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(71) Applicant (for all designated States except US): AROMAGEN CORPORATION [US/US]; 4625 Merrimac Lane North, Plymouth, Minnesota 55446 (US).

(71) Applicant and

(72) Inventor: SELIFONOV, Sergey [RU/US]; 4625 Merrimac Lane North, Plymouth, Minnesota 55446 (US).

(74) Agent: WHELAN, Dorothy P.; Fish & Richardson P.C., P.O. Box 1022, Minneapolis, Minnesota 55440-1022 (US).

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(54) Title: GLYCEROL LEVULINATE KETALS AND THEIR USE

(57) Abstract: The present disclosure relates to the preparation of ketal compounds from glycerol and levulinic acid and esters, and uses thereof.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/45200

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A01N 57/00, A61K 31/665, 31/075 (2007.01)

USPC - 514/101

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

USPC: 514/101

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

USPC: 514/99, 100, 253.1, 417, 425 and 718 (see search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Electronic Databases: DB=PGPB,USPT,USOC,EPAB,JPAB; PLUR=NO; OP=ADJ; USPTO (Patents and Published Applications)

Search terms: Oxymethylene, polymer, urethane, catalyst, trans-esterification, dioxolane, levulinate, angelicalactone, vinyl chloride, lactate, polysaccharide, urethane, distillation, alkali, ammonia, cis, trans

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| Y | US 2004/0010064 A1 (HARASHINA et al.) 15 June 2004 (15.01.2004) especially, para [0005], [0017], [0021]-[0034], [0040], [0046], [0062], [0074]-[0079], [0087] and [0111] | 1-22 |
| Y | US 2004/0167245 A1 (CHAPPELOW et al.) 26 August 2004 (26.08.2004) especially, para [0006]-[0008], [0010], [0014], [0017], [0067] and [0071]; Fig. 31; Claims 4 and 7 | 1-11, 20-22 |
| Y | US 6,034,118 A (BISCHOFBERGER et al.) 07 March 2000 (07.03.2000) especially, col 19, ln 67, col 20, ln 15, col 156, ln 65, col 159 (all), col 160, col 195, col 201-col 204; Table 2 | 12-20 |
| Y | US 2005/0153149 A1 (SAKANE et al.) 14 July 2005 (14.07.2005) especially, para [0053], [0784] and [0791] | 16, 21-22 |

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Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
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