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Maldonite (Au_2Bi) from hydrothermal U-As mineralization near Henclová (Spišsko-gemerské rudohorie Mts., Western Carpathians): the first occurrence in Slovakia

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Abstract

In Slovakia, maldonite was identified in the hydrothermal vein with U-sulphidic ore mineralization near Henclová village (Gelnica district) in the Spišsko-gemerské rudohorie Mts. (Vlachovo Formation, Gemeric Unit). It is the first occurrence of this mineral in Slovakia. Mineralization is developed in a hydrothermal quartz-chlorite (± fine grained white mica) vein with abundant arsenopyrite and minor quantities of uraninite, gersdorffite, löllingite, galenobismutite, bismuthinite, maldonite, bismuth and gold. Maldonite forms irregular grains up to 12 μm in size embedded in arsenopyrite, or extremely fine capillary veinlets in it. An intergrowth of maldonite with bismuthinite was rarely also observed. The chemical composition of maldonite is relatively monotonous, its average empirical formula can be expressed as $(Au_{1.79}Fe_{0.15})_{\Sigma 1.94}(Bi_{0.98}As_{0.02}S_{0.04})_{\Sigma 1.04}$. Microstructural relationships of ore minerals suggest that maldonite precipitated in the final stages of ore mineralization, when the temperature of the system decreased (after the crystallization of sulphoarsenides and löllingite).

Key words: *maldonite, hydrothermal vein U-sulphidic mineralization, Gemeric Unit, Western Carpathians.*

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