

MANTLE XENOLITHS FROM BONDORÓ VOLCANIC COMPLEX

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The late Miocene Bondoró Volcanic Complex belongs to the Bakony-Balaton-Highland-Volcanic-Field (BBHVF) in the western part of the Pannonian Basin, Hungary

Mantle xenoliths brought to the surface by alkali basalts comprise sp-lherzolites, sp-harzburgites and pyroxenites. Two distinct types of textures have been found: fine-grained, equigranular textures that are predominantly foliated and coarse grained, protogranular textures which often exhibit layering of pyroxenes. A striking feature of some harzburgites is a noticeably high modal composition of opx. While phlogopite was only found in one sample, intergranular, percolating melt and melt pockets are common in Bondoró mantle xenoliths.

Whole rock Al_2O_3 and CaO contents range from 1.01 to 1.93 wt% and 0.71 to 3.20 wt%, respectively. Mineral analyzes of primary ol reveal Fo contents of 89.4 to 91.4. Cpx are predominantly Cr-Diopsides with $\text{En}_{48.1-51.9}\text{-Wo}_{43.4-47.7}\text{-Fs}_{3.2-6.1}$ and Mg# of 0.89 to 0.93. Opx compositions are in the range of $\text{En}_{87.8-90.3}\text{-Wo}_{0.8-2.3}\text{-Fs}_{8.1-9.9}$ with Mg# between 90 and 91.8. While Cr# in primary sp range from 12 to 21, secondary sp in melt pockets and melt intrusions reveal higher Cr# of 41 to 55.

Equilibration temperatures calculated using two-pyroxene-thermometer of BREY & KOEHLER (1990) are estimated to be in the range of 950 to 1100 °C at 1.5 GPa pressure. Our study shows that the lithospheric mantle underneath Bondoró is highly heterogeneous.

BREY, G.P., KOEHLER, T. (1990): *Journal of Petrology*, 31, 1353–1378.