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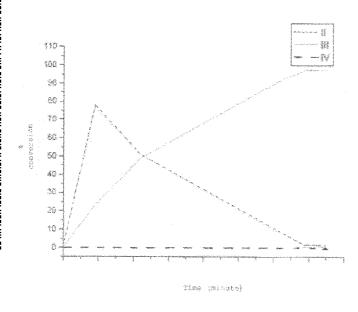
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#### **Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

# (54) Title: METHOD FOR THE INDUSTRIAL PRODUCTION OF 2-HALO-4,6-DIALKOXY-1,3,5-TRIAZINE AND THEIR USE IN THE PRESENCE OF AMINES



(57) Abstract: A method for stabilization of collagen matrices and of condensation of natural and synthetic polymers that uses 2-halo-4, 6-dialkoxy-1, 3, 5-triazines in the presence of one or more amines as activating agents for reactions of crosslinking, condensation, grafting, and curing of collagen matrices, cellulose, modified celluloses, polysaccharides, acid unsaturated polymers, and chiral and non-chiral amines, etc. Forming an integral part of the present invention is also the method for production on an industrial scale of 2-halo-4, 6-dialkoxy-1, 3, 5-triazines.

Figure 1



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- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

### **INTERNATIONAL SEARCH REPORT**

International application No PCT/IB2015/059892

A. CLASSIFICATION OF SUBJECT MATTER INV. C07D251/46 ADD.

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)  $C97D - C14C\,$ 

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

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

EPO-Internal, WPI Data

Category' Citation of document, with indication, where appropriate, of the relevant passages  X US 2002/123628 A1 (SAIJO MASAKO [JP] ET AL) 5 September 2002 (2002-09-05) the whole document claims 1-4; examples 1-9   CRONIN J S ET AL: "AN IMPROVED PROCEDURE FOR THE LARGE SCALE PREPARATION OF 2-CHLORO-4,6-DIMETHOXY-1,3,5-TRIAZINE", SYNTHETIC COMMUNICATIONS, TAYLOR & FRANCIS INC, PHILADELPHIA, PA; US, vol. 26, no. 18, 1 January 1996 (1996-01-01), pages 3491-3494, XP002944723, ISSN: 0039-7911, DOI: 10.1080/00397919608003754 the whole document Page 3493; first two paragraphs; table 1   -/	C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		
AL) 5 September 2002 (2002-09-05) the whole document claims 1-4; examples 1-9   CRONIN J S ET AL: "AN IMPROVED PROCEDURE FOR THE LARGE SCALE PREPARATION OF 2-CHLORO-4,6-DIMETHOXY-1,3,5-TRIAZINE", SYNTHETIC COMMUNICATIONS, TAYLOR & FRANCIS INC, PHILADELPHIA, PA; US, vol. 26, no. 18, 1 January 1996 (1996-01-01), pages 3491-3494, XP002944723, ISSN: 0039-7911, DOI: 10.1080/00397919608003754 the whole document Page 3493; first two paragraphs; table 1	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
FOR THE LARGE SCALE PREPARATION OF 2-CHLORO-4,6-DIMETHOXY-1,3,5-TRIAZINE", SYNTHETIC COMMUNICATIONS, TAYLOR & FRANCIS INC, PHILADELPHIA, PA; US, vol. 26, no. 18, 1 January 1996 (1996-01-01), pages 3491-3494, XP002944723, ISSN: 0039-7911, DOI: 10.1080/00397919608003754 the whole document Page 3493; first two paragraphs; table 1	Х	AL) 5 September 2002 (2002-09-05) the whole document	1-9	
	X	FOR THE LARGE SCALE PREPARATION OF 2-CHLORO-4,6-DIMETHOXY-1,3,5-TRIAZINE", SYNTHETIC COMMUNICATIONS, TAYLOR & FRANCIS INC, PHILADELPHIA, PA; US, vol. 26, no. 18, 1 January 1996 (1996-01-01), pages 3491-3494, XP002944723, ISSN: 0039-7911, DOI: 10.1080/00397919608003754 the whole document Page 3493; first two paragraphs; table 1	1-9	

	-1				
X Further documents are listed in the continuation of Box C.	X See patent family annex.				
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent 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 later than the priority date claimed	"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				
Date of the actual completion of the international search 21 July 2016	Date of mailing of the international search report $08/08/2016$				
Name and mailing address of the ISA/  European Patent Office, P.B. 5818 Patentlaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040,  Fax: (+31-70) 340-3016	Authorized officer  Goss, Ilaria				

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# INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2015/059892

C(Continua	ation). DOCUMENTS CONSIDERED TO BE RELEVANT	T	
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A	US 2013/219634 A1 (REINEKING CLAUS [DE] ET AL) 29 August 2013 (2013-08-29) paragraph [0005] - paragraph [0006]; examples 1,21,22 paragraph [0163] - paragraph [0164]	14,23-26	
А	BOWES J H ET AL: "Crosslinking of Collagen", JOURNAL OF APPLIED CHEMISTRY, WILEY, US, vol. 15, no. 7, 1 July 1965 (1965-07-01), pages 296-304, XP002750889, ISSN: 0021-8871, DOI: 10.1002/JCTB.5010150702 [retrieved on 2007-05-04] cited in the application the whole document page 302; table IV	10-26	
А	US 4 076 538 A (SMITH NORMAN ALFRED) 28 February 1978 (1978-02-28) column 1, line 12 - line 48 column 3, line 17 - column 4, line 29	10-26	
A	US 8 679 196 B2 (REINEKING CLAUS [DE] ET AL) 25 March 2014 (2014-03-25) claims 1-17 claim 18	10-37	

International application No. PCT/IB2015/059892

# **INTERNATIONAL SEARCH REPORT**

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
see additional sheet
1. X As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.  The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.  No protest accompanied the payment of additional search fees.

# **INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No
PCT/IB2015/059892

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
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### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

A method for the synthesis of 2-halo-4,6-dialkoxy-1,3,5-triazines (III)

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2. claims: 10-27

Use of a compound of formula III ... in a method for the stabilisation of collagen matrices.

A method for stabilisation of collagen matrices ... comprising the single-step reaction with a pair of reagents. Leather, ..., which can be obtained with the method claimed previously.

Product-by-process claim.

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3. claims: 28-37

A pair of reagents ... constituted by a first reagent comprising a compound of formula III and a tertiary amine, and/or a quaternary salt thereof.

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