

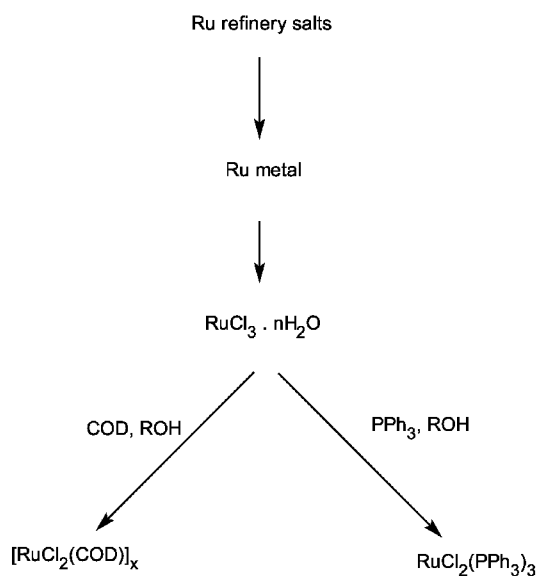


- (51) International Patent Classification:
C07F 15/00 (2006.01)
- (21) International Application Number:
PCT/US2012/059280
- (22) International Filing Date:
9 October 2012 (09.10.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
13/272,788 13 October 2011 (13.10.2011) US
13/606,640 7 September 2012 (07.09.2012) US
- (71) Applicant: ELEVANCE RENEWABLE SCIENCES, INC. [US/US]; 2501 Davey Road, Woodridge, IL 60517 (US).
- (72) Inventors; and
(71) Applicants : KUNZ, Linda, A. [US/US]; 2926 Kentshire Circle, Naperville, IL 60564 (US). COHEN, Steven, A. [US/US]; 962 Prairie Avenue, Naperville, IL 60540 (US). LUETKENS, Melvin, L. [US/US]; 2731 Lusted Lane, Batavia, IL 60510 (US).
- (74) Agent: LEITENBERGER, Bryan, J.; Brinks Hofer Gilson & Lione, P.O. Box 10087, Chicago, IL 60610 (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, BN, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHODS FOR PREPARING RUTHENIUM CARBENE COMPLEX PRECURSORS AND RUTHENIUM CARBENE COMPLEXES

FIG. 1



(57) Abstract: A method for preparing a ruthenium carbene complex precursor includes reacting a ruthenium refinery salt with a hydrogen halide to form a ruthenium intermediate, and reacting the ruthenium intermediate with an L-type ligand to form the ruthenium carbene complex precursor. A method for preparing a ruthenium vinylcarbene complex includes converting a ruthenium carbene complex precursor into a ruthenium hydrido halide complex, and reacting the ruthenium hydrido halide complex with a propargyl halide to form the ruthenium carbene complex. A method for preparing a ruthenium carbene complex includes converting a ruthenium carbene complex precursor into a ruthenium carbene complex having a structure (PR¹ R² R³)₂Cl₂Ru=CH-R⁴, wherein R¹, R², R³, and R⁴ are alike or different, and wherein covalent bonds may optionally exist between two or more of R¹, R², and R³ and/or two of R¹, R², and R³ taken together may optionally form a ring with phosphorous.



Published:

- *without international search report and to be republished
upon receipt of that report (Rule 48.2(g))*