

Mineralogical, Geochemical and industrial use of bentonites from Ferdows, Kashmar and Ghonabad in comparison with imported activated bentonites

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Abstract: Bentonites from Kashmar, Gonabad and Ferdows were studied and compared with imported types. Bentonites have a very wide range of industrial uses. Chemical and mineralogical composition of montmorillonite within the bentonite control its kind of application. Bentonites from Kashmar have the highest content of CaO and Al₂O₃ and K₂O. High expandibility, good adhesive property and having high content of Na₂O indicate that Ferdows bentonites are Na-type. Gonabad bentonites are Na-Ca-Type. Kashmar, Ferdows and Gonabad bentonites were treated for activation. In term of exchangeable cations, Kashmar bentonite is comparable with imported activated bentonites from China and Turkey. Determination of Ca and Na montmorillonite based on the X-Ray pattern is not very easy. The position of the first peak of montmorillonite were compared with Na₂O content of bentonites. If the first peak of montmorillonite is more than 7.3 degree and the Na₂O content of bentonite is more than 2 percent, therefore montmorillonite is Na-type. If the first peak is less than 7 degree and Na₂O content of bentonite is less than 1.5 percent, the montmorillonite is Ca-type.