

Chrómom a vanádom obohatený grossulár zo skarnu Dubová v Malých Karpatoch (Slovensko)

Chromium- and vanadium-rich grossular from Dubová skarn, Malé Karpaty Mountains (Slovakia)

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Abstract

Grossular garnet, enriched in Cr and V, forms rare subhedral crystals (up to 40 μm in size) with diopside, albite, K-feldspar, titanite and clinozoisite in Ca-skarn near Dubová, Malé Karpaty Mts., Western Carpathians (SW Slovakia). The skarn is situated along the contact between Devonian limestones and Carboniferous granitic rocks. Grossular crystals shows two distinct zones: Cr-V enriched core and Cr-V poor rim with sharp boundary between the zones. The Cr,V-rich grossular cores contain 0.9 to 5.3 wt. % Cr_2O_3 (0.06 to 0.33 *apfu* Cr) and 0.5 to 2.0 wt. % V_2O_3 (0.03 to 0.13 *apfu* V), whereas the rims exhibit ≤ 0.5 wt. % Cr_2O_3 (≤ 0.03 *apfu* Cr) and ≤ 0.3 wt. % V_2O_3 (≤ 0.02 *apfu* V). The garnet cores and rims show (in mol.%): 60 - 73 and 75 - 94 grossular, 11 - 19 and 2 - 19 andradite, 3 - 18 and 0 - 2 uvarovite, 1 - 7 and 0 - 1 goldmanite, 1 - 4 and 0 - 5 almandine, and 0.5 - 1.4 and 0.4 - 1.6 spessartine, respectively. The garnet cores usually corresponds to $\text{Cr} > \text{Mn} > \text{V}$ (*apfu*) composition, a new type in chemical classification of V,Cr-rich grossular (tsavorite). Adjacent dark, graphite-rich phyllites were probably the source of Cr and V. The Cr,V-rich grossular cores precipitated probably during the early contact-metamorphic stage, whereas the Cr,V-poor rims originated during later, main evolution stage of the skarn formation.

Key words: chromium-vanadium-rich garnet, grossular, skarn, chemical composition, Dubová, Western Carpathians

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