



- (51) **International Patent Classification:**
C07D 301/10 (2006.01) *B01J 23/68* (2006.01)

(21) **International Application Number:**
PCT/US2022/043931

(22) **International Filing Date:**
19 September 2022 (19.09.2022)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) **Priority Data:**
63/247,483 23 September 2021 (23.09.2021) US

(71) **Applicant:** **DOW GLOBAL TECHNOLOGIES LLC** [US/US]; 2211 H.H. Dow Way, Midland, Michigan 48674 (US).

(72) **Inventors:** **LEE, Wen -Sheng;** 2211 H.H. Dow Way, Midland, Michigan 48674 (US). **MCADON, Mark H.;** 693 Washington Street, Midland, Michigan 48640 (US). **CALVERLEY, Edward M.;** 3111 Mt. Vernon Court, Midland, Michigan 48642 (US). **SANTOS CASTRO, Vera P.;** Herbert H. Dowweg 5, 4542 NM Hoek (NL).

(74) **Agent:** **THEKDIL, Amy;** The Dow Chemical Company, Intellectual Property, P. O. Box 1967, Midland, Michigan 48641-1967 (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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, 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, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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, ST, 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, KM, ML, MR, NE, SN, TD, TG).

(54) Title: PROCESS FOR REDUCING THE AGING-RELATED DEACTIVATION OF HIGH SELECTIVITY ETHYLENE OXIDE CATALYSTS

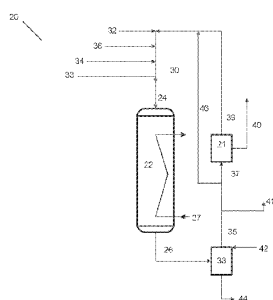


FIG. 1A

(57) Abstract: Disclosed herein are methods of improving the life of high selectivity, silver catalysts for making ethylene oxide. Ethylene and oxygen are reacted over the high efficiency catalyst with at least one organic chloride modifier, and during a catalyst aging period of no less than 0.03 kt ethylene oxide/cubic meter catalyst, the overall catalyst chloriding effectiveness never exceeds an efficiency-maximizing optimum overall catalyst chloriding effectiveness value that corresponds to a reference feed gas composition and a set of reference reaction condition values. Reaction temperature and/or feed gas oxygen concentration are adjusted to obtain or maintain a desired value of an ethylene oxide production parameter. Once the reaction temperature and/or oxygen concentration vary by a specified amount from their respective reference values in the set of reference reaction condition values, the overall catalyst chloriding effectiveness is changed to account for a shift in the optimum (efficiency-maximizing) value.

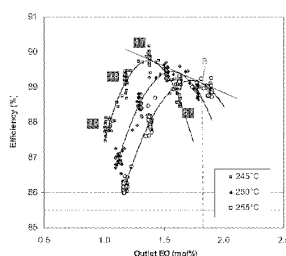


FIG. 1B

Published:

— with international search report (Art. 21(3))