Thermal Behaviour of Two Iranian Natural Zeolites

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Abstract: Thermal behaviour of zeolites is an important property regarding their application in different fields. This property mainly is related to the presence of water molecules in their crystalline structures. It is known that zeolites give up water molecules upon heating, a phenomena which affects remaining water molecules and other elements in the framework. This effect mainly depends on the cation type, amount of cations present in the framework, heating rate, Al/ Si ratio and type of the framework. In most zeolites dehydration causes unit cell contraction and in some cases structural collapse will happen upon dehydration. In the latter situation the phenomena is an irreversible process. In this project two samples of zeolite form different deposits were investigated. The chemical analysis and unit cell formula of the sample were firstly determined. Different cationic forms were then prepared. The sample were all subjected to thermal analysis and the effect of ingoing cations were investigated.