PRELIMINARY RESULTS OF MINERALOGIC AND GEOCHEMICAL PROPERTIES OF ZEOLITE OCCURRENCES IN AROUND OF KULU (KONYA) AND HAYMANA (ANKARA)

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Pyroclastic rocks which occurred from explosive volcanism and spread in Lower Miocene lacustrine and fluvial environments in the region. They contain various amounts of zeolite minerals, the formation of which is related to an interaction of volcanic material or detrital clays with saline alkaline lake water and groundwater. Some zeolite, e.g., cliniptilolite (mean Si/Al: 4.40), chabazite and erionite were determined in tuff/tuffite layeres while analcime, montmorillonite, illite, dolomite, calcite and rarely gypsum minerals were observed in clay leyers. Clinoptilolite and chabazite minerals observed as nearly pure minerals in tuffite layers. The zeolite minerals compose 10–95% of the rocks. Economically the deposit may be of great importance for Turkey, considering its enormous zeolitized outcrop area. Chabazites are mainly Na-chabazites and clinoptilolites are generally Ca-clinoptilolite. Erionites Structural Mg in erionites is mainly lower than 0.80 and Si/Al ratios is 3.76. Previously there is no study related to zeolite occurrences and deposits in the investigation area. Mineral formulae and mineral types of zeolite minerals were calculated by using of microprobe and EDS analyses. And also, it is known that erionite is dangerous for environmental health. The areal distribution of the zeolite minerals covers an area of about 40 km2. Erionite is a human and animal carcinogen and one of the most toxic minerals known. Erionite deposits have been reported in many countries and three villages of Cappadocia, Turkey; however, it is only in the area erionite occurrence is first determined in the region. The environmental exposure to erionite has not been demonstrated yet but there is three villages are settled on the zeolitic tuffs.

Keywords: zeolite, erionite, health