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Mechanism of the Acid Catalyzed Cis-trans Isomerization of 1,2-diarylcyclopropanes
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Homogeneous Hydrogenation and Isomerization of 1-alkenes by Alkyl Transition Metal Complexes

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The Thermal Isomerization of 1-methylcyclobutene
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Skeletal

Isomerization of 1-pentene on H-ZSM-22 Catalyst
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Thermodynamic Properties Of Isomerization

Reactions Oct 15 2019 This handbook presents the thermodynamic functions obtained primarily from the results of equilibrium studies of isomerization reactions and by measurements of the heats of combustion of isomer groups by the calorimetric method.

Base-catalyzed Isomerization of 1, 2-diols Oct 27 2020

The Isomerization of Some 1-arylaziridines Feb 17 2020
Rotational

Isomerization in 1,2-disubstituted Ethanes, Succinonitrile Sep 06 2021

Influence of Synthesis Parameters on the Properties of ZSM-5 & on Their Catalytic Activity for 1-butene Isomerization Jul 24 2020

The synthesis and preparation of active and selective zeolite catalysts (H-ZSM-5 and H-ZSM-22) for the skeletal isomerization reaction of 1-butene to iso-butene were investigated.H-

ZSM-5 zeolite catalysts were synthesized by varying the synthesis time (3, 6, 12, 24, 48 and 72 h), stirring mode (static, rotational), the initial SiO₂/Al₂O₃ ratio (15, 30, 70) and SiO₂/TPABr (Tetrapropylammonium bromide) ratio (3,3; 5,5; 12,5) of the hydrogel. A synthesis work for H-ZSM-22 type zeolite materials was also carried out both in static and rotational mode. Catalytic activity tests were performed in a constructed fixed bed tubular quartz reactor system at 440 and 375°C at weight hourly space velocities (WHSV) of 22 and 11 h⁻¹. The X-Ray Powder Diffraction

patterns and Scanning Electron Microscopy images of ZSM-5 zeolites showed that the particle size and phase purity of ZSM-5 increased with increase in synthesis time. The XRD pattern of Na-ZSM-5 zeolite synthesized by the static mode showed a higher degree of crystallization than the rotational synthesis. The sample synthesized with high Al content in the initial hydrogel (SiO₂/Al₂O₃=15) showed less crystallization than the samples synthesized with low Al content. Increasing Si/Al ratio in the synthesis hydrogel resulted in an increase in the surface area (533

m²/g). TPABr content was found to be an important factor in the crystallization of ZSM-5 zeolites. Lowest TPABr content resulted in an amorphous phase. Increase in the organic cation content enhanced the crystallization, and larger size ZSM-5 crystals with higher phase purity and surface area were achieved. The crystal phase obtained from the hydrogel which was prepared for the synthesis of ZSM-22, were affected significantly by the synthesis mode. The catalysts prepared were tested for isomerization of 1-butene at 440°C and 22h⁻¹ WHSV. It was found that the

hydrogel composition highly influenced the catalytic properties of H-ZSM-5 giving a range of conversion and selectivity for iso-butene. Al rich zeolite (initial $\text{SiO}_2/\text{Al}_2\text{O}_3=15$) showed very low selectivity (2%). This was attributed to the higher acidity of this zeolite. In contrast the samples having medium and high $\text{SiO}_2/\text{Al}_2\text{O}_3$ ratios 30 and 70 gave high selectivity (52% and 56% respectively) and yield (26% and 28% respectively) under the same reaction conditions. The sample with initial $\text{SiO}_2/\text{Al}_2\text{O}_3=30$, $\text{SiO}_2/\text{TPABr}= 3.3$ gave the highest yield to iso-butene (28%) under the same reaction

conditions (440°C, 2h-1). Reaction at a lower temperature (375°C) increased iso-butene yield to 32% by suppressing the byproduct formation. Decreasing the WHSV (11 h-1) increased conversion from 40% to 48% and giving yield of 32% iso-butene. The test for long time on stream (24 h) to assess catalytic deactivation, showed slight increase in the yield of iso-butene (33%).

Electrochemical Investigations of the Isomerization of 1-Phenyl-1-hexyne to 1-Phenyl-1,2-hexadiene Jun 15 2022

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Studies of the Thermal Isomerization of 1-alken-5-yne and 1,2,5-alkatrienes Aug 17 2022

Isomerization of 1-hexene Over Pt/[gamma]-Al₂O₃ Catalyst at Subcritical and Supercritical Conditions Feb 28 2021

Effects of Metal Cation on the Skeletal Isomerization of N-

Butene Over ZSM-5 and Ferrierite May 22 2020 The effects of metal cation on the skeletal isomerization of 1-butene to isobutene was investigated. H-ZSM-5 was synthesized with the initial SiO₂/Al₂O₃ ratio of 30. MFI-50, MFI-90 and Ferrierite zeolite catalysts were commercially supplied. The zeolites were ion exchanged with cobalt, nickel, zinc, copper (magnesium and manganese only for synthesized ZSM-5) salts, impregnated with cobalt, in order to change their acidity. The H-ZSM-5 zeolite was additionally ion exchanged with cobalt using different metal loading amounts.

Then, the catalysts were tested for their activity in a fixed bed tubular quartz reactor at 375°C at weight hourly space velocity (WHSV) of 22 h⁻¹. Scanning Electron Microscopy images and X-Ray Powder Diffraction patterns of the zeolites showed that their crystallinity was not affected with ion exchange, even with the increase in the loading amount (2.68 w%). But with the impregnation method, the intensity of the characteristic peaks for zeolites were decreased. Impregnating the zeolite also resulted in a decrease in the surface area. The acidity measurements of the catalysts were

made by IR spectroscopy with pyridine adsorption method. The tests showed that acidities of the catalysts were changed with ion exchange and impregnation of metal ions. The catalytic tests for H-ZSM-5 showed that different metal loadings with ion exchange lowered the yield for isobutene. H-ZSM-5 showed a conversion of 59 % and 33.2 % yield for isobutene. The lowest yield was obtained from magnesium and manganese with 12.2 % and 9.6 %, respectively. The H-ZSM-5 zeolite catalysts were also tested for Co ion exchanged with different amounts (2.68, 1.45, 0.63

and 0.23 w%). 1.45 w% loaded catalyst showed the best activity for the reaction with a conversion of 59.1 %, and yield for isobutene 24.5 %. Both increased and decreased loading decreased yield 17.8 %, 2.5 % and 0.48 %, respectively. H-MFI-50 and its modified forms showed high conversions compared to H-ZSM-5. But low yields and selectivities were obtained. H-MFI-50 showed the highest conversion with 82.7 % and yield of 21.5 %. Co-MFI-50 showed similar conversion as the parent zeolite with 82.7 %, and yield of 17.9 %. The lowest conversion is obtained by Cu-

MFI-50 with 76.5 % and yield for isobutene was 21 %. H-MFI-90 and its modified samples showed alike conversions around 76.1 %, but Cu loading decreased conversion as low as 65.9 %. Like MFI-50, the yield of isobutene was also affected by the metal ion exchanging. H-MFI-90 showed 24.8 % yield of isobutene. However, Co-MFI-90 had a yield of 27.6 %. The worst yield was obtained from copper loaded catalyst with 20.4 %. As would be expected, changing the metal ion loaded to ferrierite also changed the activity of the catalyst. The highest conversion

was obtained by H-FER with 57 % and a yield of 39 %. Co-FER and Ni-FER showed similar conversions 52 % and 53 %, respectively. Zn-FER and Cu-FER showed the lowest conversions with 47 % and 45 %, respectively. Yields for the metal loaded catalysts lowered to 27 %. Impregnation with Co, severely decreased the activity of the catalysts both compared to H form and ion exchanged form of the catalysts. Impregnated H-ZSM-5, H-MFI-50, H-MFI-90 and ferrierite showed conversions of 48.1 %, 66.8 %, 60.7 % and 45.4 %, respectively. The yields for isobutene were 11 %, 13.8 %,

15.5 % and 13.7 %, respectively.

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Thermal Isomerization of 1,2-

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[Analysis of Butene-1](#)

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The Nature of the Active Site for the Isomerization of 1-butene Over

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The F-19 high resolution spectrum of 1,1-difluorocyclohexane was observed at temperatures from -93 to +40 C. The rate of conformational isomerization as determined by a complete line shape analysis method for temperatures from -71 to +6 C. The activation parameters were determined for 1:1 v/v solutions in CS₂

and CFC13 at the coalescence temperature of 228 K. In the low temperature spectra of the CS2 solution, the resonance of the equatorial fluorine is shifted 15.64 ppm downfield from the axial. At temperatures above -10 C, neglect of the H-F coupling in the line shape analysis produces systematic errors in the apparent exchange rate. (Author).

The Kinetics of the Bromine Photocatalyzed Positional Bond Isomerization of 1-butene to 2-butenes at Low Pressures ... Oct 07 2021
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Modelling of 1-pentene Skeletal Isomerization and Side Reactions
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Skeletal Isomerization of 1-pentene on H-ZSM-22 Catalyst
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Further Investigation on Synthesis and Isomerization of 1,4-dioxadienes and 1,4-dithiadienes Jan 10 2022

The Isomerization of 1-p-Ethoxybenzoylaziridine Nov 20 2022

Catalytic Hydrogenation and Isomerization of 1-butene Apr 13 2022

A. The Base-catalyzed Isomerization and Rearrangement of 4-phenyl-1-butene. B. The Elucidation of the Structure of the Transition State in the Ortho-claisen Rearrangement
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The isomerization of the 1-bromo-1-propenes and the characterization of the 1,2-dibromo-1-propenes Aug 05 2021

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