

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
28 April 2011 (28.04.2011)

(10) International Publication Number
WO 2011/049805 A2

PCT

(51) International Patent Classification:

C07C 2/58 (2006.01) **B01J 31/02** (2006.01)
C07C 9/00 (2006.01)

(21) International Application Number:

PCT/US2010/052591

(22) International Filing Date:

14 October 2010 (14.10.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/581,269 19 October 2009 (19.10.2009) US

(71) Applicant (for all designated States except US):
CHEVRON U.S.A. INC. [US/US]; 6001 Bollinger
Canyon Road, San Ramon, California 94583 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ZHAN, Bi-Zeng**
[CA/US]; 545 Pierce Street, #3301, Albany, California
94706 (US). **LACHEEN, Howard S.** [US/US]; 31 Idaho
Street, Richmond, California 94801 (US). **TIMKEN,**
Hye-Kyung C. [US/US]; 710 Pomona Avenue, Albany,
California 94706 (US).

(74) Agents: **ROTH, Steven, H.** et al.; Chevron Corporation,
Law Department, Post Office Box 6006, San Ramon, CA
94583-0806 (US).

(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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of
the earlier application (Rule 4.17(iii))

Published:

- without international search report and to be republished
upon receipt of that report (Rule 48.2(g))

(54) Title: HYDROISOMERIZATION AND SELECTIVE HYDROGENATION OF FEEDSTOCK IN IONIC LIQUID-CATALYZED ALKYLATION

(57) Abstract: A process for producing alkylate comprising contacting a first hydrocarbon stream comprising at least one olefin having from 2 to 6 carbon atoms which contains 1,3-butadiene and 1-butene with a hydroisomerization catalyst in the presence of hydrogen under conditions favoring the simultaneous selective hydrogenation of 1,3-butadiene to butenes and the isomerization of 1-butene to 2-butene and contacting the resulting stream and a second hydrocarbon stream comprising at least one isoparaffin having from 3 to 6 carbon atoms with an acidic ionic liquid catalyst under alkylation conditions to produce an alkylate is disclosed.



WO 2011/049805 A2