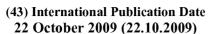
(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau







(10) International Publication Number WO 2009/127942 A3

(51) International Patent Classification:

C07C 253/00 (2006.01) **C07C 1/04** (2006.01) **C07C 231/10** (2006.01) **C07F 9/02** (2006.01)

(21) International Application Number:

PCT/IB2009/005242

(22) International Filing Date:

15 April 2009 (15.04.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2008/03393

16 April 2008 (16.04.2008)

ZA

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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, 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, 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, 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, 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, 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 identity of the inventor (Rule 4.17(i))

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:

3 June 2010



(54) Title: A PROCESS FOR THE PRODUCTION OF NITROGEN OR PHOSPHORUS CONTAINING COMPOUNDS FROM SYNTHESIS GAS

(57) Abstract: A process is described for the production of one or more of linear nitriles, amides and formamides which includes reacting a nitrogen containing compound, such as ammonia or NO_x, and a synthesis gas over a catalyst at a temperature of between 160 °C and 400°C and a pressure of between 1 bar and 50 bar. A further process for the production of one or more of linear phosphorous containing compounds is also described, which includes reacting a phosphorous containing compound, such as a phosphine, and a synthesis gas over a catalyst at a temperature of between 160 °C and 400°C and a pressure of between 1 bar and 50 bar. A supported cobalt, iron, ruthenium or rhodium catalyst or an unsupported (bulk) promoted iron catalyst, modified with a promoter is used. The synthesis gas is a mixture of hydrogen and carbon monoxide, in a ratio from 0.5:1 to 5:1; or a mixture of hydrogen and carbon dioxide; or a mixture of water and carbon monoxide. The suppression of the formation of oxygenates in the process is a feature of the invention and oxygenates may even be included in the feed to become converted to corresponding nitrogen containing compounds in the process.

INTERNATIONAL SEARCH REPORT

International application No. PCT/IB 2009/005242

A. CLASSIFICATION OF SUBJECT MATTER IPC8: **C07C 253/00** (2006.01); **C07C 231/10** (2006.01); **C07C 1/04** (2006.01); **C07F 9/02** (2006.01) 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) JPC8: C07C, C07F 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) WPI, EPODOC C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Category* Relevant to claim No. Χ US 6 441 234 B1 (DAHLHAUS et al.) 27 August 2002 1-11,14,15 (27.08.2002)Claims; examples X US 4 556 734 A (KNIFTON) 03 December 1985 (03.12.1985) 1-11,14,15 Claims; examples US 4 558 157 A (MARSELLA et al.) 10 December 1985 Х 1-11,14,15 (10.12.1985)Claims; examples See patent family annex. Further documents are listed in the continuation of Box C. "T" later document published after the international filing date or Special categories of cited documents: "A" document defining the general state of the art which is not considered priority date and not in conflict with the application but cited to be of particular relevance to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention "E" earlier application or patent but published on or after the international cannot be considered novel or cannot be considered to involve filing date "L" document which may throw doubts on priority claim(s) or which is an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cited to establish the publication date of another citation or other special reason (as specified) cannot be considered to involve an inventive step when the document referring to an oral disclosure, use, exhibition or other document is combined with one or more other such means documents, such combination being obvious to a person document published prior to the international filing date but later than skilled in the art "&" document member of the same patent family the priority date claimed Date of mailing of the international search report Date of the actual completion of the international search 31 March 2010 (31.03.2010) 13 April 2010 (13.04.2010) Authorized officer Name and mailing address of the ISA/AT PAMMINGER W. **Austrian Patent Office** Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24 / 535 Telephone No. +43 / 1 / 534 24 / 223

INTERNATIONAL SEARCH REPORT Information on patent family members

International application No. PCT/IB 2009/005242

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