

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
8 July 2010 (08.07.2010)

PCT

(10) International Publication Number
WO 2010/077262 A3

(51) International Patent Classification:

B01J 23/66 (2006.01) *B01J 38/16* (2006.01)
B01J 23/96 (2006.01) *C07C 7/167* (2006.01)
B01J 38/10 (2006.01) *B01J 23/50* (2006.01)

(21) International Application Number:

PCT/US2009/006140

(22) International Filing Date:

17 November 2009 (17.11.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/316,829 17 December 2008 (17.12.2008) US

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(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, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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 applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

— 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))

(88) Date of publication of the international search report:

16 September 2010



WO 2010/077262 A3

(54) Title: CATALYST REGENERATION METHOD

(57) Abstract: A process is disclosed for regenerating a used catalyst comprising two or more noble metals supported on a carrier. The method comprises calcining a used catalyst comprising a noble metal and a transition metal supported on an inorganic carrier in an oxygen-containing gas to produce a calcined catalyst; and contacting the calcined catalyst with a hydrogen-containing gas at a temperature higher than 430°C.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/006140

A. CLASSIFICATION OF SUBJECT MATTER

INV. B01J23/66 B01J23/96 B01J38/10 B01J38/16 C07C7/167
B01J23/50

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 B01J

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 practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 802 889 A (FREVEL LUDO K ET AL) 13 August 1957 (1957-08-13) column 3, line 10 - line 25 column 4, line 9 - line 17 examples	1-11
X	US 3 076 858 A (FREVEL LUDO K ET AL) 5 February 1963 (1963-02-05) example 5 column 1, line 56 - line 59 column 2, line 32 - line 37	1-11
X	EP 1 710 222 A2 (SAUDI BASIC IND CORP [SA]) 11 October 2006 (2006-10-11) paragraphs [0017], [0022], [0031], [0042], [0070]	1-11
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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 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 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

22 July 2010

Date of mailing of the international search report

30/07/2010

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/006140

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 920 012 A (CHEMETRON CORP) 6 March 1963 (1963-03-06) example 3 -----	1-11

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 12-15(completely); 1-10(partially)

Present claim 1 relates to an extremely large number of possible methods, because the claimed catalyst regeneration method is said to apply to any "used" catalyst, without specifying for which purpose or in which process the catalyst has been used. Support and disclosure in the sense of Article 6 and 5 PCT is to be found however for only a very small proportion of the methods claimed, namely those wherein the catalyst has been used in, viz. is recovered from, an acetylene hydrogenation process, see claim 11. The non-compliance with the substantive provisions is to such an extent, that the search was performed taking into consideration the non-compliance in determining the extent of the search of the claims (PCT Guidelines 9.19 and 9.23). Consequently, the search of claims 1-10 was restricted to those methods wherein the used catalyst has been recovered from an acetylene hydrogenation process, see claim 11. For the same reasons, no meaningful search at all could be carried out in respect of claims 12-15. It is clear from the description as a whole that the subject-matter of claim 13 does not relate to acetylene hydrogenation, but to epoxidation processes, because transition metal zeolites are only mentioned in relation to epoxidation.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

International application No.
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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:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 12-15(completely); 1-10(partially)
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:
see FURTHER INFORMATION sheet PCT/ISA/210

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:

1. 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.:

Remark on Protest

- 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/US2009/006140
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date																				
US 2802889	A	13-08-1957	NONE																				
US 3076858	A	05-02-1963	NONE																				
EP 1710222	A2	11-10-2006	<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">CN</td> <td style="width: 15%;">101151227</td> <td style="width: 15%;">A</td> <td style="width: 55%;">26-03-2008</td> </tr> <tr> <td>WO</td> <td>2006105799</td> <td>A2</td> <td>12-10-2006</td> </tr> <tr> <td>JP</td> <td>2008537944</td> <td>T</td> <td>02-10-2008</td> </tr> <tr> <td>KR</td> <td>20070116991</td> <td>A</td> <td>11-12-2007</td> </tr> <tr> <td>US</td> <td>2009326288</td> <td>A1</td> <td>31-12-2009</td> </tr> </table>	CN	101151227	A	26-03-2008	WO	2006105799	A2	12-10-2006	JP	2008537944	T	02-10-2008	KR	20070116991	A	11-12-2007	US	2009326288	A1	31-12-2009
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GB 920012	A	06-03-1963	NONE																				