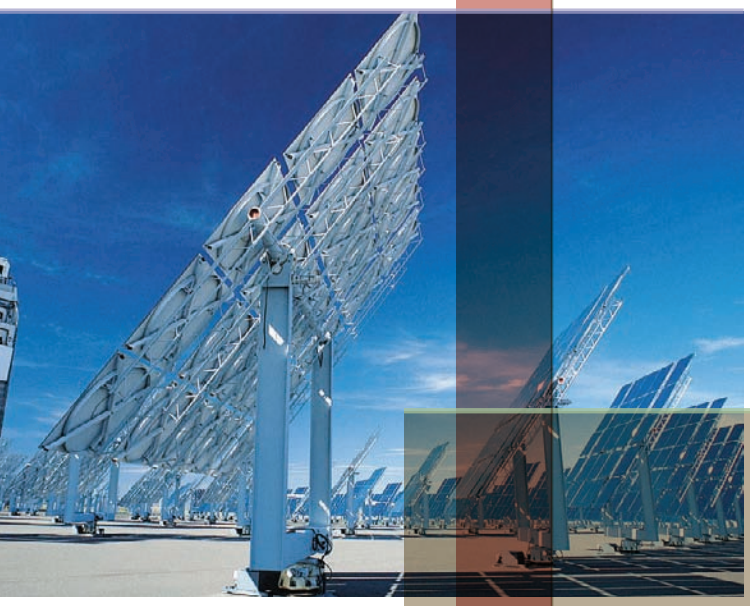
PRODUCT

EWI SonicSolder™



INTRODUCTION

EWI SonicSolder is an exciting innovation for wetting materials previously considered to be non-solderable. The EWI-patented binary Sn-Al lead-free solder alloy allows for successful joining of aluminum, copper, titanium, glass, ceramics, and other difficult-to-bond materials. It can be used for both micro-joining and large scale applications, is bio-compatible, and can be readily formed into usable shapes, such as wire and foil, using conventional melting practices.

EWI's patented EWI SonicSolder is a lead free and fluxless solder for ultrasonic joining.

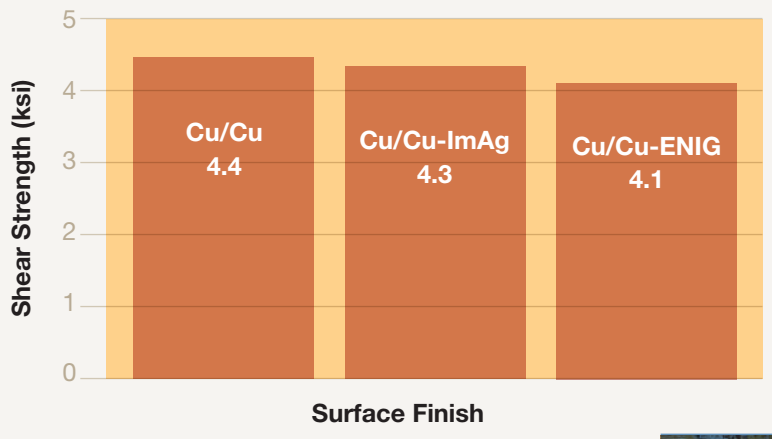
KEY FEATURES OF EWI SONICSOLDER

- Lead-free
- Simple binary composition containing low-cost metals
- Usable forms easily produced by conventional melting practices
- Amenable to alloy modifications
- Can bond any metal, glass or ceramic when used with ultrasonic soldering
- Biocompatibility for medical devices
- Shear strengths on the order of 4-5 Ksi
- No flux required when used with ultrasonic soldering
- Dissimilar metals or materials joining

ADVANTAGES

EWI SonicSolder offers multiple advantages for electronics manufacturers. Using it with ultrasonic soldering eliminates the need for fluxes and the need to metalize ceramics, glass, and other unplated/non-metalized materials. Its mechanical properties are comparable to industry standard lead-free solders like Sn-3.0Ag-0.5Cu. Typical shear strength values of 4-5 ksi have been obtained on copper substrates with gold and silver surface finishes and in other metal-to-metal (titanium, aluminum) combinations.

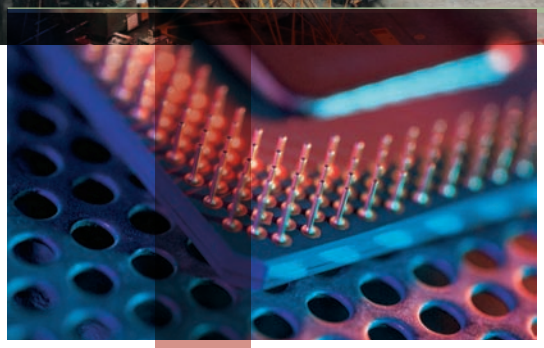
There are also cost-advantages associated with EWI SonicSolder. RoHS legislation has increased the popularity of lead-free soldering among electronics manufacturers, but Pb-free solders can be costly. Unlike other products available on the market, EWI SonicSolder does not contain expensive noble metals like silver and gold. Plus, its simple binary composition lends itself to further alloy development for applications requiring higher strength.



Shear Strength of EWI SonicSolder on copper substrates with different surface finishes.

The medical industry can also benefit from EWI SonicSolder, thanks to its biocompatibility afforded by the high Sn-content. It is being used in the bonding of nitinol shape memory alloy—the workhorse of the medical device industry. Using it during ultrasonic soldering of nitinol to other dissimilar metals, such as stainless steel, has also been demonstrated.

Besides electronics and medical applications, EWI SonicSolder is also being used successfully in aerospace applications for large area joining of aluminum parts. Also, it can be used to join thermal management system components and sputtering targets.



MORE INFORMATION

For more information on EWI SonicSolder, please call 614.688.5250 or email products@ewi.org. You can also visit our website at ewi.org/products/sonicsolder.asp.

1250 Arthur E. Adams Dr.
Columbus OH 43221

614.688.5000

ewi.org

© 2009 Edison Welding Institute. All rights reserved. 0709
Sonic is a registered trademark of EWI.