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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 May 2010 (20.05.2010)

PCT

(10) International Publication Number
WO 2010/056275 A1

(51) International Patent Classification:
B01J 23/68 (2006.01) *C07C 67/055* (2006.01)

(21) International Application Number:
PCT/US2009/005828

(22) International Filing Date:
27 October 2009 (27.10.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/291,628 12 November 2008 (12.11.2008) US

(71) Applicant: **LYONDELL CHEMICAL TECHNOLOGY, L.P.** [US/US]; Delaware Corporate Center II, 2 Righter Parkway, Suite 300, Wilmington, Delaware 19803 (US).

(72) Inventor: **SHAY, Daniel, Travis**; 38 Wharton Drive, Glen Mills, Pennsylvania 19342 (US).

(74) Agents: **GUO, Shao-Hua** et al.; LyondellBasell Industries, 3801 West Chester Pike, Newtown Square, Pennsylvania 19073 (US).

(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))*

WO 2010/056275 A1

(54) Title: SUPPORTED PALLADIUM-GOLD CATALYSTS AND PREPARATION OF VINYL ACETATE THEREWITH

(57) Abstract: Disclosed is a catalyst. The catalyst comprises palladium, gold, and a support comprising titanium dioxide and tungsten trioxide. The support preferably comprises from 75 wt% to 99 wt% of titanium dioxide and from 1 wt% to 25 wt% of tungsten trioxide. A method for preparing the catalyst is also disclosed. The method comprises impregnating the support with a palladium compound and a gold compound, calcining the impregnated support, and then reducing the calcined support. Further disclosed is a method for preparing vinyl acetate with the catalyst. The catalyst exhibits improved catalytic activity and selectivity.