

Table ESM 21. Sulphur isotope composition of pyrite and chalcopyrite from the Vasilinovskoe ore occurrence

Sample	Mineral	$\delta^{34}\text{S}$, ‰	Sample characteristics
<i>Amphibolite area</i>			
A-5-19	pyrite	−0.14	Magnetite-chalcopyrite-pyrite association; pyrite-chalcopyrite exsolution textures; Pd tellurides
	chalcopyrite	0.39	
A-9-19	pyrite	6.28	Fragment of white brecciated quartz vein with pyrite dissemination
A-867	pyrite	0.87	Sulphide aggregates (pyrite, chalcopyrite)
	chalcopyrite	1.31	
A-869	pyrite	2.05	Sulphide aggregates (pyrite)
A-1133	pyrite	−1.42	Epidote scarnoid vein
	chalcopyrite	0.18	
A-1266-1	pyrite	2.97	Magnetite-chalcopyrite-pyrite association
	chalcopyrite	4.15	
A-17-01-1	pyrite	−0.19	Chalcopyrite, Au-Ag tellurides, Cd-sphalerite, grinokite
A-17-01-2	pyrite	−2.65	Fragment of ferruginized quartz vein with sulphide dissemination (up to 2 cm), ore zone
A-17-19	pyrite	0.14	Pyrite-chalcopyrite-quartz association
	chalcopyrite	−1.57	
A-17-22	pyrite	−4.24	Metasomatites with sulphides from the mineralization zone
A-18-3	chalcopyrite	3.5	Epidotized sulphide-quartz metasomatites
A-18-121	pyrite	−1.46	Sulphide aggregates (pyrite, chalcopyrite)
	chalcopyrite	−1.51	
A18-140	pyrite	−0.53	The same
	chalcopyrite	−0.15	
A-18-302	pyrite	0.23	Chalcopyrite, Ag tellurides
A-18-342	pyrite	1.06	Amphibolized gabbroides with sulphide dissemination
A-18-436	pyrite	−1.20	Magnetite, pyrite, chalcopyrite. Replacement of magnetite by hematite, Pd tellurides.
A-18-602	pyrite	−3.96	Gridded sulfide veins (brecciated texture) in melanocratic rocks (probably in pyroxenites)
A18-718	pyrite	2.45	Magnetite-chalcopyrite-pyrite association
	chalcopyrite	3.34	
A-19-930	pyrite	−0.82	Massive quartz vein with pyrite aggregates
V-198b-21	pyrite	−4.0	Sulfidized gabbroides
V-199/21	pyrite	−2.04	Quartzous gabbroides
V-202-21	pyrite	−3.1	Sulfidized gabbroides

V-212-21	pyrite	−2.5	The same
A-23	pyrite	−1.7	Quartz-sulfide vein with epidote
<i>Podgornensky area</i>			
A2-8-19	pyrite	2.72	Quartz-carbonate veins, rare sulfides (chalcopyrite, pyrite)
A2-17-19	pyrite	−16.39	Vein of massive ferruginized quartz with sulfide dissemination (similar to quartz-chalcopyrite veins of Vasilinovskoye ore occurrence)
A3-4-19	pyrite	−0.62	Massive ferruginized quartz with xenoliths of gabbroides
A3-10	pyrite	0.4	Sulphide-quartz association, with chalcedonic quartz
	chalcopyrite	−0.2	
A3-10-19b	pyrite	−2.02	Layered fine- and medium-grained pyrite (rocks are crossed by veins of chalcedonic quartz)
A3-11-19	pyrite	−1.28	Massive ferruginized quartz in contact with porphyrites
A3-16-19	pyrite	−0.62	Quartzous gabbroides
A3-17-19	chalcopyrite	−1.74	Feldspar-quartz vein fragment with sulphide dissemination
A3-18-19	pyrite	−0.91	Chalcedonic quartz with linear sulphide dissemination
	chalcopyrite	−0.88	
A3-22	pyrite	0.14	Sulphide-quartz veins (often ferruginized), massive quartz
	chalcopyrite	−0.46	
A3-23-2	chalcopyrite	−0.93	Sulphide aggregates
<i>Rai-Iz, the upper reaches of the Nephritovy stream</i>			
RI-1	pyrite	5.18	Massive pyrrhotite-pyrite-sphalerite ores