عنوان مقاله:

Synthesis of Linde Type A Zeolites Based on Silica Gel for Petrochemical Industry

محل انتشار:

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خلاصه مقاله:

The demand for various types of zeolites in the oil and gas industry is associated with their high ion exchange and adsorption properties. This study is aimed to identify the regularities of the process of obtaining zeolite precursors from waste silica gel and industrial aluminium hydroxide since water glass and aluminate solution are the initial hydrogel components for the hydrothermal synthesis of zeolites. In addition, the process of hydrothermal synthesis of zeolites was investigated, namely, the effect of the molar ratio of SiO۲ :Al۲O۳ between hydrogel components on the structure and type of zeolite produced was determined. Identification of phases and study of the morphology of initial substances and obtained samples were carried out using X-ray diffraction and scanning electron microscopy methods. For the sample representing the monophase of LTA zeolite, the value of ion exchange capacity for Ca۲+ ion and the particle size of the main fraction were determined to be ۵۵۰ mEq/۱۰۰g and less than ۱۰ μm, respectively.

کلمات کلیدی:

Zeolite, water glass, aluminate solution, Silica gel, detergents, Catalysts