

The Lithosphere of the Nakyn kimberlite Field, Yakutia

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Up to present two kimberlite pipes are known within the Nakyn field - Botuobinskaya and Nyurbinskaya. The kimberlites are strong altered. They have extremely low content of chromites and picroilmenites, the rare occurrence of pyrope and high content of almandine garnets.

Diamonds from both pipes are morphologically almost identical. High diamond grade have been established in all kimberlite varieties. Diamonds of octahedral habit prevail. Distinctive prominent features of Nakyn kimberlite diamonds are the resorption which produced the rounded forms and the corrosion which caused development of etched surfaces and channels.

Mantle **xenoliths** in kimberlites of the Nakyn field are rare, whereas the fragments of metamorphic crustal rock are plentiful and make about 4-5 %. Among the mantle xenoliths prevails lherzolite association with garnet or with garnet and Cr-spinel, and biminerall and kyanite eclogites are also present. Mantle xenoliths are intensively changed by postmagmatic processes and represent mainly serpentinites with relicts of primary minerals.

The lower crustal xenoliths are mostly mafic granulites and consist of plagioclase, \pm garnet, \pm amphibole, \pm clinopyroxene, \pm orthopyroxene, \pm quartz, \pm rutile, \pm ilmenite, \pm apatite. Crustal xenoliths are fine- and medium-grained, have distinctly manifested cataclasis..

By a general similarity of the lithosphere composition of the Nakyn field with other regions of the Yakutian province a distinction in its geodynamic evolution, apparently define special feature characteristics of kimberlites, xenoliths and diamonds, and also, most likely, the high ratio of almandine to pyrope garnets in the concentrate of these pipes.