



- (51) **International Patent Classification:**
C07C 2/08 (2006.01) **C07C 7/04** (2006.01)
- (21) **International Application Number:**
PCT/IB2010/054444
- (22) **International Filing Date:**
1 October 2010 (01.10.2010)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
2009/07265 16 October 2009 (16.10.2009) ZA
- (71) **Applicant (for all designated States except US):** **SASOL TECHNOLOGY (PROPRIETARY) LIMITED** [ZA/ZA]; 1 Sturdee Avenue, Rosebank, 2196 Johannesburg (ZA).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **GILDENHUYS, Johannes, Jochemus** [ZA/ZA]; 9 Charleston Crescent, Tiat Road, Sunninghill, 2157 Johannesburg (ZA). **STONE, Andrew, Kenneth** [ZA/ZA]; 25 Albert Street, Linden Extension, 2195 Johannesburg (ZA). **REVELT, William, Francis** [US/US]; 4338 King Cotton Lane, Missouri City, Texas 77459 (US).
- (74) **Agents:** **VAN DER WALT, Louis, Stephanus** et al.; Adams & Adams, P O Box 1014, 0001 Pretoria (ZA).
- (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, 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, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- 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 (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(54) **Title:** SEPARATION OF COMPONENTS FROM A MULTI-COMPONENT HYDROCARBON STREAM WHICH INCLUDES ETHYLENE

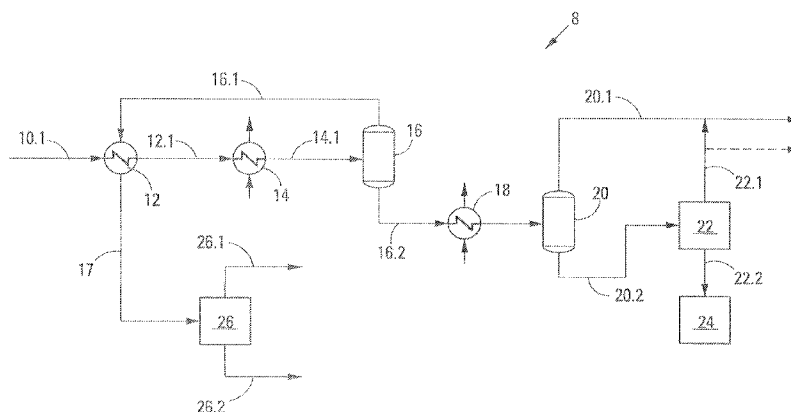


FIG 1

(57) **Abstract:** A process (8, 108) to separate a multi-component hydrocarbon stream (10.1) which includes ethylene and other components with at least some of the components being present in a plurality of phases, is provided. The process (8,108) includes in a first flash stage (16), flashing the multi-component hydrocarbon stream (10.1), from an elevated pressure and temperature to a pressure in the range of 10 -18 bar(a), producing a first ethylene-containing vapour stream (16.1) at a pressure in the range of 10 - 18 bar(a) and a multi-phase stream (16.2) which includes some ethylene. In a second flash stage (20), the multi-phase stream (16.2) is flashed to a pressure of less than 6 bar(a), producing a second vapour stream (20.1) at a pressure of less than 6 bar(a) and a bottoms stream (20.2). The first ethylene-containing vapour stream (16.1) is removed from the first flash stage (16), the second vapour stream (20.1) is removed from the second flash stage (20) and the bottoms stream (20.2) is removed from the second flash stage (20).