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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 June 2008 (19.06.2008)

PCT

(10) International Publication Number
WO 2008/071949 A1

(51) International Patent Classification:
C07C 6/04 (2006.01) *C07C 11/107* (2006.01)

(21) International Application Number:
PCT/GB2007/004753

(22) International Filing Date:
11 December 2007 (11.12.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
06256359.8 14 December 2006 (14.12.2006) EP

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, LV, MC, MT, 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).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*

(54) **Title:** PROCESS FOR MANUFACTURING NEOHEXENE

(57) **Abstract:** The present invention relates to a process for manufacturing neohexene, comprising contacting isobutene with a supported catalyst comprising a tungsten compound chosen from tungsten hydrides, organometallic tungsten compounds and organometallic tungsten hydrides, and a support comprising an oxide of aluminium, so as to form a reaction mixture comprising neohexene, and preferably separating neohexene from the reaction mixture, so as to isolate it. The contacting leads to the direct production of neohexene, in particular in a single (reaction) stage and with a high molar selectivity for neohexene. The contacting can be performed at a temperature of 50 to 600 °C, under a total absolute pressure of 0.01 to 100 MPa.

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