



(51) International Patent Classification:

B23K 35/28 (2006.01) *B23K 1/00* (2006.01)
B23K 35/02 (2006.01) *B23K 35/26* (2006.01)
C22C 18/00 (2006.01) *C22C 11/00* (2006.01)
C22C 18/04 (2006.01) *C22C 13/00* (2006.01)

(21) International Application Number:

PCT/SG2015/050073

(22) International Filing Date:

15 April 2015 (15.04.2015)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10201401618Y 17 April 2014 (17.04.2014) SG
10201402705V 28 May 2014 (28.05.2014) SG

(71) Applicant: **HERAEUS MATERIALS SINGAPORE PTE. LTD.** [SG/SG]; Block 5002, Ang Mo Kio Avenue 5, #04-12, Techplace II, Singapore 569871 (SG).

(72) Inventors: **PAN, Wei Chih**; 683A, Choa Chu Kang Crescent, #12-404, Singapore 681683 (SG). **BAQUIRAN, Joseph Aaron Mesa**; 493E, Tampines Street 43, #07-334, Singapore 524493 (SG). **REYNOSO, Inciong**; 7 Rivervale Crescent, #04-17, Singapore 545085 (SG).

(74) Agent: **DONALDSON & BURKINSHAW LLP**; P.O. Box 3667, Robinson Road Post Office, Singapore 905667 (SG).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

10 December 2015

(54) Title: LEAD-FREE EUTECTIC SOLDER ALLOY COMPRISING ZINC AS THE MAIN COMPONENT AND ALUMINUM AS AN ALLOYING METAL

(57) Abstract: Lead-free solder alloy comprising zinc (Zn) as the main component and aluminum (Al) as an alloying metal, wherein the solder alloy is a eutectic having a single melting point in the range of 320 to 390 °C (measured by DSC at a heating rate of 5 °C min⁻¹).

