

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
02 June 2022 (02.06.2022)



(10) International Publication Number
WO 2022/115371 A2

(51) International Patent Classification:

B01J 23/42 (2006.01) **B01J 29/80** (2006.01)
B01J 29/74 (2006.01) **C07C 5/27** (2006.01)

(21) International Application Number:

PCT/US2021/060313

(22) International Filing Date:

22 November 2021 (22.11.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

17/105,614 26 November 2020 (26.11.2020) US

(71) Applicant: **CHEVRON U.S.A. INC.** [US/US]; 6001
Bollinger Canyon Road, P.O. Box 6006, San Ramon, Cali-
fornia 94583-0806 (US).

(72) Inventors: **ZHANG, Yihua**; c/o Chevron Corp., P.O. Box
6006, San Ramon, California 94583-0806 (US). **OJO, Ade-
ola Florence**; c/o Chevron Corp., P.O. Box 6006, San Ra-
mon, California 94583-0806 (US). **LEI, Guan-Dao**; c/o
Chevron Corporation, P.O. Box 6006, San Ramon, Califor-
nia 94583-0806 (US).

(74) Agent: **WARZEL, Mark** et al.; P.O. Box 6006, San Ra-
mon, California 94583-0806 (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, DJ, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,
HR, HU, ID, IL, IN, IR, IS, IT, 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: CATALYST AND PROCESS USING SSZ-91 AND ZSM-12

(57) Abstract: An improved hydroisomerization catalyst and process for making a base oil product using a catalyst comprising SSZ-91 molecular sieve and ZSM-12 molecular sieve. The catalyst and process generally involves the use of a catalyst comprising an SSZ-91 molecular sieve combined with a ZSM-12 molecular sieve to produce dewaxed base oil products by contacting the catalyst with a hydrocarbon feedstock. The catalyst and process provide improved base oil cold properties, such as pour point and cloud point, along with other beneficial base oil properties.

WO 2022/115371 A2