

# Mineralogická charakteristika mramorov z lokality Nižný Klátov (Volovské vrchy, Slovenská republika)

## Mineralogical characteristics of marbles from the locality Nižný Klátov (Volovské vrchy Mts., Slovak Republic)

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### Abstract

Studied marbles occurring in the stone quarry near Nižný Klátov, Slovakia are parts of amphibolites. They form a lithologic member of the Klátov complex of Gemericum. Marbles contain fragments of amphibolites and feldspar porphyroblasts. The colour of marbles is grey light to greyish green. The rock has a massive texture and granoblastic structure. The identified mineral association of marbles forms calcite + amphiboles (magnesian hornblende, pargasite, ferri-tschermakite, actinolite) + clinopyroxenes (diopside) + albite + orthoclase + epidote-super group minerals + titanite. Actinolite has a Mg/(Mg+Fe) ( $X_{Mg}$ ) ratio in the range 0.55 - 0.85. In the dark zone of actinolite, Mg<sup>2+</sup> contents increase (from 3.102 to 3.889 *apfu*) and Fe<sup>2+</sup> contents decrease (from 1.068 to 1.766 *apfu*), while in the light zone the Mg<sup>2+</sup> contents decrease (from 2.868 to 3.284 *apfu*) and the Fe contents increase (from 1.615 to 2.071 *apfu*). With an increasing ratio of tschermakite molecule, the ratio of  $X_{Mg}$  decreases to 0.50. The clinopyroxenes have a high ferrous diopside composition with an  $X_{Mg}$  ratio of 0.54 to 0.60. The composition of titanite is close to the end member without any significant substitution, Al content is max. 0.07 *apfu*, Fe<sup>3+</sup> is below 0.02 *apfu*. Max. 0.05 *apfu* of Na is founded in the orthoclase, contents of Ca and K together in the albite is below 0.01 *apfu*. Epidote-super group minerals form two compositional trends. The first trend is the epidote-clinzoisite divided into three groups: 1. Epidotes containing Fe<sup>3+</sup> 0.80 - 0.95 *apfu*; 2. Epidotes to clinzoisites containing Fe<sup>3+</sup> 0.47 - 0.63 *apfu*; 3. Clinzoisites containing Fe<sup>3+</sup> below 0.03 *apfu*. The second trend is a REE-enriched epidote containing 0.40 *apfu*. In the dark zone of the epidote, a higher Al<sup>3+</sup> content (0.363 - 0.604 *apfu*) and a lower Fe<sup>3+</sup> content (0.382 - 0.633 *apfu*) are present. In the light zone of the epidote, a higher Fe<sup>3+</sup> content (0.802 - 0.952 *apfu*) and a lower Al<sup>3+</sup> content (0.011 - 0.175 *apfu*) are present. Calcite is chemically pure; the presence of dolomite has not been confirmed. Marbles are products of local metamorphic processes that were randomly generated in the tectonic zones of amphibolites.

**Key words:** mineralogy, marbles, Nižný Klátov, Slovak Republic

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