

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 June 2002 (20.06.2002)

PCT

(10) International Publication Number
WO 02/048125 A3

(51) International Patent Classification⁷: **C07D 301/20**

(21) International Application Number: PCT/EP01/14748

(22) International Filing Date:
13 December 2001 (13.12.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/736,522 13 December 2000 (13.12.2000) US

(71) Applicant: **SHELL INTERNATIONALE RESEARCH
MAATSCHAPPIJ B.V.** [NL/NL]; Carel van Bylandtlaan
30, NL-2596 HR The Hague (NL).

(72) Inventors: **MURRAY, Brendan, Dermot**; 1118 Stoney
Hill Drive, Houston, TX 77077 (US). **VAPORCIYAN,
Garo, Garbis**; Badhuisweg 3, NL-1031 OM Amsterdam
(NL).

(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, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN,
YU, ZA, ZM, 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

(88) Date of publication of the international search report:
10 April 2003

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.

(54) Title: PROCESS FOR PREPARING OXIRANE COMPOUNDS

(57) **Abstract:** Process for the preparation of oxirane compounds, which process comprises: (i) oxidation of an alkylaryl to obtain an alkylaryl hydroperoxide, (ii) contacting at least part of the alkylaryl hydroperoxide obtained in step (i) with olefin in the presence of a catalyst to obtain an oxirane compound and alkylaryl hydroxyl, (iii) separating oxirane compound from reaction product of step (ii), and (iv) contacting at least part of the reaction product from which an oxirane compound has been separated, with hydrogen to obtain alkylaryl at least part of which is recycled to step (i), in which process the alkylaryl is an alkylaryl compound comprising more than 1 alkyl substituent.



WO 02/048125 A3