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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 March 2008 (20.03.2008)

PCT

(10) International Publication Number
WO 2008/031897 A1

(51) International Patent Classification:
C22B 34/34 (2006.01) *C22B 7/00* (2006.01)
C22B 34/36 (2006.01) *C22B 1/02* (2006.01)
C22B 23/00 (2006.01)

(21) International Application Number:
PCT/EP2007/059734

(22) International Filing Date:
14 September 2007 (14.09.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/844,505 14 September 2006 (14.09.2006) US

(71) Applicant *(for all designated States except US)*: **ALBEMARLE NETHERLANDS B.V.** [NL/NL]; Stationsplein 4, NL-3818 LE Amersfoort (NL).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **SITTERS, Johannes Cornelis.** [NL/NL]; Bombardonstraat 47, NL-3822 CG Amersfoort (NL). **FREE, Harmannus Willem Homan** [NL/NL]; De Colignylaan 9, NL-3761 DD Soest (NL). **OOGJEN, Bob Gerardus** [NL/NL]; Galopstraat 36, NL-1326 RR Almere (NL).

(74) Agents: **DERKS, Wilhelmus, Hubertus, P.** et al.; Rembrandt Tower 31st floor, Amstelplein 1, NL-1096 HA Amsterdam (NL).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, 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, 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, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration 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*

(54) **Title:** PROCESS FOR RECOVERING GROUP VI-B METALS FROM SPENT CATALYSTS

(57) **Abstract:** The invention relates to a process for recovering Group VIB metals from a catalyst, in particular a spent bulk catalyst, comprising one or more Group VIB metals and one or more Group VIII metals. Further, the invention relates to a solid Group VIB metal compound obtainable by the process according to the invention having the general formula H_2XO_4, wherein $X = W_{1-y}Mo_y$, wherein y is between O and 1 and to its use in a process for the manufacture of a fresh catalyst. The process comprises the steps of: a) oxidizing the one or more Group VIB metals to one or more Group VIB metal oxides; b) separating the one or more Group VIB metal oxides from the one or more Group VIII metals; c) dissolving the one or more Group VIB metal oxides in water to produce an aqueous solution of one or more Group VIB metal oxides; d) precipitating the one or more Group VIB metal oxides from the aqueous solution by adding alkaline earth metal (Group IIa) ions to the aqueous solution; e) optionally filtering and washing the precipitate; and f) transforming the precipitate by adding an acid to form a solid metal compound comprising one or more Group VIB metals.

WO 2008/031897 A1