90-291986/39 E19 H04 J04 (E32 J01) SHEL 23.03.89
SHELL INT RES MIJ BV *EP -389-041-A
23.03.89-GB-006726 (26.09.90) B01j-21/06 B01j-37

Titania dough contg. e.g. alkanolamine - useful for prepn. of extruded catalyst carrier for e.g. hydrogenation or hydrocarbon conversion

C90-126000 R(AT BE CH DE DK ES FR GB GR IT LI LU NL SE)
E(10-B3B, 10-J2B3, 10-J2D, 32-A2, 35-K1) H(4-E5, 4-E8, 4-F3, 6-C3) J(1-E2D, 4-E3)

Prepn. of a shapeable dough comprises mixing and kneading a particulate titania with water and an alkanolamine, ammonia or ammonia-releasing cpd. The mixt. has a total solids content of 50-85 wt.%. The alkanolamine or ammonia is present as 0.5-20 wt.% of the total mixt.

USE/ADVANTAGE

Uses of titania extrudates as catalyst carriers for use in hydrocarbon conversion, in hydrogenation, in hydrocarbon synthesis or in purification of exhaust gases are all claimed. Use of ammonia cpds. aids extrudation of titania.

SPECIFICALLY CLAIMED

Mixt. comprises a total solids content of 50-85, more pref. 60-75 wt.%, alkanolamine or ammonia as 2-15, pref. 3-10 wt.% 2-10C mono-, di- or tri-alkanolamine, pref. monoethanolamine (MEA).

50 wt.% at most of silica and/or Zr dioxide and/or a zeolite, pref. a Y-zeolite, is admixed.

Titania is anatase and/or rutile.

In the pref. process dough is extruded, dried and calcined to a final temp. of 300-1000°C. Pref. calcination is at 450-750, more pref. 425-725°C.

EXAMPLE

A mixt. was prepd. from 50g. water, 7.5g. MEA and 150g titania (Degussa). 111g. zeolite Y (silica/alumina ratio = 40) and 50g. water were added and the resultant mixture smoothly extruded. The extrudates were dried at 120°C. and calcined at 500°C. for 2 hours.

The product had a BET surface area of 246 m^2/g.; medium pore dia. of 32 nm; pore vol. of 0.33 ml./g.; and a bulk crushing strength of 0.90 MPa. 1.6 mm. extrudates prepd. as above were impregnated with a soln. of H_2PtCl_6 so as to give, after reduction with H_2, a 0.6 wt.% Pt content on titania. This catalyst was used for the hydrogenation of a hydrotreated light cycle oil contg. 273 mmol monoaromatics/100 g. (90% b.pt. = 351°C., S = 112 ppm by wt., N = 7.6 ppm by wt.). The treatment was carried out at 50 bar press. and up to 340°C. The monoaromatics content was found to be reduced to about 70 mmol/100g.(7pp2116SLDwgNo0/0).

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