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PŮVODNÍ PRÁCE/ORIGINAL PAPER

Minerály kontaminovaných granitových pegmatitů z lomu Pohled u Havlíčkova Brodu (moldanubikum), část II: prvky a sulfidy

Minerals of contaminated granitic pegmatites from the Pohled quarry near Havlíčkův Brod (Moldanubicum, Czech Republic), part II: elements and sulphides

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Abstract

In the Pohled quarry near Havlíčkův Brod town (central part of Czech Republic), texturally and mineralogically simple contaminated anatectic pegmatites form dikes or irregular bodies cementing breccia of host metamorphic rocks (paragneisses, amphibolites) belonging to the Monotonous (Ostrong) Group of the Moldanubicum of the Bohemian Massif. They exhibit signs of intense hydrothermal overprint and also the presence of abundant disseminations, nests and veinlets of ore minerals. A detailed mineralogical study revealed the presence of an extraordinary rich ore assemblage (20 species in total, including one unnamed phase). The oldest minerals are sphalerite (rich in Fe), löllingite, Fe-Co-Ni sulphoarsenides (cobaltite, glaucodot, arsenopyrite, gersdorffite), pyrrhotite, galena and chalcopyrite, in later portion accompanied by inclusions of Bi-minerals (native bismuth, bismuthinite, joséite-A, joséite-B, ikunolite and a Pb-Bi sulphosalt). The composition of the Pb-Bi sulphosalt is equal to Ag,Fe-substituted eclarite; its identity was confirmed also by Raman spectrum. Pyrite is very abundant phase, present probably in several generations. The Fe-Co-Ni thiospinels disseminated in younger chlorite, and represented by siegenite, violarite, grimmite and an unnamed NiFe₂S₄ phase, are the youngest ore minerals. The mineral association as well as chemical composition of most ore minerals are well comparable to those of local polymetallic ore veins and Alpine-type veins, which give evidence for identical origin of all these ore mineralizations. The formation of pegmatite-hosted ore assemblage was long-lasting multiphase process, which took place at temperatures between ca. 350 and <120 °C during changing fugacities of sulphur, tellurium and oxygen. A distinct enrichment in cobalt and nickel of ore mineralization hosted by pegmatites (in comparison with hydrothermal veins) is explained in terms of pronounced interactions of fluids with amphibolites and serpentinites.

Key words: contaminated granitic pegmatites, hydrothermal alteration, ikunolite, eclarite, NiFe₂S₄, Moldanubicum, Bohemian Massif

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