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(21) International Application Number: PCT/US97/18033 (22) International Filing Date: 3 October 1997 (03.10.97) (30) Priority Data: 08/725,717 4 October 1996 (04.10.96) US (71) Applicant (for all designated States except US): SAINT-GOBAIN INDUSTRIAL CERAMICS, INC. [US/US]; 1 New Bond Street, P.O. Box 15138, Worcester, MA 01615-0138 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): DYNAN, Stephen [US/US]; 71A Worcester Road, Sterling, MA 01564 (US). SHINDLE, Jack [US/US]; 62 Emerald Road, Rutland, MA 01543 (US). VAYDA, John [US/US]; 17 New Braintree Road, West Brookfield, MA 01585 (US). (74) Agents: DIMAURO, Thomas, M. et al.; Saint-Gobain Corpo- ration, 1 New Bond Street, P.O. Box 15138, Worcester, MA 01615-0138 (US).	(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report.	

(54) Title: PROCESS FOR MAKING CRACK-FREE SILICON CARBIDE DIFFUSION COMPONENTS**(57) Abstract**

This invention relates to a method for producing a crack-free sintered silicon carbide body, comprising the steps of: a) providing a raw powder batch comprising: i) at least 40 w/o fine grain fraction having a particle size of less than 10 microns, the fine grain fraction comprising silicon carbide; ii) at least 40 w/o coarse grain fraction having a particle size of at least 30 microns, the coarse grain fraction comprising silicon carbide and less than 0.10 w/o free carbon, the raw batch having a total silica content of at least 0.5 w/o, the raw batch having a total silicon carbide content of at least 96 w/o; b) forming the raw batch into a green body; and c) recrystallizing the green body to provide a recrystallized silicon carbide body having a density of between 2.0 g/cc and 2.8 g/cc.