

## REL22 HIGH-RELIABILITY LEAD-FREE SOLDER ALLOY

### FEATURES

- Enhanced Durability for Use in Extremely Harsh Environments
- Reliability Equal to Sn/Ag/Bi/Sb/Ni/Cu Alloys with Wider Assembly Process Window
- Mitigates Tin Whisker Formation
- Creep Rates Lower Than SAC Alloys
- High Reliability / High Strength
- Improved Thermal Cycling Performance
- Improved Wetting Versus All Low/No-Silver Alloys
- For use in Lead-Free Process Only
- Complies with IPC J-STD-006

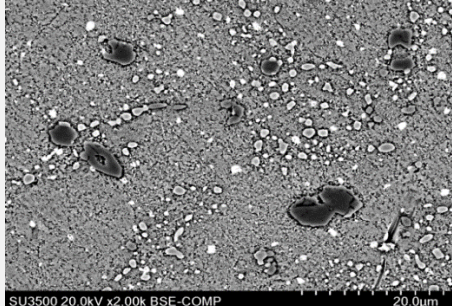
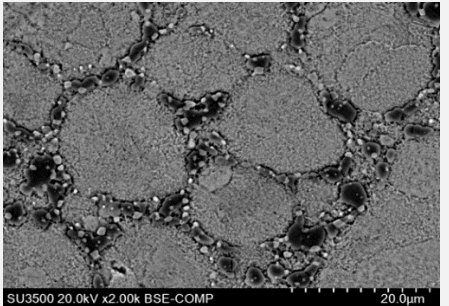
### DESCRIPTION

AIM's REL22™ alloy is comprised of tin, bismuth, silver, copper, antimony, nickel and trace amounts of elemental grain structure refiners. The alloy provides significantly improved durability for use in applications where thermal shock, vibration and high g-forces are a concern. REL22 is the solution when SAC alloys are incapable of surviving in harsh environments, such as automotive, aerospace and geographical exploration equipment.

### AVAILABILITY

REL22 is available in bar (1.1 kg / 2.5 lb), solid feeder wire (diameters of 3.175 mm / .125"), and no clean solder paste (M8 T4 500 gr jar). Other product options are available upon special request.

### PHYSICAL PROPERTIES

| Parameter  | Results   |   |
|--|---|---|
|  | REL22   | SAC305  |
| Melting Range                                    | 210-212°C   | 217-220°C   |
| Wetting Time                                     | 0.8/sec   | 0.9/sec   |
| Wetting Force                                    | 4.4/mN  | 4.4/mN  |
| Hardness   | 29/HV10   | 14/HV10   |
| Thermal Conductivity                             | 66 W/ m· K  | 58 W/ m· K  |
| CTE  | 25.91 ppm/°C  | 21.0 ppm/°C   |
| Electrical Resistivity                           | 0.152 μΩ*m  | 0.132 μΩ*m  |
| Electrical Conductivity IACS                     | 11.3%   | 16.6%   |
| Tensile Strength (aged 150°C for 24 hours)       | 86 MPa  | 34 MPa  |
| Microstructure Analysis (aged 150° for 24 hours) |  |  |

# TECHNICAL DATA SHEET



## HANDLING & STORAGE

Solid wire and bar solder products have a shelf life of 7 years under proper storage conditions. For other product categories, refer to those product specific TDS's. Consult the SDS for specific handling procedures.

## SAFETY

Use with adequate ventilation and proper personal protective equipment. Refer to the accompanying Safety Data Sheet for any specific emergency information. Do not dispose of any hazardous materials in non-approved containers.

## CLEANING

Refer to data sheets provided by the flux manufacturer.