

(43) International Publication Date
21 April 2022 (21.04.2022)



(10) International Publication Number
WO 2022/079059 A1

(51) International Patent Classification:

<i>C10G 53/04</i> (2006.01)	<i>C10G 1/10</i> (2006.01)
<i>C10G 53/08</i> (2006.01)	<i>C10G 53/00</i> (2006.01)
<i>C10G 1/00</i> (2006.01)	<i>C10G 55/00</i> (2006.01)
<i>C10G 1/02</i> (2006.01)	<i>C10G 55/04</i> (2006.01)

(21) International Application Number:

PCT/EP2021/078227

(22) International Filing Date:

12 October 2021 (12.10.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

20202173.9	16 October 2020 (16.10.2020)	EP
------------	------------------------------	----

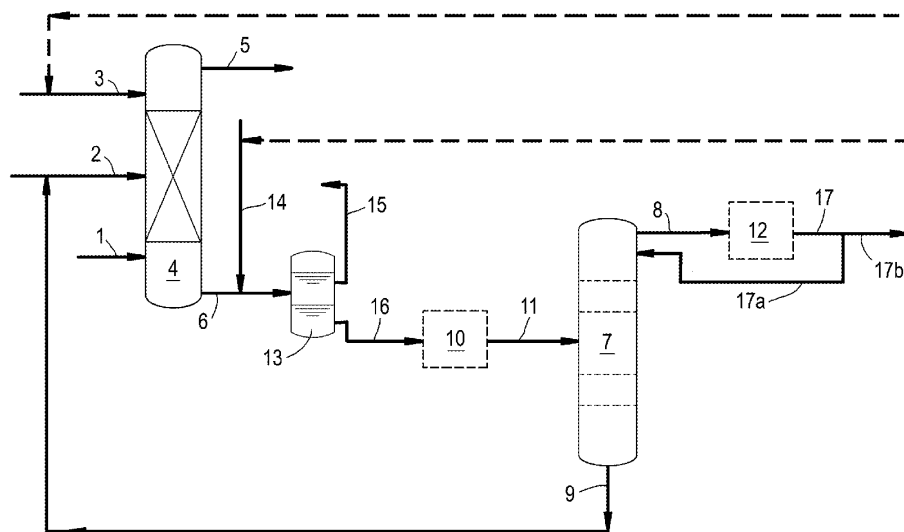
(71) Applicant (for all designated States except US): **SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.** [NL/NL]; Carel van Bylandtlaan 30, 2596 HR The Hague (NL).

(71) **Applicant** (for US only): **SHELL OIL COMPANY**
[US/US]; 150 N. Dairy Ashford, Houston, Texas 77079
(US).

(72) **Inventors:** LANGE, Jean-Paul Andre Marie Joseph Ghislain; Grasweg 31, 1031 HW Amsterdam (NL). **VAN ROSSUM, Guus;** Grasweg 31, 1031 HW Amsterdam (NL). **DERKS, Willem;** Grasweg 31, 1031 HW Amsterdam (NL). **FISCHER, Kai Jürgen;** Grasweg 31, 1031 HW Amsterdam (NL). **OLTHOF, Timothé Johannes;** Grasweg 31, 1031 HW Amsterdam (NL). **HAAN, Johannes Pieter;** Grasweg 3, 1031 HW Amsterdam (NL).

(54) **Title:** RECOVERY OF ALIPHATIC HYDROCARBONS

Fig.1



(57) Abstract: The invention relates to a process for the recovery of aliphatic hydrocarbons from a liquid stream comprising aliphatic hydrocarbons, heteroatom containing organic compounds and optionally aromatic hydrocarbons, involving a) liquid-liquid extraction of said liquid stream with an extraction solvent; b) mixing the extract stream, comprising extraction solvent, heteroatom containing organic compounds and optionally aromatic hydrocarbons, with a demixing solvent to remove part of the heteroatom containing organic compounds and optional aromatic hydrocarbons; and c) separation of the remaining stream into a demixing solvent stream and an extraction solvent stream, wherein before and/or after step c) additional heteroatom containing organic compounds and optional aromatic hydrocarbons are removed from that remaining stream and/or from a stream resulting from step c), respectively, by contacting the latter stream (s) with a sorption agent. Further, the invention relates to a process for the recovery of aliphatic hydrocarbons from plastics

[Continued on next page]

(74) **Agent: SHELL LEGAL SERVICES IP**; PO BOX 384,
2501 CJ The Hague (NL).

(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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, 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))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

comprising the above-mentioned process; and to a process for steam cracking a hydrocarbon feed comprising aliphatic hydrocarbons as recovered in one of the above-mentioned processes.