(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 June 2004 (10.06.2004)

PCT

(10) International Publication Number
WO 2004/048354 A1

(51) International Patent Classification[7]: C07D 301/12

(21) International Application Number:
PCT/EP2003/013213

(22) International Filing Date:
25 November 2003 (25.11.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02026241.6 26 November 2002 (26.11.2002) EP

(71) Applicants: **DEGUSSA AG** [DE/DE]; Bennigsenplatz 1, 40474 Düsseldorf (DE). **UHDE GMBH** [DE/DE]; Friedrich-Uhde-Strasse 15, 44141 Dortmund (DE).

(72) Inventors: **HAAS, Thomas**; Lersnerstrasse 30a, 60322 Frankfurt (DE). **HOFEN, Willi**; Südring 54, 63517 Rodenbach (DE). **WÖLL, Wolfgang**; Backesweg 28a, 63477 Maintal (DE). **BRASSE, Claudia**; Elsa-Brandström-Strasse 5d, 63452 Hanau (DE). **STOCHNIOL, Guido**; Weinbergstrasse 23b, 63571 Gelnhausen (DE). **ULLRICH, Norbert**; Auf der Litten 30, 45139 Essen (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, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (BW, 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, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

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.

WO 2004/048354 A1

(54) Title: PROCESS FOR THE EPOXIDATION OF OLEFINS

(57) Abstract: The present invention refers to a process for the catalytic epoxidation of olefins in the presence of a titanium containing zeolite catalyst and a polar solvent whereby the deactivation of the catalyst upon recycling of the solvent has been considerably reduced. In the process one or more nitrogen containing compounds are introduced at some stage, a solvent stream is recovered, treated to contain less than 50 wppm nitrogen in the form of organic nitrogen compounds and at least a part of it is recycled to the epoxidation step. The invention is also directed towards a process for the catalytic epoxidation of propene which integrates the inventive treatment and recycle of the solvent into the workup of the reaction mixture.