



(51) International Patent Classification:

C10G 7/00 (2006.01) C10G 67/02 (2006.01)
B01D 3/14 (2006.01) C10G 45/58 (2006.01)
C10G 7/02 (2006.01)

(21) International Application Number:

PCT/IB2020/000379

(22) International Filing Date:

14 May 2020 (14.05.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/848,217 15 May 2019 (15.05.2019) US

(71) Applicants: **SULZER MANAGEMENT AG** [CH/CH];
Neuwiesenstrasse 15, 8401 Winterthur (CH). **BHARAT**

PETROLEUM CORPORATION LIMITED [IN/IN];
Bharat Bhavan, 4 And 6 Currimbhoy Road, Ballard Estate,
Mumbai 400001 (IN).

(72) Inventors: **BHARGAVA, Manish**; 9603 Basil Field
Court, Katy, TX 77494 (US). **KALITA, Roomi**; 2610 Polk
Street, Houston, TX 77003 (US). **KANDA, Amit**; 4223
Hazeport Dr., Katy, TX 77494 (US). **RAVITEJ, Pama-
raju, V.**; BPCL Staff Colony, Flat No. 12, Block No.2, Az-
iz Baug, Chembur, Mumbai 400074 (IN). **CHAUDHARY,
Kondapalli, Shreya**; A-1501 Gunina, Plot No. 2&3, Sector
16A, Sanpada, Mumbai 400074 (IN).

(74) Agent: **HENKEL & PARTNER MBB**; Maximiliansplatz
21, 80333 München (DE).

(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,

(54) Title: PURIFICATION OF HEXANE AS BY-PRODUCT OF AN ISOMERIZATION UNIT USING A DIVIDING WALL COL-
UMN

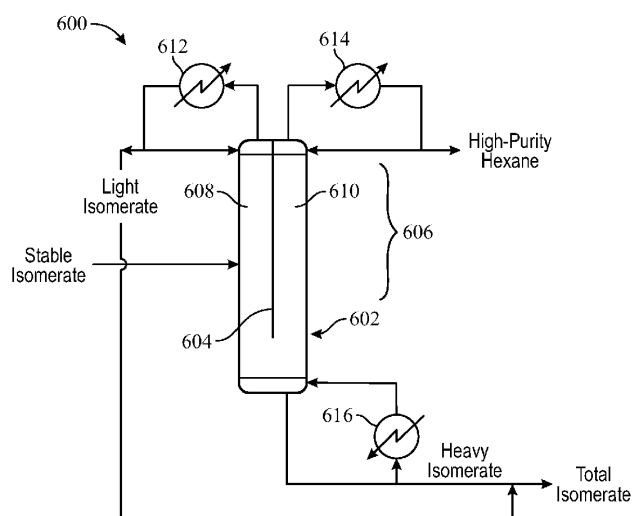


FIG. 6

(57) Abstract: A system and method for producing high-purity hexane that uses a deisohexanizer with a dividing wall within the separation section following the isomerization reactor section of an isomerization unit deisohexanizer column with a dividing wall. Light isomerate (mainly i-C₅) and heavy isomerate (mainly i-C₆) are also products of the isomerization unit. The dividing wall column merges operation of two conventional distillation columns into a single column leading to substantial cost savings. The dividing wall for this particular application can be located either in the top, bottom, or middle section of the column. Using a top, bottom, or middle dividing wall column for this application has significant advantages over conventional distillation columns. The hexane, produced as a byproduct from the isomerization unit is of a much superior quality to that produced by a solvent extraction process, which is the conventional process for producing hexane. The operating cost for the production of hexane from an isomerization unit is significantly reduced compared to the cost of hexane produced by solvent extraction processes.

[Continued on next page]

CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP,
KR, KW, 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, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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).

Published:

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