

ABSTRACT

COMPOSITE METAL MATRIX CASTINGS AND SOLDER COMPOSITIONS, AND METHODS

A composite composition and methods for making the composition, providing a metal matrix and dispersed inorganic oxide particles with a bound organofunctional group on a surface of the particles are described. A composite solder composition and methods for making and using the composition, providing a metal matrix and dispersed inorganic oxide particles with a bound organofunctional group on a surface of the particles are described. An apparatus comprising this composite solder composition is also described. In particular, organofunctional POSS, and POS, particles are described. The compositions provide cast metals and solders.