

Phlogopite from “mica-rocks”

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Four xenoliths consisting mainly of olivine and phlogopite were found in Udachnaya pipe (Siberia). In addition to these, studied xenoliths contain small amounts of sulphide minerals and the following: 1) UV681-11 - lherzolitic garnet, pyroxenes; 2) UV736-11 - amphibole; 3) UV709-11, UV659-11 - ilmenite, clinopyroxene. In addition to large matrix flakes, fine grains of phlogopite were found as inclusions in amphibole and sulfide, interstitial grains between the matrix minerals, and in the rims of garnet UV681-11. Mg# of olivine varies widely from 82 to 93 (in UV681-11).

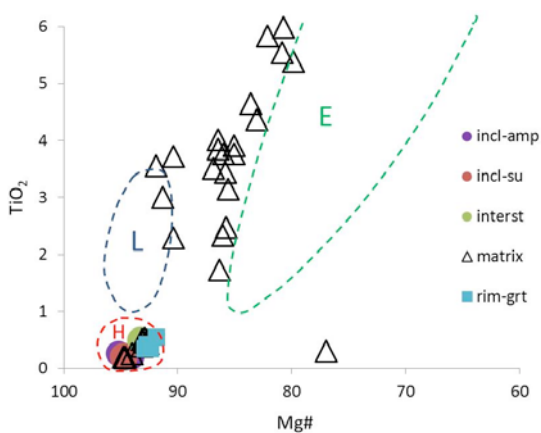


Fig.1 Compositions of phlogopites from "mica-rocks". The fields of different paragenetic types of phlogopite inclusions in diamonds, taken from work [1], are present on the chart: H – harzburgite-dunite, L – lherzolite, E – eclogite.

The compositions of fine grain phlogopites are located in the field of phlogopite inclusions in diamonds from harzburgite-dunite paragenesis. Matrix phlogopites from UV681-11 (with lherzolitic minerals) and UV736-11 (with amphibole) are in the same field. Points of matrix compositions of phlogopites from two other samples (with ilmenite) lie between fields of phlogopite inclusions in diamonds from lherzolitic and eclogite paragenetic types, representing, apparently, a some special type of mantle metasomatism.

[1] Sobolev et al. (2009) Russian Geology and Geophysics, **50** (12), 1588-1606