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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: B01D 3/34, C07C 41/00, 43/00, B01J 8/04, 10/00	A1	(11) International Publication Number: WO 97/28874 (43) International Publication Date: 14 August 1997 (14.08.97)
(21) International Application Number: PCT/US96/20896 (22) International Filing Date: 31 December 1996 (31.12.96) (30) Priority Data: 08/600,251 12 February 1996 (12.02.96) US (71) Applicant: CHEMICAL RESEARCH & LICENSING COMPANY [US/US]; 10100 Bay Area Boulevard, Pasadena, TX 77507 (US). (72) Inventors: HEARN, Dennis; 10100 Bay Area Boulevard, Pasadena, TX 77507 (US). GILDERT, Gary, R.; 10100 Bay Area Boulevard, Pasadena, TX 77507 (US). GROTEN, Willibrord, A.; 10100 Bay Area Boulevard, Pasadena, TX 77507 (US). (74) Agent: JOHNSON, Kenneth, H.; P.O. Box 630708, Houston, TX 77263 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: ETHERIFICATION-HYDROGENATION PROCESS**(57) Abstract**

A process for removing dienes from etherification uses a hydrogenation zone (24) in the reactor distillation column (20) above the etherification zone (22). MTBE is produced and the unreacted C4 stream is also subjected to selected hydrogenation of the butadiene contained in the C4 feed stream. The C4 stream is introduced via line (101) and methanol is introduced via line (102) which is combined in flow line (104) and subsequently enters the distillation column (20) via line (103) wherein the C4 stream is contacted with methanol in the etherification zone (22) where the MTBE is distilled downward. The unreacted C4's then are subjected to selective hydrogenation in the hydrogenation zone (24) wherein butadiene in the overhead raffinate (108) is reduced by over 90 %. The hydrotreated C4's are thus suitable for cold acid alkylation or other use wherein butadiene is harmful.

