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Retrográdní alterace peridotitu z lomu Plaňany u Kolína (kutnohorské krystalinikum, Česká republika): kontrastní chování silikátů a sulfidů

Retrograde alteration of peridotite from the quarry Plaňany near Kolín (Kutná Hora Crystalline Complex, Czech Republic): contrasting behaviour of silicates and sulfides

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Abstract

Migmatites from the Plaňany I quarry (Kutná Hora Crystalline Complex, Czech Republic) rarely contain small xenoliths of ultramafic rocks, which are dominated by serpentinites and pyroxenites. We studied a rare xenolith of a weakly serpentinized peridotite by means of an electron microprobe. The original (primary) mineral assemblage is represented by prevailing olivine (Fo_{90}) and small amounts of clinopyroxene ($Wo_{48-49}En_{49-50}Fs_{1-3}$), orthopyroxene ($En_{92}Fs_{8}$), chromspinelide ($Chr_{45-65}Spl_{20-46}Mch_{0-12}Mgt_{2-4}Hrc_{0-5}Ghn_{1-2}Gal_{1}Ulv_{0-1}$), and sulfides (pentlandite and cobaltopentlandite). The alteration phases include amphiboles (magnesiohornblende and tremolite), chlorite (clinochlore), minerals of the serpentine group, magnetite, heazlewoodite, orcelite, bornite, and an undetermined phase with high amount of Bi. The paragenetic position of calcite and an unnamed $(Ni,Fe)_4S_3$ phase was not recognized. Sulfides reacted much more sensitively to superimposed alterations than silicates in the studied rock: whereas olivine shows only weak serpentinization, the sulfide droplets dominated by (cobalto)pentlandite were in almost all cases deeply transformed to the association heazlewoodite + magnetite. The alteration fluids were poor in reduced sulfur and derived from outside of the xenolith because brought Na, K, F and Bi from the surrounding crustal rocks.

Key words: *Plaňany, Kutná Hora Crystalline Complex, peridotite, serpentinization, heazlewoodite, pentlandite,* Ni_4S_3

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