	-	0	0.04	0.04	0.12	0.01	0.17	0.32	0.19	0	0.23	0	0.40
Σ	99.96	99.75	100.99	99.22	99.58	100.54	100.73	98.74	100.26	100.79	98.99	98.82	98.43	99.42	100.9	100.63	100.73	98.78
Si	1.88	1.92	7.14	7.09	7.13	7.06	1.87	1.96	7.33	6.88	7.30	6.30	7.53	1.97	1.88	1.98	1.87	6.16
Al ⁴⁺	0.11	0.08	0.7	0.87	0.87	0.94	0.1	0.04	0.67	1.12	0.70	1.70	0.47	0.03	0.12	0.02	0.11	1.84
Al ⁶⁺	0	0.03	0	0	0.03	0.14	0	0.09	0.23	0.36	0.07	0.78	0.05	0.04	0.09	0.07	0	1.21
Ti	0.01	0.01	0.1	0.12	0.13	0.14	0.02	0.01	0.05	0.09	0.02	0.03	0.05	0.02	0.02	0.01	0.02	0.05
Fe ³⁺	0.13	0.09	0.93	0.03	0.18	0.37	0.14	0	0.38	0.53	0.58	0.76	0.28	0.04	0.	0	0.14	0
Fe ²⁺	0.02	0.34	0.63	1.85	1.70	1.52	0.12	0.43	1.17	1.29	0.81	2.85	1.55	0.20	0.16	0.66	0.12	1.76
Mn	0.01	0.02	0.05	0.08	0.07	0.06	0.01	0.02	0.07	0.09	0.05	0.03	0.12	0.01	0.01	0.01	0.01	0.06
Mg	0.98	0.98	3.06	3.20	3.01	2.79	0.89	0.91	3.25	2.69	3.89	0.66	3.03	0.78	0.90	0.75	0.89	1.83
Ca	0.83	0.47	2.19	1.75	1.8	1.81	0.82	0.47	1.65	1.75	1.52	1.77	1.80	0.85	0.77	0.44	0.82	2.06
Na	0.02	0.06	0.67	0.42	0.43	0.40	0.02	0.06	0.32	0.43	0.12	0.40	0.21	0.07	0.03	0.05	0.02	0.57
K	0	0.01	0.06	0.12	0.12	0.13	0	0.01	0.02	0.02	0	0.10	0.06	0	0	0.01		0.05
OH			1.99	1.85	1.84	1.99			1.75	1.92	1.99	1.93	1.76					1.89
F			0.01	0.10	0.14	0.01			0.24	0.05	0.01	0.02	0.16					0.01

Cl			0	0.05	0.02	0			0.01	0.03	0	0.05	0.08					0.10
Fe/(Fe+Mg)%	13.6	30.5	33.7	37.2	38.3	40.1	22.4	31.7	32.7	40.5	26.3	84.7	37.8	23.4	13.1	42.8	22.4	48.7
P, kb			0.55	0.5	0.9	1.5			0.65	2.95	0.31	7.21						11.4
T°C	1000	1200	781	862	855	845	930	1260	740	812	778	743	687	1000	1100	1250	1172	1025
Log f O ₂			-13	-11.4	-12.7	-13.5			-13.3		-11.5		-14.8					
H ₂ O in melt %			4.8	3.2	3.7	44			5.3		2.9		4.2					

Notes: the analyses were performed by L.A. Pavlova and S.P. Roev at IGABM SB RAS using the Camebax-micro x-ray microanalyzer. Calculations T°C during crystallization of the pyroxenes – by [40,41]; T°C amphiboles and H₂O* in melt – by [42], P– pressure during crystallization of the amphiboles – by [43].