

## **Effect of hydrothermal treatment on the structure and acid properties of the surface of molded gamma-aluminum oxide**

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### **Abstract**

© 2014 Pleiades Publishing, Ltd. Mechanism of the hydrothermal modification of gamma-aluminum oxide was studied. A set of physicochemical methods demonstrated that boehmite crystals are formed in macropores (>500 nm) by the dissolution/precipitation mechanism, whereas in mesopores (<20 nm), rehydration of primary blocks of aluminum oxide occurs from the surface into the bulk. As a result of the phase transition, aggregates of primary oxide blocks are dispersed, which leads, at a certain treatment duration, to an increase in the specific surface area. In this case, the content of acid centers also increases according to the results of a temperature-programmed desorption of ammonia, as also does the catalytic activity in the reaction of skeletal isomerization of n-butenes.

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