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(21) International Application Number: PCT/EP97/07156 (22) International Filing Date: 15 December 1997 (15.12.97) (30) Priority Data: 08/767,058 16 December 1996 (16.12.96) US (71) Applicant: SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V. [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR The Hague (NL). (72) Inventors: IYER, Shridhar, Ratnaswamy; 16930 Ascot Meadow Drive, Sugar Land, TX 77479 (US). WONG, Pui, Kwan; 6431 Mercer Street, Houston, TX 77005 (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, GM, GW, HU, ID, 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, <u>SG</u> , SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: THERMALLY REWORKABLE BINDERS FOR FLIP-CHIP DEVICES (57) Abstract A semiconductor device is attached to a supporting substrate by a plurality of solder connections that extend from the supporting substrate to the semiconductor device and the gap between the supporting substrate and the semiconductor device is filled with a reworkable composition comprising: (a) a thermally reworkable cross-linked resin produced by reacting at least one dienophile having a functionality greater than one and at least one 2,5-dialkyl substituted furan-containing polymer, and (b) at least one filler present in an amount from 25 to 75 percent by weight based upon the amount of components (a) and (b). Such a process provides a readily reworkable semiconductor assembly.		