

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 September 2004 (10.09.2004)

PCT

(10) International Publication Number
WO 2004/076496 A2

- (51) International Patent Classification⁷: **C08F**
- (21) International Application Number:
PCT/US2004/005251
- (22) International Filing Date: 23 February 2004 (23.02.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/374,266 25 February 2003 (25.02.2003) US
- (71) Applicant (for all designated States except US): **KERR-MCGEE CHEMICAL LLC** [—/US]; 123 Robert S. Kerr Avenue, Oklahoma City, OK 73102 (US).

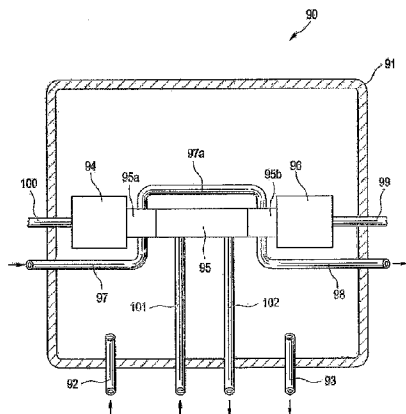
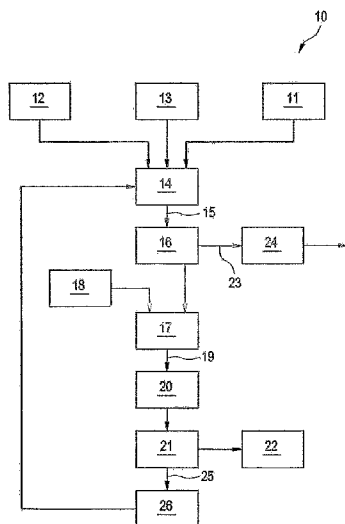
(74) Agent: **MILLER, William, B.**; Kerr-McGee Chemical LLC, 123 Robert S. Kerr Avenue, Oklahoma City, OK 73102 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,

[Continued on next page]

(54) Title: IMPROVED PROCESS FOR MAKING TITANIUM DIOXIDE



(57) Abstract: An improved process for producing titanium dioxide by reacting a titanium dioxide ore with chlorine to produce a gaseous stream containing titanium tetrachloride, condensing titanium tetrachloride from the gaseous stream containing titanium tetrachloride to produce chlorinator tail gas, vaporizing the condensed titanium tetrachloride, reacting the vaporized titanium tetrachloride with oxygen to produce a gaseous stream containing titanium dioxide particles and chlorine, separating the titanium dioxide particles and chlorine to produce burner tail gas, and analyzing the chlorinator tail gas for residual chlorine to control the step of reacting the titanium dioxide ore with chlorine and/or analyzing the burner tail gas for oxygen to control the step of reacting the condensed titanium tetrachloride with oxygen. The improvement is to analyze the chlorinator tail gas for residual chlorine (and/or the burner tail gas for oxygen) using an on-line analyzer.



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

Published:

— without international search report and to be republished upon receipt of that report

Declaration under Rule 4.17:

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

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.