

Title (en)
UNIFORMLY-COATED CERAMIC PARTICLES

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EP 0449990 A4 19930127 (EN)

Application
EP 90902580 A 19891219

Priority
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• US 45020089 A 19891213

Abstract (en)
[origin: WO9006906A1] Solids that are subject to a deleterious reaction with a dispersion medium in which they are suspended can be safely comminuted in that dispersion medium by providing therein a surfactant capable of reacting with the solid at a faster rate than the dispersion medium can so react to thereby suppress the deleterious reaction. In particular, unsintered silicon nitride or silicon carbide which when contacted with water would decompose to form silica on their surfaces can be milled in water, without producing excessive amounts of silica. The dispersions produced are sufficiently stable to be filtered through openings of 2 microns with loss of no more than 5 % of the silicon nitride or carbide. Stable dispersions of solids in liquids can be coated with a different solid by surface precipitation under conditions which preclude the formation of a bulk precipitate. Thus, ceramic nitride or carbide particles are coated with densification aids, such as yttria, by the surface precipitation of the corresponding hydroxides on the ceramic particles in water. Ceramic powders prepared in this way densify to give products with moduli of rupture and fracture toughnesses at least as high as those made from powders conventionally milled in alcohol with lower amounts of densification aid.

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C04B 35/58; B05D 7/00; B32B 9/00

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Citation (search report)
• [X] EP 0212344 A1 19870304 - GTE LABORATORIES INC [US]
• [X] EP 0266641 A2 19880511 - BAYER AG [DE]
• [X] EP 0193970 A2 19860910 - KEMPTEN ELEKTROSCHMELZ GMBH [DE]
• [X] CHEMICAL ABSTRACTS, vol. 107, no. 16, 19 November 1987, Columbus, Ohio, US; abstract no. 139629h, HATORI TAMOTSU & AL. 'Manufacture or sintered bodies' page 342 ;column L ;
• [XD] JOURNAL OF THE AMERICAN CERAMIC SOCIETY vol. 69, no. 2, 1986, pages 88 - 93 SHAW T.M. & PETHICA B. A. 'Preparation and sintering of homogeneous silicon nitride green compacts'
• [X] DATABASE WPIL Week 8321, Derwent Publications Ltd., London, GB; AN 83-50398K & JP-A-58 064 280 (SUMITOMO ELEC. IND. KK.) 16 April 1983
• See references of WO 9006906A1

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