

ORIGIN OF ISOFERROPLATINUM, IRIDOSMINE, AND CHROMITE IN THE KONDER MASSIF, ALDAN SHIELD

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The Konder massif contains the biggest PGE placer deposits (50 tones reserve and 60 tones resource). Isoferroplatinum composes near 95% of all PGM in the Konder placers. 216 new analyses of isoferroplatinum and 78 new analyses of iridosmine from placers in central part of dunite stock are presented. There are two opinions on the PGM origin: either due to magmatic processes or postmagmatic fluids and related recrystallizations of dunite minerals including PGM. The Rayleigh model of fractional crystallization, statistical parameters of mineral compositions, and microfractionation of elements during the dunite crystallization were used to reveal the nature of the PGE deposits. The constant ratios of logarithms of element concentrations in iridosmine, isoferroplatinum, chromite, aegirine- diopside, and phlogopite suggest that their origin is due to with fractional crystallization. Hystograms of Ir/Pd ratios in ferroplatinum and iridosmine show only one mode and are similar to the lognormal distribution. Variations of chromite composition can be described by the equation: $\ln \text{Cr}_2\text{O}_3 = 0,624 \ln \text{MgO} + 1,24$. The existence of microfractionation of elements during dunite crystallization also proves the magmatic origin of chromite. Chromite occurs as large crystals and interstitial grains, the latter are relatively impoverished in Cr and Mg. The authors thank RFBR for financial support (N 98-05-64536).