

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
24 August 2023 (24.08.2023)



(10) International Publication Number
WO 2023/158434 A1

(51) International Patent Classification:

B01J 35/10 (2006.01) **B01J 21/04** (2006.01)
B01J 37/00 (2006.01) **B01J 23/04** (2006.01)
B01J 23/02 (2006.01) **B01J 23/92** (2006.01)
B01J 20/00 (2006.01) **B01J 37/02** (2006.01)
C07C 5/22 (2006.01)

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).

Published:

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

(21) International Application Number:

PCT/US2022/016979

(22) International Filing Date:

18 February 2022 (18.02.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicant (for US only): **SHELL OIL COMPANY**
[US/US]; P.O. Box 576, Houston, Texas 77001-0576 (US).

(71) Applicant (for all designated States except US): **SHELL
INTERNATIONALE RESEARCH MAATSCHAPPIJ
BV** [NL/NL]; Carel van Bylandtlaan 30, 2596 HR THE
HAGUE (NL).

(72) Inventors: **GINESTRA, Josiane Marie-Rose**; 5207 Mi-
mosa Lane, Richmond, Texas 77469 (US). **BOLINGER,
Cornelius Mark**; 514 Oyster Creek Drive, Sugar Land,
Texas 77478 (US). **SLAUGH, Lynn Henry**; 13415
Copeland Oaks Blvd, Cypress, Texas 77429 (US).

(74) Agent: **PIELECH, Constance M.**; P.O. Box 576, Houston,
Texas 77001-0576 (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, 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,

(54) Title: CATALYST COMPOSITION AND METHOD FOR PRODUCING A CATALYST

(57) Abstract: An isomerization catalyst composition includes an alumina based catalyst, wherein the alumina based catalyst has a pore volume in pores of less than 70 Å pore diameter of less than about 5% of Total Pore Volume, a pore volume in pores of greater than 350 Å pore diameter of less than 10% of Total Pore Volume, a median pore diameter by volume of less than 200 Å, a water pore volume of less than 1.2 cc/g and a surface area of greater than 130 m²/g. The isomerization catalyst composition may include Group I cations, Group II cations and mixtures thereof.

WO 2023/158434 A1