

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 January 2009 (08.01.2009)

PCT

(10) International Publication Number
WO 2009/003722 A1

(51) International Patent Classification:

B01J 37/02 (2006.01) **B01J 21/08** (2006.01)
B01J 23/04 (2006.01) **B01J 37/06** (2006.01)
C07C 51/353 (2006.01) **B01J 35/10** (2006.01)

(21) International Application Number:

PCT/EP2008/005509

(22) International Filing Date: 4 July 2008 (04.07.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/958,341 5 July 2007 (05.07.2007) US

(71) Applicant (for all designated States except US): **GRACE GMBH & CO. KG** [DE/DE]; In der Hollerhecke 1, 67545 Worms (DE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **MORELL, Heiko** [DE/DE]; Waldstrasse 11, 64839 Münster-Altheim (DE).

(74) Agents: **VON KAMEKE, Allard** et al.; Uexküll & Stolberg, Beselerstrasse 4, 22607 Hamburg (DE).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(54) Title: METHOD FOR MAKING INORGANIC OXIDE SUPPORTED CATALYSTS

(57) Abstract: A method for making an inorganic oxide supported catalyst involves impregnating an inorganic oxide component with a catalytic metal using an aqueous, acid bath. More specifically, the method involves forming and washing an inorganic oxide component, such as a silica gel or a silica co-gel, for example a silica-zirconia co-gel. The washed inorganic oxide component is then contacted with the acidic bath to effect the impregnation with the catalytic metal, such as cesium, to form an activated inorganic oxide component. Subsequently, the activated component is dried to form the catalyst. The resulting catalysts possess increased surface area, which is beneficial with respect to accessibility and amount of catalytically active sites.



WO 2009/003722 A1