

CHROMIUM CONCENTRATION IN VOLKONSKOITES FROM WEST URAL

SIMAKOVA, Y.S. Institute of Geology, Ural Division RAS, Syktyvkar, Russia

Volkonskoite is unique mineral from smectite group containing dominant chromium in the octahedral position. We examined about 15 samples of volkonskoites and 10 samples of enclosing rocks from permian deposits (West Ural). Chemical analysis shows great variations in chromium content (17-30 wt.%), which is the largest one in volkonskoites from upper parts of deposits and the least in the samples from the lower ones. Investigations shows that since volkonskoites have formed by decomposition of ultramafic and mafic rocks in the Ural mountains so the chromium content in mineral depends on the remoteness of its deposits from the Urals and reduces in minerals from Perm to Kirov region respectively from 30 to 20 wt.%. In volkonscoite-bearing rocks Cr accumulated in clayey cement of sandstones (Cr ~ 2%). Microscopic and SEM investigations shows that in "volkonskoite tree" (volkonskoite pseudomorphs on buried plant remains) mineral often keep the form and inner structure of replaced tree, have a fibrous texture, which is often marked finely disseminated inclusions of iron hydroxides, and is firstly formes on the weakening parts of silicified wood (cell membranes, boundaries of quartz grains, small cracks and so on), where an organic matter can remains. Despite the fact that role of organic matter as a Cr concentrator in volkonskoite forming is evident, the gas chromatographic investigations shows that initial organic matter in volkonscoites and enclosing rocks is absent.