

Geneze zelené plazmy - specifického mikrokrytalického křemičitého produktu zvětrávání serpentinitů (moravské moldanubikum, Český masiv)

Genesis of green plasma - specific microcrystalline silica product of serpentinite weathering (Moravian Moldanubicum, Bohemian Massif)

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Abstract

Dark green variety of microcrystalline quartz-chalcedony mixture (plasma) is a specific product of lateritic weathering in serpentinitized peridotites. In western Moravia, its occurrences are regionally limited to a few serpenitinated bodies. Plasma forms mostly oval nodules with variously developed zonation (dark core, a lighter rim and white edge). Typical microscopic feature is vermiform texture, mainly in marginal zones. Raman spectroscopy, X-ray powder diffraction analysis and WR study of individual zones showed that plasma consists of micro- to non-crystalline polymorphic modifications of SiO₂ with variable contents of H₂O (quartz, chalcedony, moganite, tridymite, opal-CT); its color is due to submicroscopic pigment (chlorite, smectite) component. The sporadic relict minerals from serpentinite (amphibole, clinocllore, Cr-diopside) are also preserved. Newly formed minerals are represented by accessory pyrite, barite and very rare carbonate-apatite. Plasma formed in subaerial, partially reducing conditions from the Cretaceous to Paleogene in the deepest part of weathering crust covering serpentinites; possible interaction between the serpentinite residuum and overlying Miocene marine sediments as a plasma-forming factor is not excluded.

Key words: *plasma, green quartz, chalcedony, moganite, opal, weathering, serpentinite, Moldanubian Zone, Bohemian Massif*

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