

Krutovit a sprievodné minerály z lokality Dobšiná-Teliatko (Slovenská republika)

Krutovite and associated minerals from the Dobšiná-Teliatko occurrence (Slovak Republic)

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Abstract

An interesting hydrothermal ore mineralization with krutovite has been found in the abandoned serpentinite-a-sbestos quarry near Dobšiná, Slovak Republic. It is represented by a lenticular nearly subhorizontal vein which is up to 15 cm thick and more than 2 m long and was developed on the contact between the serpentinite breccias and limestones. Quartz and calcite are the main gangue minerals. The most abundant ore mineral is nickeline which is associated with krutovite and galena. Primary ore minerals are often replaced by aggregates of bright green supergene Ni-silicates and mimetite. Krutovite forms metallic, greyish-white individual grains and botryoidal aggregates up to 5 mm in quartz-Ni-silicate mass or microscopic zones in aggregates of older nickeline. Its refined unit-cell parameters are: $a = 5.8131(8) \text{ \AA}$ and $V = 196.43(9) \text{ \AA}^3$. The chemical composition of krutovite from Dobšiná is close to the end member formula and only minor amounts of Cu (up to 0.009 *apfu*), Hg (up to 0.002 *apfu*), Sb (up to 0.004 *apfu*), S (up to 0.047 *apfu*) and Se (up to 0.014 *apfu*) were detected. Nickeline occurs as metallic, copper-red irregular grains and aggregates up to 2 cm or veinlets up to 8 cm long and 1 cm thick which are embed in quartz-calcite gangue and are often heavily replaced by supergene green Ni-silicates. Its refined unit-cell parameters are: $a = 3.6177(2) \text{ \AA}$, $c = 5.0404(3) \text{ \AA}$ and $V = 57.129(8) \text{ \AA}^3$ and it shows mostly uniform chemical composition with only low contents of Se (up to 0.005 *apfu*) and S (up to 0.048 *apfu*). Rarely also microscopic aggregates of unusual S-rich nickeline (up to 0.217 *apfu* S) or Ni-deficient disordered nickeline were observed together with krutovite. These phases may represent nickeline with the submicroscopic (under the 0.1 μm) inclusions of krutovite or products of diffusion of krutovite to the older nickeline during the replacement. Galena is common mineral in studied association and it forms irregular aggregates or veinlets up to 1 cm. It is often strongly replaced by mimetite or anglesite so its relationship to the nickeline and krutovite is unclear. The chemical composition of galena from Dobšiná is rather simple and only minor amounts of Sb, As, Bi and Se were detected.

Key words: *krutovite, nickeline, galena, chemical composition, X-ray powder data, Dobšiná, Western Carpathians, Slovak Republic*

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