CLAIMS:

1. A process for the conversion of a non-equilibrium C_8-aromatic feedstock comprising contacting the feedstock with a catalyst bed, comprising particles of an unbound zeolitic aluminosilicate having an particle intrusion pore volume of at least 0.65 cc/gram and a particle crystallinity gradient increasing in the proportion of crystallinity from a low-crystallinity inner portion to a high-crystallinity outer portion, in a conversion zone at conversion conditions comprising a temperature of from 340°C. to 500°C, a pressure of from 100 kPa to 5 MPa, and a mass hourly space velocity of from 2 to 50 hr^{-1} in the presence of hydrogen to convert ethylbenzene with low xylene loss and obtain an isomerized product comprising a higher proportion of at least one xylene isomer than in the feedstock.

2. The process of claim 1 wherein the particle intrusion pore volume is at least 0.7 cc/gram.

3. The process of claim 1 wherein an inner portion of the catalyst particle is defined as the portion of the particle corresponding to the volume enclosed by half of the radius of the particle.

4. The process of claim 1 wherein the inner portion of the catalyst particle is defined as the inner 50 % of the volume of the catalyst particle.

5. The process of one of claim 3 or 4 wherein the relative crystallinity of the inner portion of the catalyst particle is from 10 to 50%.

6. The process of one of claim 3 or 4 wherein the relative crystallinity of the outer portion of the catalyst particle is from 90 to 100%.

7. The process of one of claim 1 or 2 wherein the catalyst has a spherical configuration.

8. The process of one of claim 7 wherein the spherical configuration of the catalyst comprises characteristics of oil dropping.

9. The process of one of claim 1 or 2 wherein the % xylene loss is less than 0.02% per % ethylbenzene conversion.

CLAIMS

1. A process for the conversion of a non-equilibrium C_8-aromatic feedstock comprising contacting the feedstock with a catalyst bed, comprising particles of an unbound zeolitic aluminosilicate comprising an MFI zeolite and one or more metals selected from Groups VIII, Group VIB, and Group VIIB, having a particle intrusion pore volume of at least 0.65 cc/gram and a particle crystallinity gradient increasing in the proportion of crystallinity from an inner portion having a relative crystallinity from about 10 to about 50 weight percent to a high-crystallinity outer portion having a relative crystallinity from about 90 to about 100 weight percent, in a conversion zone at isomerization conditions comprising a temperature of from about 340° C. to 500° C., a pressure of from 100 kPa to 5 MPa, and a mass hourly space velocity of from about 2 to 50 hr^1 in the presence of hydrogen to convert ethylbenzene with low xylene loss and obtain an isomerized product comprising a higher proportion of at least one xylene isomer than in the feedstock.

2. The process of claim 1 wherein the particle intrusion pore volume is at least about 0.7 cc/gram.

3. The process of claim 1 wherein the inner portion of the catalyst particle is defined as the inner 50% of the volume of the particle.

4. The process of claim 1 wherein the catalyst has a spherical configuration.

5. The process of claim 4 wherein the spherical configuration of the catalyst comprises characteristics of oil dropping.

6. The process of claim 1 wherein the xylene loss is less than about 0.02% per % ethylbenzene conversion.

7. The process of claim 1 further comprising a subsequent xylene-isomerization zone.