

CLAYEY MINERALS OF PRE-CARPATHIAN EVAPORITE DEPOSITS, UKRAINE

BILONIZHKA, P. (National University, Lviv, Ukraine)
E-mail: geomin@geof.franko.lviv.ua

Pre-Carpathian evaporite deposits characterise with exceptionally high content of the clayey minerals. Their main quantity had been supplied into Miocene salt-origin basin from Carpathian mountains during flysch series denudation with a help of water steams.

Illite terrigenous origin confirms by its age determined with K/Ar-method (154-278 mln. years).

Terrigenous clayey minerals had been altered considerably during progressive salinization of the Miocene basin. It's confirmed by presence in Carpathian flysch series of the illite, smectite, chlorite, kaolinite and mixed-layered phases, while in salinized sandy-clayey deposits of Pre-Carpathian Foredeep one can see illite and chlorite with some admixture of kaolinite and disordered mixed-layered phase (illite-smectite) and in evaporites - only illite and chlorite. Such simplification of the clayey minerals is resulted by unstability of the terrigenous smectite and kaolinite under influence of the high magnesium and potassium ions concentrations and its transformational alteration into illite and chlorite.

Terrigenous illite in salt - origin basin had been altered too. These changes are connected with potassium content increase and decrease of the low-temperature water and swelled smectite layers.

Illite had been altered actually into dioctahedral aluminium mica as chemical and X-ray analyses testify. Illite alteration into mica as it's known takes place on katagenesis stage under comparatively high temperature. In accordance with our investigations this process can also take place and under quite low temperature in presence of the high potassium ions concentrations in salt-origin basins on the potassium salts crystallization stage. At the same time alterations of chemical composition and structural peculiarities of the magnesium-ferruginous chlorite had took place by increase of magnesium content and crystallinity degree.

Close connection between chemical composition, structural peculiarities, clayey minerals paragenetic associations and its origin can be used for ascertaining of the salt-accumulation geological conditions in sedimentation basins.