

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
18 June 2020 (18.06.2020)



(10) International Publication Number
WO 2020/120720 A1

(51) International Patent Classification:

C07C 319/20 (2006.01) C07C 323/58 (2006.01)
C07C 323/60 (2006.01) C07D 233/76 (2006.01)

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

(21) International Application Number:

PCT/EP2019/085005

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))

(22) International Filing Date:

13 December 2019 (13.12.2019)

Published:

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

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

18212499.0 14 December 2018 (14.12.2018) EP

(71) Applicant: **EVONIK OPERATIONS GMBH** [DE/DE];
Rellinghauser Strasse 1-11, 45128 Essen (DE).

(72) Inventors: **SUDHOFF, Daniel**; Uferstr. 76, 63456 Hanau
(DE). **HIEROLD, Judith**; Kriegerstr. 15, 30161 Han-
nover (DE). **ROTH, Philipp**; Hermann-Ehlers-Straße 11b,
63456 Hanau (DE). **MOUSSALLEM, Imad**; Bogen Str.
29, 63457 Hanau (DE). **BINDERNAGEL, Ulf**; Käm-
pchenweg 8, 50933 Köln (DE). **RENNER, Christian**; Am
Ziegelacker 12, 63584 Gründau (DE).

(74) Agent: **EVONIK PATENT ASSOCIATION**; c/o Evonik
Industries AG, IP Management, Bau 1042A/PB 15, Paul-
Baumann-Straße 1, 45772 Marl (DE).

(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, 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, 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, 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,

(54) Title: METHOD FOR PRODUCING METHIONINE

(57) Abstract: The present invention pertains to a method for producing methionine or salts or derivatives thereof from hydrogen cyanide (HCN), the method comprising a step of producing 2-hydroxy-4-(methylthio)butyronitrile (MMP-CN), or a crude product mixture comprising MMP-CN, by contacting a hydrogen cyanide (HCN) process gas mixture prepared according to the Andrussov process from methane, ammonia and oxygen, with 3-methylmercaptopropionaldehyde (MMP), wherein the HCN process gas mixture is obtained from the crude HCN process gas mixture by adjusting the amount of ammonia to between 20 % (v/v) and 60% (v/v) of the amount of the ammonia in the crude HCN process gas mixture.



WO 2020/120720 A1