

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 October 2005 (27.10.2005)

PCT

(10) International Publication Number
WO 2005/099652 A1

(51) International Patent Classification⁷: **A61K 6/08**, 6/027

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(21) International Application Number:

PCT/DK2005/000258

(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, KM, 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, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 14 April 2005 (14.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/562,246	15 April 2004 (15.04.2004)	US
PA2004 00592	15 April 2004 (15.04.2004)	DK
PA2004 01188	5 August 2004 (05.08.2004)	DK
60/598,893	5 August 2004 (05.08.2004)	US
PA 2005 00201	10 February 2005 (10.02.2005)	DK

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, 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, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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.

(54) Title: **ULTRASONIC CURING OF DENTAL FILLING MATERIALS**



(57) **Abstract:** The present invention relates to a composite material exhibiting a low or even negligible volumetric shrinkage upon curing, or even a small expansion (e.g. up to 0.5%), in particular composite materials in the form of dental filling materials. The present invention also relates to a method of controlling volumetric shrinkage of a composite material upon curing, and to a method of reconstructing a tooth. The present invention also relates to ultrasonic curing of dental filling materials. The present invention further relates to a population of zirconia particles and methods for preparing such zirconia particles (e.g. zirconia in the tetragonal phase or zirconia in the cubic phase). The martensitic transformation of the filler ingredients is, e.g., triggered by application of ultrasound or by a chemical trigger.

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