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Phase transition of clinoptilolite to edingtonite and harmotome in the alkaline hydrothermal conditions

F. Tutti[*1], S. M. Kamyab[1], M. A. Barghi[1], A. Badiei[2]

1- Department of Geology, University of Tehran, Tehran, Iran
2- Department of Chemistry, University of Tehran, Tehran, Iran

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Abstract: In the present study, the phase transition of clinoptilolite, $16(Na, K)_6[Al_6Si_{30}O_{72}].20H_2O$, to barium zeolites, has been investigated in the alkaline hydrothermal conditions, at the presence of the barium bearing solutions, and the high temperature. Firstly, the primary sample collected from Aftar area, west of Semnan. Secondly, powdered and examined without purification. Clinoptilolite, as a natural zeolite, transformed to edingtonite, $BaAl_2Si_3O_{10}.4H_2O$, and harmotome, $BaAl_2Si_6O_{16}.6H_2O$, as the barium zeolites, in the influence of alkaline solutions, and the hydrothermal circumstances, arranged by the hydrothermal autoclaves. Finally, the processed products evaluated by the X-Ray graphs and SEM images.

Keywords: *Clinoptilolite; phase transformation; hydrothermal conditions; edingtonite; harmotome.*

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*Corresponding author, Tel.: (021) 61112623, Fax: (021) 66941623, E-mail: mahsa.kamyab@gmail.com