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(71) Applicant (for all designated States except US):
CELANESE INTERNATIONAL CORPORATION
[US/US]; 1601 West LBJ Freeway, Dallas, Texas 75234 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WARNER, R. Jay** [US/US]; 3507 East Pine Brook Way, Houston, Texas 77059 (US). **JOHNSTON, Victor J.** [US/US]; 3234 Pleasant Cove Court, Houston, Texas 77059 (US). **LEE, David** [GB/US]; 3418 Palm Bay Circle, Seabrook, Texas 77586 (US). **OROSCO, Adam** [US/US]; 2107 Dale Village Avenue, Houston, Texas 77059 (US).

(74) Agents: **KENNEDY, Nicoletta** et al.; 7918 Jones Branch Drive, McLean, Virginia 22102 (US).

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(54) Title: USING A DILUTE ACID STREAM AS AN EXTRACTIVE AGENT IN THE PURIFICATION OF ETHANOL

(57) Abstract: Recovery of ethanol from a crude ethanol product obtained from the hydrogenation of acetic acid using an extractive distillation column. A diluted acid stream, comprising less than 30 wt.% acetic acid, is used as the extractive agent and is fed at a point above the crude feed stream. The column yields a residue that comprises ethanol, acetic acid, and water. The diluted acid stream may be separated from the residue and returned to the extractive distillation column.



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A. CLASSIFICATION OF SUBJECT MATTER INV. C07C29/84 C07C31/08 C07C67/08 C07C29/149 C07C69/14 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) C07C		
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		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
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☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "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		
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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 Österle, Carmen	

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Information on patent family members

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