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

(19) World Intellectual Property Organization International Bureau



IN

# 

## (10) International Publication Number WO 2011/027211 A3

### (43) International Publication Date 10 March 2011 (10.03.2011)

(51) International Patent Classification:

C07C 69/88 (2006.01) C07C 67/08 (2006.01) C07C 69/14 (2006.01) C07C 69/68 (2006.01)

C07C 69/78 (2006.01)

(21) International Application Number:

PCT/IB2010/002203

(22) International Filing Date:

6 September 2010 (06.09.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

1842/DEL/2009 7 September 2009 (07.09.2009)

- (71) Applicant (for all designated States except US): COUN-CIL OF SCIENTIFIC & INDUSTRIAL RESEARCH [IN/IN]; Anusandhan Bhawan, Rafi Marg, New Delhi 110 001 (IN).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BARVE, Prashant, Purushottam [IN/IN]; National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411008, Maharashtra (IN). KULKARNI, Bhaskar, Dattatraya [IN/IN]; National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411008, Maharashtra (IN). GUPTE, Milind, Yashwant [IN/IN]; National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411008, Maharashtra (IN). NENE, Sanjay, Narayan [IN/IN]; National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411008, Maharashtra (IN). SHINDE, Ravindra, William [IN/IN]; National Chemical Laboratory, Dr. Homi Bhabha Road, Pune 411008, Maharashtra (IN).

- (74) Agents: BHATTACHARYYA, Goutam et al.; K & S Partners, Intellectual Property Attorneys, 109, Sector 44, Gurgaon 122003, National Capital Region (IN).
- (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, 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 applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

#### Published:

- with international search report (Art. 21(3))
- (88) Date of publication of the international search report: 5 May 2011



(54) Title: PROCESS FOR PREPARATION OF PURE ALKYL ESTERS FROM ALKALI METAL SALT OF CARBOXYLIC **ACID** 

(57) Abstract: The dehydrated alkali metal salts of carboxylic acid are dissolved in the alcohol such as methanol or ethanol or butanol to make their solution in corresponding alcohol. The solution alcohol is further treated with carbon dioxide under pressure or at atmospheric pressure at elevated temperature such as 150 to 200° C. The carboxylic acid gets converted into corresponding alkyl ester and calcium carbonate or sodium carbonate or potassium carbonate as the byproduct. Calcium lactate or Sodium lactate or Sodium acetate or Sodium benzoate or Sodium salicylate as alkali metal salt solution prepared in Methanol or Ethanol or Butanol when treated with carbon di-oxide under pressure or at atmospheric pressure at elevted temperature gets converted to Methyl lactate or Ethyl lactate or Methyl acetate or Methyl benzoate or Methyl salicylate as product.

## **INTERNATIONAL SEARCH REPORT**

International application No PCT/IB2010/002203

A. CLASSI INV. ADD.	FICATION OF SUBJECT MATTER C07C67/08 C07C69/68 C07C69/	78 C07C69/88	C07C69/14		
According to	o International Patent Classification (IPC) or to both national classifica	ation and IPC			
	SEARCHED				
CO7C	ocumentation searched (classification system followed by classification	on symbols)			
	tion searched other than minimum documentation to the extent that s				
	ata base consulted during the international search (name of data bas ternal, BEILSTEIN Data, WPI Data	se and, where practical, search terms us	ed)		
LFO-III	ternar, BETESTEIN Data, WFT Data				
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the rele	Relevant to claim No.			
X	WO 97/30964 A1 (YISSUM RES DEV CO SAXE BERNHARD D [US]; EYAL AHARO 28 August 1997 (1997-08-28) claims; examples 1,2,5	1-9			
А	DE 43 41 770 A1 (BASF AG [DE]) 14 June 1995 (1995-06-14) the whole document		1-9		
A	DE 171 835 C (CHEMISCHE FABRIK G 25 March 1905 (1905-03-25) the whole document 	ÜSTROW)	1-9		
Further documents are listed in the continuation of Box C.					
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "&" document member of the same patent family			
	actual completion of the international search  O February 2011	Date of mailing of the international of the interna	search report		
	nailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2	Authorized officer			
European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Bedel, Christian			

### **INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No
PCT/IB2010/002203

Patent document cited in search report	Publication date		atent family nember(s)	Publication date
WO 9730964 A1	28-08-1997		200892 T 718522 B2 2121597 A 9707656 A 2245953 A1 69704711 D1 69704711 T2 0920409 A1 2157062 T3	15-05-2001 13-04-2000 10-09-1997 27-07-1999 28-08-1997 07-06-2001 20-09-2001 09-06-1999 01-08-2001
DE 4341770 A1	14-06-1995	EP JP US	0658628 A1 7194387 A 5453365 A	21-06-1995 01-08-1995 26-09-1995
DE 171835 C		NONE		