

# Mineral composition and its characteristics of bentonite from Kerjian Area, Xinjiang Autonomous Region, China

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**Abstract:** Bentonite from Kerjian area is taken as the object of the study. In the experiment, XRD, FTIR, TG-DSC, SEM and etc., were used to analyze compositions, structures and physical and chemical properties of bentonite. On this basis, purification experiments by natural sedimentation method and high speed centrifugation purification were conducted. The purification effect was evaluated by measuring the performance indexes such as ethylene blue adsorbed, expansion capacity and X-ray diffraction analysis. Results show that the montmorillonite content of bentonite from kerjian is about 57%; ethylene blue adsorbed is  $22.39 \text{ g}\cdot 100\text{g}^{-1}$  with expansion capacity of  $10.75 \text{ mL}\cdot \text{g}^{-1}$ , and the ore belongs to middle-low grade sodium base bentonite ore. The thermal-stability of bentonite from kerjian has a good performance. The purification effect was good when the bentonite used to purification by two different methods and high speed centrifugation purification has a better performance. High-quality bentonite concentrate with  $49.58 \text{ g}\cdot 100\text{g}^{-1}$  of ethylene blue adsorbed is achieved by adopting high speed centrifugation purification.

**Keywords:** sodium base bentonite; property representation; purification; ethylene blue adsorbed