

Conversion of pentane-hexane fraction on the Zr-containing catalyst systems

© Alexey A. Gritsienko,* Ilia Sergeevich Annenkov, and Tatiana V. Aniskova[†]

The Department of Petrochemicals and Technological Safety. Institute of Chemistry.

N.G. Chernyshevsky Saratov National Research State University. Astrakhanskaya St., 83,

Building 1. Saratov, 410012. Saratov Region. Russia.

Phone: +7 (917) 217-08-11. E-mail: aniskovatv@mail.ru

*Supervising author; [†]Corresponding author

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Abstract

The tightening environmental standards for motor fuels on the one hand and the rapid growth of high quality motor fuel consumption on the other hand poses the problem of refining to reduce the amount of aromatics and in particular benzene in commercial products. Currently recycling oil is essential to the overall petroleum refining complex. To increase the depth of processing, and most important for the production of high octane components of motor fuels meeting the Euro-5 requirements, different processing variants hydrotreated fractions, among which the most modern process is isomerization. And because of this isomerization – as a process of producing components of gasoline with a high octane number and a low aromatic content became widespread.

This work is devoted to the research activity of the two catalyst systems containing zirconium in its composition, in the conversion of pentane-hexane fraction, which is the raw material of isomerization process in refineries. The study was conducted in a laboratory flow-type reactor with a fixed catalyst bed. Analysis of the gaseous and liquid products of transformation was performed by gas-liquid chromatography.

On the basis of analysis of experimental data, we can conclude that the two systems studied most active catalyst in the isomerization of pentane-hexane fraction is a system based on zeolite. When used which is possible to obtain liquid products with a low content of unbranched alkanes and high in isoparaffins that have high octane numbers and are safe components of motor fuels from an environmental point of view.

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