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(21) International Application Number: PCT/US99/09809 (22) International Filing Date: 4 May 1999 (04.05.99) (30) Priority Data: 60/084,376 5 May 1998 (05.05.98) US (71) Applicant: EXXON CHEMICAL PATENTS INC. [US/US]; 5200 Bayway Drive, Baytown, TX 77520-5200 (US). (72) Inventors: CHEN, Tan-Jen; 5615 Lofty Magnolia Court, Kingwood, TX 77345 (US). JANSSEN, Marcel, J., G.; Domeinstraat 84, B-3010 Kessel-Lo (BE). MARTENS, Luc, R., M.; Prinsenbeemdlaan 3, B-1860 Meise (BE). MERTENS, Machteld, M.; Beringstraat 72, B-3190 Boort- meerbeek (BE). RUZISKA, Philip, A.; 2010 Wind Creek Drive, Kingwood, TX 77345 (US). ZHAO, Lynn, L.; 301 Tri-City Beach Road #34, Baytown, TX 77520 (US). VER- DULIN, Johannes, P. (deceased). (74) Agents: ZBORAY, James, A. et al.; Exxon Chemical Company, P.O. Box 2149, Baytown, TX 77522-2149 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: HYDROCARBON CONVERSION TO PROPYLENE WITH HIGH SILICA MEDIUM PORE ZEOLITE CATALYSTS (57) Abstract The invention provides a method for converting a hydrocarbon feedstock to propylene comprising: contacting an olefinic hydrocarbon feedstock boiling in the naphtha range with a catalyst comprising a zeolitic catalyst selected from the group consisting of medium pore zeolites having a ratio of silica to alumina above 200 and pore diameter less than 0.7 nm under cracking conditions to selectively produce propylene. The preferred catalyst comprises a zeolite having an 8, 10, or 12 membered ring pore structure. The preferred catalysts are selected from the group consisting of zeolites from the families: MFI, MEL, MTW, TON, MTT, FER, MFS, and the zeolites ZSM-21, ZSM-38 and ZSM-48. Preferably the method is carried out to produce propylene with greater than 50 % specificity, more preferably, the propylene to butylene ratio is at least 2:1 or a propylene to ethylene ratio of at least 4:1. The olefinic hydrocarbon feedstock consists essentially of hydrocarbons boiling within the range of 18° to 220 °C (65 °F to 430 °F). The olefinic hydrocarbon feedstock comprises from about 10 wt.% to about 70 wt.% olefins. Preferably the olefinic hydrocarbon feedstock comprises from about 5 wt.% to about 35 wt.% paraffins. The catalyst is contacted in the range in the range of 400 °C to 700 °C, a weight hourly space velocity ("WHSV") of 1 to 1,000 hr⁻¹ and a pressure of 0.1 to 30 atm. absolute.		