

## The occurrence of zeolites filling in vesicles and fractures of volcanic suite in NW of Saveh, Central Iran

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**Abstract:** The Eocene suite of volcanic rocks in Parandak area is located about 30 km NE of Saveh and is the host of different species of zeolites filling vesicles, amygdales and fractures. The elements forming for the formation of zeolites derived from the alteration of volcanic glass matrix and primary magmatic minerals. Based on their frequency, these zeolites are: natrolite, mesolite, tetranatrolite, scolecite, thomsonite, chabazite, analcime, stilbite, and epi-stilbite. In addition, other secondary related minerals are: chlorite/smectite, calcite (I), calcite (II), quartz and chalcedony. Development of zeolites in the basalts of the study area starts with lower Si/Al, Na-bearing and gradually grade into higher Si/Al Ca-bearing. It seems that the formation of zeolites might have occurred in two hydrothermal fluid stages. first stage, natrolite, mesolite, tetranatrolite and second stage, scolecite, thomsonite, chabazite, stilbite and epi-stilbite. It is estimated that the temperature of zeolite crystallization was less than 150 °C.

**Keywords:** Basalt; zeolites; hydrothermal alteration; Eocene; Parandak; Saveh.

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