

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
13 January 2022 (13.01.2022)



(10) International Publication Number
WO 2022/011227 A1

(51) International Patent Classification:

C04B 35/10 (2006.01) C04B 35/622 (2006.01)

C04B 35/46 (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).

(21) International Application Number:

PCT/US2021/041040

Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

(22) International Filing Date:

09 July 2021 (09.07.2021)

Published:

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

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/050,381 10 July 2020 (10.07.2020) US

(71) Applicant: FOSBEL WAHL HOLDINGS, LLC

[US/US]; 767 State Route 19 South, Green Creek, OH
43420 (US).

(72) Inventors: PERDUE, Geoffrey, W.; c/o Fosbel Wahl

Holdings, LLC, 767 State Route 19 South, Green Creek, OH
43420 (US). RODRIGUES-SCHROER, Angela; c/o Fos-
bel Wahl Holdings, LLC, 767 State Route 19 South, Green
Creek, OH 43420 (US). CHERICO, Stephen, D.; c/o Fos-
bel Wahl Holdings, LLC, 767 State Route 19 South, Green
Creek, OH 43420 (US).

(74) Agent: DAVIDSON, Bryan, H.; Nixon & Vanderhye

P.C., 901 North Glebe Road, 11th Floor, Arlington, VA
22203-1808 (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,

(54) Title: HIGH EMISSIVITY REFRACTORY MATERIALS AND REFRACTORY COMPONENTS FORMED THEREOF

(57) Abstract: Particulate high-emissivity (high-ε) refractory products include a mixture of (a) a particulate refractory base material which includes at least one particulate binder material, at least one particulate refractory raw material filler material and optionally at least one refractory additive; and (b) a high-ε pigment in an amount sufficient to impart high-ε properties to the refractory product when cured of at least 0.80. The high-ε pigment is homogeneously dispersed throughout the particulate refractory base material and is thereby less susceptible to loss of high-ε properties over time. The particulate high-ε products may be formed into a castable wet mix, an aqueous slurry or an insulating aqueous foam and cured so as to provide a component part of a high temperature refractory structure (e.g., the walls or ceiling of a refractory furnace) having high-ε properties.



WO 2022/011227 A1