

Composition of ilmenite inclusions in phlogopite from Yakutian kimberlites (the Mir, Yubileynay and Obnazhennaya pipes)

BABUSHKINA S.A. Russian Academy of Sciences Siberian
Departmen. Institute of geological sciences, Yakutsk, Russia.

Ilmenite is one of most widespread of kimberlite minerals and traditionally is considered as the mineral-sputnik of diamond. The ilmenite marked as inclusion in not less widespread mineral of kimberlites - phlogopite was object of our study. 86 ilmenite inclusions was studied at the microprobe analysis in 51 macrocrystals of phlogopite.

Pycroilmenites included in mica from various pipes Yakutian kimberlite province are characterized by typical intervals of composition variability. Its are demonstrate trend of cristallisation similarly to megacrists association of minerals. At the same time a correlation of their composition with one of kimberlite ground mass ilmenite, from ilmenitebearing mantle xenoliths and in some cases with ilmenites, included in diamond, is marked.

Character of distribution Cr and Mg in investigated ilmenites and also the amount of hematite are similar those for ilmenite megacrists from productive and empty kimberlites. The group of ilmenite inclusions in mica from the Mir and Yubileynaya pipes contains 4.69-5.97 % of hematite on the average and occupies highly-Mg and highly-Cr a part of the diagram $\text{Cr}_2\text{O}_3\text{-MgO}$. Whereas its amount pipes in ilmenites from the Obnazhennaya pipe comes nearer to 10 % extreme allowable for ilmenites megacrists from diamondbearing and not diamondbearing. They are characterized by the lower average contents Mg and Cr.