

Vanad-uranová mineralizace v lomu Prachovice (Česká republika)

Vanadium-uranium mineralization in the Prachovice quarry (Czech Republic)

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Abstract

Unusual rich vanadium-uranium mineralization in hydrothermal calcite veins was found at large active quarry Prachovice located about 20 km SW from Pardubice, eastern Bohemia, Czech Republic. Primary minerals: montroseite, melanovanadite, new Ca-Fe-V phase, uraninite and clausenthalite are intensely altered to supergene mineral phases: sherwoodite, tyuamunite, rossite, metarossite and pascoite. Montroseite occurs as abundant black hemispherical aggregates up to 25 mm in size and crusts in calcite gangue formed by long tabular to acicular crystals up to 2 mm in length. Melanovanadite was found only rarely as black acicular crystals up to 7 mm in length formed radial aggregates with diameter up to 15 mm. New Ca-Fe-V phase forms very rare black (with bluish tint) well-formed brittle isometric crystals up to 0.7 mm in association with melanovanadite and tyuamunite. Uraninite forms abundant microscopic (up to 50 - 80 μm) grains in montroseite or calcite gangue. Clausenthalite was found as very rare microscopic (25 μm) grains in association with uraninite and montroseite. Pascoite occurs as transparent to translucent brown to orange red crystals up to 1 mm in size and yellow-orange crusts at area about some cm^2 . Rossite was found as transparent to translucent colourless to white (some with green or blue tint) isometric to tabular crystals up to 0.2 mm in size or white (some with green tint) crystalline crusts at area about 1 x 3 cm. Metarossite formed white to grey fine crystalline crusts (at area up to 3 x 3 cm) on calcite gangue; it was also found as dehydration product of rossite. Sherwoodite occurs as abundant powder to massive aggregates up to 2 x 10 x 10 cm formed as alteration product of montroseite aggregates. Its colour varies from light green, yellow-green, blue-green to brown-green or dark green. Tyuamunite was found as yellow to greenish yellow tabular crystals up to 1 mm in size and their rich radial aggregates on calcite or montroseite. The powder X-ray diffraction data, refined unit-cell parameters and results of quantitative chemical study of described mineral phases are given in the paper.

Key words: *montroseite, paramontroseite, melanovanadite, pascoite, rossite, metarossite, sherwoodite, metatyuamunite, tyuamunite, uraninite, chemical composition, X-ray data, Prachovice quarry, eastern Bohemia, Czech Republic*

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