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ONLINE ISSN : 1349-273X

PRINT ISSN : 1346-8804

Journal of the Japan Petroleum Institute

Vol. 50 (2007) , No. 6 pp.335-339

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Dehydroisomerization of Butane into Isobutene over Platinum-loaded MFI-type Ferrisilicate Catalysts

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(Received: April 16, 2007)

The dehydroisomerization of butane to isobutene was investigated over platinum-loaded MFI-type ferrisilicate catalysts with various silicon-to-iron ratios. The ratios of silicon to iron were observed to affect the yield of isobutene. The highest yield (*ca.* 15%) was obtained with a ratio of 100, but higher ratios gave lower yields of isobutene caused by the decomposition of butane and butenes. The ratios of silicon to iron did not affect the conversion of butenes over the ferrisilicate catalysts, indicating that the platinum loaded on the ferrisilicate is responsible for the decomposition of butane and butenes. This is supported by the observation that the particle size of platinum on ferrisilicate became smaller with lower ratios of silicon to iron.

Keywords: [Butane dehydroisomerization](#), [MFI type ferrisilicate](#), [Platinum loading](#), [Butene isomerization](#)

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To cite this article:

Hideo Nagata, Haruki Mori and Masahiro Kishida, *Journal of the Japan Petroleum Institute*, Vol. **50**, No. 6, p.335 (2007) .

doi:10.1627/jpi.50.335

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