

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/080301 A1

(51) International Patent Classification⁷: **C07C 2/32**

(21) International Application Number:
PCT/US2005/005437

(22) International Filing Date: 18 February 2005 (18.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/782,554 19 February 2004 (19.02.2004) US

(71) Applicant (for all designated States except US):
CHEVRON PHILLIPS CHEMICAL COMPANY,
LP [US/US]; 10001 Six Pines Drive, The Woodlands, TX
77380 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SMALL, Brooke, L.**
[US/US]; 3135 Beaver Glen Drive, Kingwood, TX 77339
(US). **KREISCHER, Bruce, E.** [US/US]; 20443 Crimson
Oak Trail, Humble, TX 77346 (US).

(74) Agent: **HULETT, Joe, D.**; 10001 Six Pines Drive, The
Woodlands, TX 77380 (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

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

(54) Title: OLEFIN OLIGOMERIZATION

(57) Abstract: Provided is a method of oligomerizing alpha olefins. In an embodiment, an oligomerization catalyst system is con-
tacted in at least one continuous reactor with a feed comprising olefins; an effluent comprising product olefins having at least four
carbon atoms is withdrawn from the reactor; the oligomerization catalyst system comprises iron or cobalt, or combinations thereof;
and the single pass conversion of ethylene is at least about 40 weight percent among product olefins having at least four carbon atoms.
In another embodiment, the single pass conversion of ethylene comprises at least about 65 weight percent among product olefins
having at least four carbon atoms. In another embodiment, product olefins of the effluent having twelve carbon atoms comprise at
least about 95 weight percent 1-dodecene. In another embodiment, product olefins comprise at least about 80 weight percent linear
1-alkenes. In another embodiment, product olefins comprise at least about 20 weight percent alpha olefins having from about 8 to
about 20 carbon atoms. In another embodiment, the oligomerization catalyst system provided comprises a selective 1-hexene (S1H)
catalyst.



WO 2005/080301 A1