

## 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

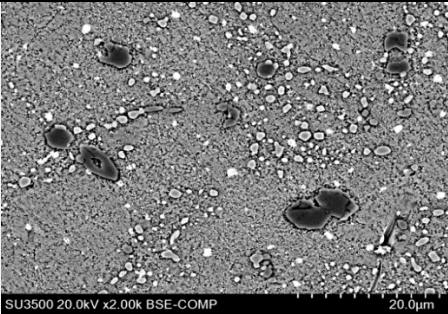
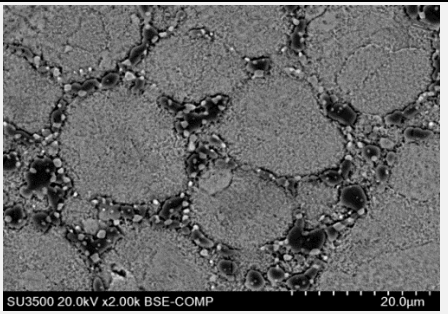
AIM's REL22™ alloy is comprised of tin, bismuth, silver, copper, antimony, nickel, and trace amounts of elemental grain structure refiners. The alloy provides significantly improved durability for use in applications where thermal shock, vibration and high g-forces are a concern. REL22 is the solution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

### PHYSICAL PROPERTIES

PARAMETER	RESULTS	
	REL22	SAC305
Melting Range	210-212°C	217-220°C
Density	7.44 g/cm <sup>3</sup>	7.38 g/cm <sup>3</sup>
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

\*All information for reference only. Not to be used as incoming product specifications or for process design. Consult Certificate of Analysis for product specific information.

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PARAMETER	RESULTS	
	REL22	SAC305
Microstructure Analysis (aged) 150° for 24 hours	 <p>SU3500 20.0kV x2.00k BSE-COMP 20.0µm</p>	 <p>SU3500 20.0kV x2.00k BSE-COMP 20.0µm</p>

**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.

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