

(19) World Intellectual Property Organization
International Bureau



G00002

(43) International Publication Date
13 June 2002 (13.06.2002)

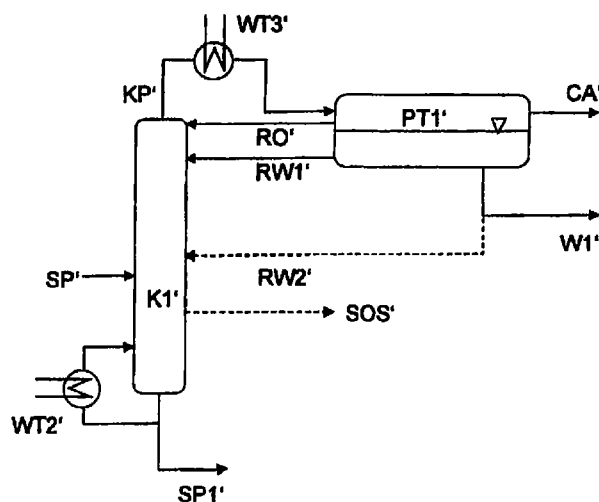
PCT

(10) International Publication Number
WO 02/46133 A1

- (51) International Patent Classification⁷: C07C 39/04, 37/74
- (21) International Application Number: PCT/EP01/14029
- (22) International Filing Date:
30 November 2001 (30.11.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
100 60 505.2 6 December 2000 (06.12.2000) DE
- (71) Applicant: INEOS PHENOL GMBH & CO. KG [DE/DE]; Dechenstrasse 3, 45966 Gladbeck (DE).
- (72) Inventors: KORTE, Hermann-Josef; Herderstrasse 14, 45721 Haltern (DE). SCHWARZ, Christoph; Schlüterstrasse 5, 45768 Marl (DE). TANGER, Uwe; Trakehner Strasse 2, 44879 Bochum (DE). ULLRICH, Jochen; Glückstrasse 27a, 45966 Gladbeck (DE). WEBER, Markus; In der Borg 28a, 45721 Haltern (DE).
- (74) Agent: STERNAGEL, FLEISCHER, GODEMEYER & PARTNER; Braunsberger Feld 29, 51429 Bergisch Gladbach (DE).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: PROCESS FOR SEPARATING PHENOL FROM A MIXTURE COMPRISING AT LEAST HYDROXYACETONE, CUMENE, WATER AND PHENOL



(57) Abstract: The present invention claims a process for separating phenol from a mixture comprising at least hydroxyacetone, cumene, water and phenol, which comprises fractionating the mixture by means of a single fractional distillation step and a single phase separation step in such a way that a single phenol-containing fraction containing less than 300 ppm of hydroxyacetone is obtained. In the work-up by distillation of cleavage product mixtures, the hydroxyacetone is usually removed from the cleavage product mixture together with a phenol fraction from which the hydroxyacetone has to be removed in a costly fashion. The process of the invention enables the outlay in terms of apparatus and the energy consumption to be substantially reduced compared to conventional plants. The process of the invention can be used for the work-up by distillation of cleavage product mixtures obtained in the cleavage of alkylaryl hydroperoxides, particularly in the cleavage of cumene hydroperoxide. Use of the process of the invention makes it possible to separate phenol and acetone from a cleavage product mixture obtained in the cleavage of cumene hydroperoxide.

WO 02/46133 A1

162162



— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette