
Iron Influence in the Aluminosilicate Zeolites Synthesis

E. I. Basaldella¹, R. M. Torres Sánchez and J. C. Tara¹

¹ Centro de Investigaciones y Desarrollo en Procesos Catalíticos (CINDECA), La Plata, Argentina

² Centro de Tecnología de Recursos Minerales y Cerámica (CETMIC) CC49, 1897 M.B. Gonnet, Argentina

Abstract: The level of Fe impurities in 2 well-crystallized kaolinites was modified (by addition or chemical removal treatment) to analyze the Fe influence in the aluminosilicate zeolite synthesis.

The original and modified clays were heat-treated in order to change their reactivity for zeolite A synthesis, and their thermal transformations were studied by X-ray diffraction (XRD), determination of point of zero charge (PZC) and infrared (IR) techniques. It was established that many structural changes took place, regardless of the Fe clay content. Furthermore, the presence of Fe species in alkaline solution or in the solid phase did not seem to greatly influence the zeolite crystallization, because only small differences in the conversion values among samples with different Fe contents were registered. The crystallization process seemed to be related mainly to Al coordination changes produced by the thermal and Fe removal treatments used.

Key Words: Al Coordination • Iron Influence • Kaolin • Zeolite Synthesis

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