
The work of composite authors is dedicated to invention and widespread introduction of isomerization technology; it is the actual theme in relation to introduction of world ecological requirements for motor gasolines.

Toughening of operational and ecological requirements for motor gasolines led Russian refinery industry to necessity of introducing new technologies, which allowed to obtain environmentally friendly non-aromatic motor gasoline components.

Isomerization process became the most popular among all the processes of obtaining gasoline components over the last years. Its appeal is determined by available feed base, absence of benzene and other aromatic hydrocarbons in product, possibility of producing gasoline component with high octane number up to 93 RON, that allows to adjust motor gasoline octane number depending on fractional composition, and the lowest OPEX among processes for production of high-octane non-aromatic motor gasoline components.

Russia traditionally was inferior to the leading countries in the field of production high quality motor gasolines, particularly of isomerate containing in gasoline pool. For years in Russian oil refining transition to high-quality motor gasolines was restrained by underdevelopment of secondary processes, which allow to obtain environmentally friendly high-octane non-aromatic gasoline components. This fact depends on both lagging in regulatory framework and absence of Russian world class technology.
That’s why well-timed development of Russian low-temperature isomerization technology became the event with large practical relevance.

The work, which is completed by composite authors, has high scientific level. Extensive basic researches in the kinetics of catalytic reactions of paraffinic and naphthenic C5-C6 hydrocarbon isomerization, benzene hydrogenation and secondary reactions were provided, new dependences of catalytic properties of inorganic materials from physicochemical structure were determined. Scientific basis of sulfated systems was created.

The development of fundamentally new high-activity non-chlorinated oxide catalyst SI-2, which allows to increase substantially the stability of process, became the result of carried out researches. Unquestionable advantage of new catalyst is a possibility to complete recovery catalyst activity after skip-up of the catalytic poisons as well as high performances of activity, selectivity and product yield.

High economical appeal of Isomalk process, which allows to reduce capital and operating costs as well as helps to prevent capital outflow abroad that is inevitable by foreign technologies purchase, should be emphasized.

According to our reckoning, the work has all advantages, which allow to recommend awarding this work Russian Federation Government Prize in Science and Technology in 2011.

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