

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶: B05D 5/12, B32B 7/00, 31/00, D04H 1/16, 1/04, H01B 1/02, 1/06, B23K 35/34, C08G 59/40	A1	(11) International Publication Number: WO 99/03597 (43) International Publication Date: 28 January 1999 (28.01.99)
(21) International Application Number: PCT/US98/15031 (22) International Filing Date: 21 July 1998 (21.07.98) (30) Priority Data: 08/897,968 21 July 1997 (21.07.97) US 08/926,159 9 September 1997 (09.09.97) US 09/012,382 23 January 1998 (23.01.98) US (63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/897,968 (CON) Filed on 21 July 1997 (21.07.97) (71) Applicant (for all designated States except US): AGUILA TECHNOLOGIES, INC. [US/US]; Suite 107, 310 Via Vera Cruz, San Marcos, CA 92069 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): CAPOTE, M., Albert [US/US]; 4151 Parkside Place, Carlsbad, CA 92008 (US). ZHOU, Liqui [CN/US]; 845 Brooktree Lane #226, Vista, CA 92083 (US). ZHU, Xioqui [CN/US]; Apartment 158, 850 Brooktree Lane, Vista, CA 92083 (US). ZHOU, Zhim-	ing [CN/US]; 2425 Larpeur Avenue #313, Maplewood, MN 55109 (US). (74) Agents: DILLAHUNTY, T., Gene et al.; Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404 (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, HR, 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, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, 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, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, 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: POLYMERIZABLE FLUXING AGENTS AND FLUXING ADHESIVE COMPOSITIONS THEREFROM		
(57) Abstract		
A thermally curable adhesive composition that includes a fluxing agent that also acts as an adhesive is provided. The composition includes: (a) a fluxing agent represented by the formula RCOOH, wherein R comprises a moiety having two or more carbon-carbon double bonds wherein in one embodiment, at least one is within an acrylate or methacrylate group, and which may further contain at least one aromatic moiety; (b) a carboxylic acid neutralizing agent; (c) optionally, an effective amount of a cross-linkable diluent; (d) optionally, an effective amount of a source of free radical initiators; and (e) optionally, an effective amount of a resin. By employing an acrylate, methacrylate, or phenol in the structure of the adhesive flux, the cure temperature and moisture absorption characteristics can be significantly improved. The composition can be applied directly onto the surface(s) of devices that are to be joined electrically and mechanically. These devices include, printed circuit substrates, connectors, components, cables, and other electrical devices having metallization patterns to be soldered together by means of a solder-bumped pattern on one or both surfaces. Alternatively, a solder paste, comprising solder powder mixed with the fluxing agent of the present invention can be used. During the reflow step, the fluxing agent promotes wetting of the solder to the metallization patterns and, simultaneously, the fluxing agent itself cross-links to mechanically bond and encapsulate the surfaces and their metallizations. The compositions can also be used to formulate sinterable conductive ink.		