

Contents of major, minor and trace elements in clinopyroxenes and clinoamphiboles of basanites, volcanoclastics, essexites, sodalitic syenites, and monzodiorites of the České středohoří Mts. has been determined using an electron microprobe and LA-ICP-MS techniques. Composition of clinopyroxenes corresponds to either diopside or augite and clinoamphiboles can be classified as kaersutite or pargasite. Some pyroxenes display pronounced sector zoning showing increased contents of Mg and Si in pyramidal sectors whereas prismatic sectors show Fe, Ti and Al enrichment. Chemical composition of both sectors corresponds to diopside. Growth zoning has been found in the samples from basanites and volcanoclastics. Grain cores display the chemistry of augite and towards the rim the chemical composition changes to diopside.

Samples have also been analyzed by powder and single crystal X-ray diffraction techniques. Samples of pyroxenes appear to be either pure or they contain negligible admixtures of phlogopite. Samples of amphiboles are also either without any admixtures or they show contamination by low amounts of diopside or augite, or phlogopite may rarely be encountered. Mutual relationship between the size of the unit cell parameters b and c and substitutions in M1,2,3 and A sites has been observed. Longer mean T-O bond lengths correlate with significant Al Si substitution in tetrahedra in both pyroxenes and amphiboles.