Magnetitová mineralizace v amfibolitech brněnského masivu, Česká republika

Magnetite mineralization of amphibolites in the Brno Massif, Czech Republic

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Abstract

Magnetite mineralization was found in the quarry approximately 2 kilometres WNW of village Želešice. Magnetite- and silicate-rich layers form lens up to 0.5 m thick and 1.5 m long, enclosed in amphibolite near the contact with biotitic granodiorite. Zoned magnetite grains occur together with actinolite, epidote, iron-rich chlorite and ilmenite (pyrophanite end-member 15 - 16 mol. %). The oscillatory zoning in magnetite exists mainly due to substitution of Si^{4+} and Al^{3+} for Fe^{3+} in the tetrahedral site accompanied by substitution of divalent cation (Ca, Mg) in the octahedral site. The magnetite zoning and mineral assemblage of studied mineralization can be explained as a consequence of interaction between iron-rich lens in amphibolites and low-temperature hydrothermal fluids under reducting conditions.

***Key words**: magnetite, amphibolites, chemical composition, hydrothermal fluids, Brno Massif, Czech Republic*