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| <b>(51) International Patent Classification 6 :</b><br><b>C10G 35/095, B01J 29/64</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 99/32578</b><br><b>(43) International Publication Date:</b> 1 July 1999 (01.07.99)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>(21) International Application Number:</b> PCT/US98/23683<br><b>(22) International Filing Date:</b> 6 November 1998 (06.11.98)<br><br><b>(30) Priority Data:</b><br>08/995,588 22 December 1997 (22.12.97) US<br><br><b>(71) Applicants:</b> CHEVRON CHEMICAL COMPANY LLC [US/US]; 555 Market Street, San Francisco, CA 94105 (US). IDEMITSU KOSAN CO., LTD. [JP/JP]; Kokusai Building, 9th floor, 1-1, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100 (JP).<br><br><b>(72) Inventors:</b> INNES, Robert, A.; 15 Shannon Lane, San Rafael, CA 94901 (US). SUGIMOTO, Michio; 1280, Kamiizumi, Sodegaura-shi, Chiba-ken (JP). FUKUNAGA, Tetsuya; 1280, Kamiizumi, Sodegaura-shi, Chiba-ken (JP).<br><br><b>(74) Agents:</b> DeJONGHE, Thomas, G. et al.; Chevron Corporation, Law Dept., P.O. Box 7141, San Francisco, CA 94120-7141 (US). |           | <b>(81) Designated States:</b> 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, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, 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).<br><br><b>Published</b><br><i>With international search report.</i> |
| <b>(54) Title:</b> MONOFUNCTIONAL REFORMING CATALYST CONTAINING BISMUTH<br><br><b>(57) Abstract</b><br><br>A catalytic reforming process is disclosed using a catalyst containing a Group VIII metal, low amounts of bismuth, and a zeolite L. The catalyst is a non-acidic, monofunctional reforming catalyst. Preferably, the catalyst contains one or more halogens. Preferably, the feed includes C <sub>8</sub> hydrocarbons. The addition of small amounts of bismuth increase or substantially maintain catalyst stability. Unexpectedly low dealkylation rates are achieved using the catalyst while reforming to produce aromatics, especially to produce xylenes such as paraxylene.                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |