(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 March 2003 (27.03.2003)

PCT

(10) International Publication Number
WO 03/024592 A3

(51) International Patent Classification[7]: B01J 23/38, 21/18, 35/10

(21) International Application Number: PCT/US02/26880

(22) International Filing Date: 23 August 2002 (23.08.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/954,235 17 September 2001 (17.09.2001) US

(71) Applicant: ENGELHARD CORPORATION [US/US]; 101 Wood Avenue, P.O. Box 770, Iselin, NJ 08830-0770 (US).

(72) Inventors: CHEN, Jian, Ping; 835 Silverberry Lane, Hudson, OH 44236 (US). PENQUITE, Charles, R.; 5420 Pepperwood Circle, Erie, PA 16506 (US). THAKUR, Deepak, S.; 7070 Longview Drive, Solon, OH 44139 (US).

(74) Agents: HAMPILOS, Gus, T. et al.; Engelhard Corporation, 101 Wood Avenue, P.O. Box 770, Iselin, NJ 08830-0770 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations*

Published:
— *with international search report*

(88) Date of publication of the international search report:
20 November 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 03/024592 A3

(54) Title: IMPROVED PRECIOUS METAL CATALYST FOR DEBENZYLATION

(57) Abstract: One aspect of the invention relates to catalyst composite containing a metal catalyst and a specifically defined carbon support containing a carbonaceous material. For example, the carbon support may have a total pore surface area of about 800 m^2/g or more and about 2,000 m^2/g or less where about 20% or less of the total pore surface area is micro pore surface area. Alternatively the carbon support may have a total pore volume of at least about 0.75 cc/g where about 15% or less of the total pore volume is micro pore volume. In yet another aspect of the invention, the carbon support may have a phosphorus content of about 0.75% by weight or less. In still yet another aspect of the invention, methods of making and using the catalyst composite are disclosed.