

REE DISTRIBUTION IN PETROCHEMICAL VARIETIES OF KIMBERLITE

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We summarize and analyze the reported data on the contents major oxides and REE in 99 kimberlite samples from kimberlite provinces of Russia, North America, Africa, and India. All the analyses are distributed over petrochemical varieties according to the populational petrochemical classification of kimberlites presented in this study. There is a significant correlation between the mean contents of major oxides and REE in all the petrochemical varieties. We have found that La and Pr correlate with CaO, and heavy REE with TiO₂ and FeO. The ratio between total LREE and total HREE contents correlates with CaO and inversely correlates with MgO. The carbonate varieties of kimberlite are LREE-rich, and magnesium varieties are HREE-rich. The components of eclogite paragenesis cause the depletion of kimberlites in LREE and produce inverse correlations of SiO₂, Al₂O₃, and Na₂O with LREE. In the authors' opinion, efficient solution of petrological problems demands comprehensive analysis of major oxides and REE.