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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
7 April 2016 (07.04.2016)

WIPO | PCT

(10) International Publication Number
WO 2016/053583 A1

(51) International Patent Classification:
C07C 45/62 (2006.01)

(21) International Application Number:
PCT/US2015/048972

(22) International Filing Date:
8 September 2015 (08.09.2015)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/057,980 30 September 2014 (30.09.2014) US
14199388.1 19 December 2014 (19.12.2014) EP

(71) Applicant: **EXXONMOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US).

(72) Inventors: **BECKER, Christopher, L.**; 3109 Driftwood Dr., Manhattan, KS 66503 (US). **DAVIS, Jason, D.**; 4315 Stephen Lane, Beaumont, TX 77706 (US). **DAKKA, Jihad, M.**; 6 Gleim Road, Whitehouse Station, NJ 08889 (US). **NADLER, Kirk, C.**; 2518 Coastal Oak Dr., Houston, TX 77059 (US).

(74) Agents: **BAEHL, Stephen A.** et al.; Exxonmobil Chemical Company, Law Technology, P.O. Box 2149, Baytown, TX 77522-2149 (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, BN, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, KM, 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:

— *with international search report (Art. 21(3))*

(54) Title: PROCESS FOR MAKING CYCLOHEXANONE

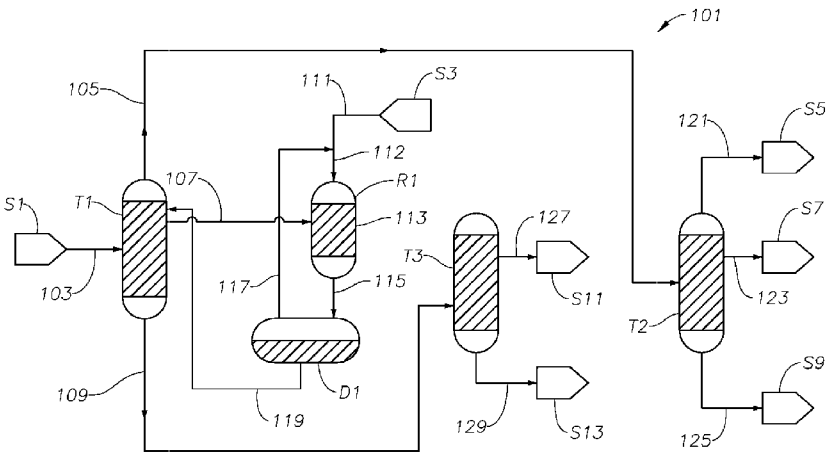


FIG. 1

(57) Abstract: Disclosed are processes and systems for making cyclohexanone from a mixture comprising phenol, cyclohexanone, and cyclohexylbenzene, comprising a step of or a device for subjecting at least a portion of the mixture to hydrogenation and a step of or a device for distilling a phenol/cyclohexanone/cyclohexylbenzene mixture to obtain an effluent rich in cyclohexanone.

WO 2016/053583 A1