

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 September 2002 (12.09.2002)

PCT

(10) International Publication Number
WO 02/070191 A1

(51) International Patent Classification⁷: **B23K 35/36**,
H01L 21/56, 23/29

(74) Agent: **BAUMAN, Steven, C.**; Loctite Corporation, 1001
Trout Brook Crossing, Rocky Hill, CT 06067 (US).

(21) International Application Number: PCT/US01/47898

(22) International Filing Date:
13 December 2001 (13.12.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/755,146 8 January 2001 (08.01.2001) US

(71) Applicant (for all designated States except US): **BAU-
MAN, Steven, C.** [US/US]; Loctite Corporation, 1001
Trout Brook Crossing, Rocky Hill, CT 06067 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KONARSKI, Mark,
K.** [US/US]; 4 Merritt Lane, Old Saybrook, CT 06475
(US). **KRUG, John, P.** [US/US]; Unit D2, 400 Washing-
ton Street, Middletown, CT 06457 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,
ZA, ZW.

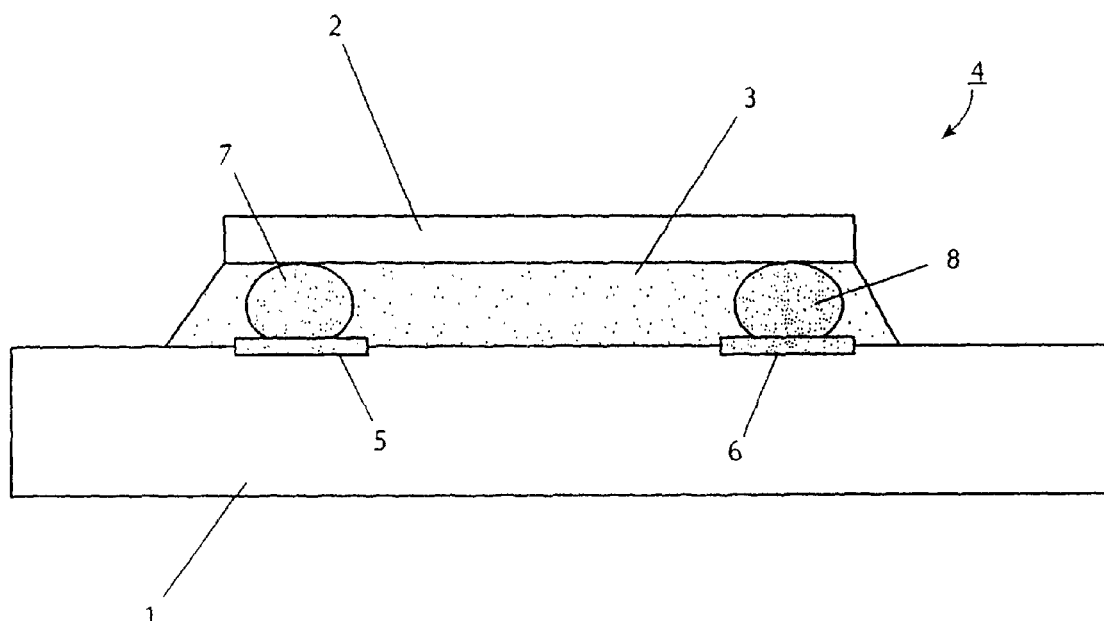
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: FLUXING UNDERFILL COMPOSITIONS



(57) Abstract: This invention relates to fluxing underfill compositions useful for fluxing metal surfaces in preparation for providing an electrical connection and sealing the space between semiconductor devices, such as chip size or chip scale packages ("CSPs"), ball grid arrays ("BGAs"), land grid arrays ("LGAs"), flip chip assemblies ("FCs") and the like, each of which having a semiconductor chip, such as large scale integration ("LSI"), or semiconductor chips themselves and a circuit board to which the devices or chips, respectively, are electrically interconnected. The inventive fluxing underfill composition begins to cure at about the same temperature that solder used to establish the electrical interconnection melts.



-
- *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.*