Table ESM 9. Representative analyses of amphibole compositions for the Amphibolite area (mas. %)

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
19/949*	43.66	0.98	12.28	19.33	0.28	8.72	11.99	1.22	0.51
19/805*	45.12	0.45	12.05	18.06	0.43	9.78	11.81	1.27	0.39
19/1029*	43.60	0.63	10.96	16.60	0.28	9.48	9.72	1.70	0.27
18/475*	48.22	0.62	8.77	14.62	0.36	12.87	11.89	1.06	0.29
18/99**	46.27	1.38	8.44	16.00	0.33	11.64	12.10	1.12	0.45
18/475**	48.69	0.52	8.58	15.30	0.40	12.66	11.89	1.11	0.27
19/949**	47.43	0.79	8.49	19.00	0.33	9.55	12.06	0.72	0.31
18/475**	48.97	0.49	7.98	14.39	0.43	13.32	11.86	1.08	0.26
19/949**	54.49	0.05	1.48	16.60	0.39	13.36	12.64	0.11	0.02
22/1379**	54.90	0.09	1.40	11.88	0.39	16.26	12.14	0.23	0.05

*central zones of amphibole grains, * *edge zones of amphibole grains

Table ESM 10. Representative analyses of of plagioclase compositions for the Amphibolite area (mas. %)

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O	#An
18/475*	67.62	0.01	21.34	0.66	0.05	0.44	0.91	10.68	0.04	4
22/1379*	63.08	0.01	20.42	0.18	0.00	0.02	2.64	9.94	0.04	13
18/475**	77.77	0.21	14.43	0.65	0.00	0.34	0.30	7.52	0.03	2
18/91**	58.92	0.00	25.76	0.49	0.00	0.02	7.72	7.24	0.10	37
same	58.31	0.00	26.35	0.23	0.05	0.00	8.19	7.21	0.07	38
19/805**	58.96	0.01	27.38	0.08	0.00	0.01	7.53	7.19	0.08	36
same	58.61	0.02	27.74	0.04	0.00	0.01	8.06	6.91	0.06	39
19/1029**	56.54	0.04	27.58	0.22	0.00	0.00	9.81	5.98	0.03	47
same	57.11	0.00	27.07	0.27	0.00	0.01	9.50	5.77	0.05	47

*marginal zones of plagioclase grains, * *central zones of plagioclase grains

Table ESM 11. Representative analyses of clinocoisite compositions for the Amphibolite area (mas. %)

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
22/1379	38.81	0.00	33.01	0.32	0.00	0.01	24.70	0.16	0.02
same	38.74	0.00	31.34	2.11	0.03	0.00	24.62	0.09	0.01
>>	38.75	0.03	32.60	0.44	0.00	0.00	24.45	0.41	0.01
19/949	39.69	0.07	28.31	8.20	0.15	0.07	23.54	0.01	0.00
18/91	38.56	0.06	26.56	10.08	0.15	0.04	23.45	0.04	0.00
19/949	38.78	0.07	23.07	14.13	0.08	0.01	23.39	0.02	0.00
same	39.08	0.01	23.23	13.87	0.08	0.03	23.12	0.05	0.01
>>	39.52	0.07	25.34	11.90	0.12	0.04	23.10	0.03	0.11
18/475	39.29	0.03	25.55	11.26	0.13	0.00	23.07	0.05	0.18
22/134.3	38.82	0.01	29.07	7.92	0.31	0.17	23.05	0.03	0.01
18/91	41.68	0.10	24.49	10.49	0.06	0.30	21.66	0.00	0.01

Table ESM 12. Representative analyses of chlorite compositions for the Amphibolite area (mas. %)

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
18/475	26.53	0.03	22.30	25.14	0.32	14.30	0.06	0.12	0.01
same	25.75	0.01	22.40	25.72	0.25	13.79	0.07	0.01	0.01
>>	25.35	0.00	22.61	25.89	0.35	14.25	0.04	0.03	0.01
>>	29.51	0.06	20.08	23.11	0.28	16.45	0.03	0.03	0.01
19/805	26.92	0.08	21.93	24.87	0.35	15.32	0.09	0.00	0.00
same	26.87	0.14	22.44	23.83	0.37	15.78	0.05	0.00	0.00
>>	26.75	0.05	20.85	25.10	0.32	15.52	0.06	0.01	0.00
19/949	25.68	0.01	22.42	30.52	0.45	11.34	0.04	0.01	0.01
same	25.64	0.05	22.17	29.62	0.42	12.07	0.10	0.03	0.01
>>	25.58	0.02	21.62	32.96	0.52	10.02	0.01	0.00	0.00

Table ESM 13. Representative analyses of amphibole compositions for the Podgornensky area

№ sample	SiO_2	Al_2O_3	TiO_2	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
A3-9-19	44.56	10.36	0.75	18.29	0.80	10.61	10.56	1.25	0.37
same	44.00	10.82	0.71	17.70	0.71	10.54	10.87	1.13	0.46
>>	44.19	10.48	0.71	18.32	0.68	10.51	10.63	1.27	0.37
>>	44.31	10.70	0.69	17.68	0.67	10.33	10.98	1.25	0.42
>>	44.20	10.53	0.66	17.77	0.83	10.15	10.97	1.13	0.37
>>	44.37	11.31	0.56	17.39	0.77	10.04	11.35	1.32	0.38
>>	44.19	11.15	0.58	18.02	0.72	9.92	11.14	1.17	0.36
>>	44.42	10.67	0.74	17.71	0.64	9.29	11.05	1.10	0.41
A3-22	40.88	15.00	0.21	24.12	0.32	4.39	11.89	0.93	0.84

Table ESM 14. Representative analyses of of plagioclase compositions for the Podgornensky area

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O	#An
A3-9-19*	68.07	0.00	19.08	0.04	0.01	0.00	0.53	11.21	0.06	3
same	67.26	0.01	19.81	0.30	0.03	0.08	0.41	10.54	0.68	2
A3-22*	58.69	0.02	26.11	0.19	0.01	0.04	7.30	5.85	1.21	38
A3-9-19**	54.58	0.01	27.90	0.23	0.04	0.00	11.10	5.26	0.05	50
A3-22**	55.08	0.00	27.73	0.08	0.02	0.00	11.45	5.10	0.04	55
A3-22***	53.76	0.00	28.80	0.06	0.02	0.01	12.59	4.34	0.04	66
A3-9-19***	50.42	0.00	30.27	0.19	0.00	0.00	13.72	3.81	0.03	71

*marginal zones of plagioclase grains, * *intermediate zones of plagioclase grains, ** * central areas of plagioclase grains.

Table ESM 15. Representative analyses of clinocoisite compositions for the Podgornensky area

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
A3-22	43.02	0.02	27.99	2.92	0.13	0.03	22.24	1.97	0.01
A3-9-19	38.26	0.06	24.52	10.37	0.18	0.03	23.57	0.01	0.00
the same	38.21	0.04	24.65	9.80	0.10	0.03	23.82	0.04	0.00
>>	41.84	0.11	26.85	5.59	0.10	0.02	22.02	1.79	0.02
>>	39.62	0.14	23.76	10.97	0.28	0.01	23.39	0.00	0.00
>>	40.09	0.04	26.59	5.90	0.06	0.01	24.04	0.95	0.01
A3-22	38.11	0.31	23.80	10.76	0.28	0.00	23.42	0.01	0.00
the same	39.64	0.10	26.52	7.15	0.06	0.00	23.37	0.48	0.00
A3-9-19	37.50	0.03	22.46	12.65	0.07	0.00	23.53	0.06	0.01

Table ESM 16. Representative analyses of biotite compositions for the Podgornensky area

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
A3-9-19	36.66	2.63	16.22	18.12	0.21	11.77	0.00	0.14	9.86
the same	36.96	2.61	16.21	17.42	0.24	12.00	0.00	0.09	9.82
>>	36.52	2.51	16.11	19.54	0.19	10.84	0.00	0.08	9.81
>>	35.47	2.34	16.46	21.25	0.22	8.70	0.00	0.02	9.80
A3-22	38.28	1.98	16.35	19.55	0.22	10.98	0.03	0.12	9.44
the same	38.32	1.96	15.93	19.02	0.20	10.67	0.08	0.10	9.33

Table ESM 17. Representative analyses of chlorite compositions for the Podgornensky area

№ sample	SiO_2	TiO_2	Al_2O_3	FeO_{tot}	MnO	MgO	CaO	Na_2O	K_2O
A3-9-19	25.51	0.10	20.30	27.00	0.42	13.97	0.02	0.01	0.01
the same	26.06	0.13	19.86	26.52	0.60	14.23	0.02	0.04	0.02
>>	25.49	0.06	20.09	27.39	0.56	13.85	0.01	0.02	0.01
A3-22	25.75	0.14	21.01	23.87	0.51	16.12	0.02	0.00	0.09
the same	25.77	0.08	21.41	23.29	0.44	16.55	0.03	0.00	0.00
A3-9-19	25.61	0.05	20.55	27.37	0.58	13.43	0.03	0.04	0.01
the same	25.17	0.13	20.66	27.60	0.47	13.54	0.02	0.00	0.11
A3-22	26.11	0.08	21.21	22.86	0.44	17.01	0.00	0.00	0.00

Table ESM 18 Representative results of thermobarometry on plagioclase-amphibole equilibrium for the Amphibolite area

№ sample	Mineral	Concentration, wt. %									Pressure, kbar	Temperature, °C
		SiO_2	Na_2O	FeO	K_2O	Al_2O_3	MgO	MnO	CaO	TiO_2		
Peak paragenesis												
18/475	Pl	56.54	5.98	0.22	0.03	27.58	0.00	-	9.81	0.04	6.8	697
	Amph	44.93	0.96	18.23	0.44	10.64	9.79	0.32	11.94	1.20		
the same	Pl	56.61	9.12	0.73	0.02	21.24	1.90	0.08	3.75	0.01	3.3	598
	Amp	48.97	1.08	14.39	0.26	7.98	13.32	0.43	11.86	0.49		
>>	Pl	77.77	7.52	0.65	0.03	14.43	0.34	-	0.30	0.21	3.7	616
	Amp	48.97	1.08	14.39	0.26	7.98	13.32	0.43	11.86	0.49		
19/949	Pl	58.61	6.91	0.04	0.06	27.74	0.01	0.00	8.06	0.02	6.7	683
	Amph	45.44	1.11	17.18	0.34	10.51	10.84	0.41	11.73	0.47		
18/99	Pl	58.92	7.24	0.49	0.10	25.76	0.02	0.00	7.72	0.00	6.6	652
	Amph	43.60	1.70	16.60	0.27	10.96	9.48	0.28	9.72	0.63		
Late paragenesis												
19/805	Pl	63.08	9.94	0.18	0.04	20.42	0.02	-	2.64	0.01	1.1	571
	Amp	51.43	0.53	14.19	0.12	5.19	14.02	0.36	12.25	0.33		
19/805	Pl	62.40	9.82	1.60	0.03	21.50	0.60	0.01	2.44	0.01	1.2	607
	Amp	50.85	0.45	13.04	0.08	2.76	14.63	0.31	12.27	0.17		

Table ESM 19. Representative results of thermobarometry on plagioclase-amphibole equilibrium for the Podgornensky area

№ sample	Mineral	Concentration, wt. %									Pressure, kbar	Temperature, °C
		SiO_2	Na_2O	FeO	K_2O	Al_2O_3	MgO	MnO	CaO	TiO_2		
A-3-19	Pl	68.07	11.21	0.04	0.06	19.08	0.00	0.01	0.53	0.00	6.6	644
	Amph	44.19	1.17	18.02	0.36	11.15	9.92	0.72	11.14	0.58		
the same	Pl	56.34	6.39	0.14	0.07	26.18	0.00	0.00	9.38	0.00	6	678
	Amph	44.19	1.27	18.32	0.37	10.48	10.51	0.68	10.63	0.71		
>>	Pl	54.58	5.26	0.23	0.05	27.90	0.00	0.04	11.10	0.01	5.6	717
	Amph	44.56	1.25	18.29	0.37	10.36	10.61	0.80	10.56	0.75		
>>	Pl	55.68	5.55	0.04	0.06	27.21	0.00	0.00	10.54	0.00	5.9	677
	Amp	44.19	1.27	18.32	0.37	10.48	10.51	0.68	10.63	0.71		
A-3-22	Pl	57.28	5.66	0.09	0.08	26.63	0.01	0.02	10.19	0.02	5.2	680
	Amp	44.19	1.17	18.02	0.36	11.15	9.92	0.72	11.14	0.58		
the same	Pl	55.68	5.55	0.04	0.06	27.21	0.00	0.00	10.54	0.00	4.8	643
	Amp	44.42	1.10	17.71	0.41	10.67	9.29	0.64	11.05	0.74		
>>	Pl	54.51	5.61	0.12	0.06	28.36	0.00	0.01	10.43	0.00	5.8	655
	Amp	40.88	0.93	24.12	0.84	15.00	4.39	0.32	11.89	0.21		