



**Metallic Resources**

## Sn63/Pb37

### Electrolytic Wave Solder Product Bulletin

#### Purity Improves Process

Metallic Resources' standard Sn63/Pb37 eutectic alloy bar solder is manufactured from electrolytically processed tin and lead to create solder so pure it far exceeds most common specification requirements. Electrolytic solder is compatible with all fluxes, including "no-clean" fluxes. Standard packaging is 25-pound boxes containing cast bars. Metallic Resources also offers nuggets, ingots, feeder bars, and other metal forms available upon request.

#### Versatile and Reliable

Metallic Resources' electrolytic solder is specially designed for use in all wave, dip, and tinning soldering applications. High purity makes it especially beneficial to hot air leveling applications and high production rate operations that require consistent and reliable performance. It is primarily used in printed circuit board fabricating and assembly operations common to the electronics market.

#### Higher Yield, Less Waste

High purity electrolytic solder generates less dross compared to all other solders. Less dross results in more soldered joints per pound of solder and greater cost-effectiveness. Solder pots using electrolytic solder can be operated at lower temperatures to provide energy savings, extended pot life, reduced thermal stress, and reduced potential of contamination. Lower viscosity improves the fluidity, which in turn improves the solder's wetting capability.

The electrolytic manufacturing process assures batch-to-batch consistency for predictable solder performance in the solder pot. The process removes metallic and non-metallic impurities often found in "virgin metals" and reclaimed solders to provide a purer tin/lead solder. This purity results in a smaller crystalline structure which exhibits a shinier, more brilliant solder appearance.



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## Exceeds Industry Standards

Standard Sn63/Pb37 bar solder conforms to the requirements of IPC Specification J-STD-006. It meets or exceeds ASTM B-32, and is approved for military usage. ITAR does not apply to this product. Certificates of Conformance and Analysis are automatically provided with each shipment.

## Physical Properties

<b>Melting Point</b>	361°F
<b>Density</b>	.3032 lbs. per cubic inch
<b>Brinell Hardness</b>	15
<b>Viscosity at 282°C</b>	.0197 poise
<b>Surface Tension at 282°F</b>	490 dyne/cm
<b>Coefficient of Linear Thermal Expansion</b>	0.0000118 per degree F
<b>Electrical Conductivity</b>	69,000 Mho/cm
<b>Electrical Conductivity</b> (expressed as a % of the International Annealed Copper Standard)	11.9% IACS
<b>Electrical Resistivity</b>	0.0000145 Ohm-cm
<b>Thermal Conductivity at 80°F</b>	28.9 BTU/hr.-Ft-per degree F

<b>Mechanical Properties</b>	
<b>Tensile Strength</b>	7,700 psi
<b>0.1% offset Yield Strength</b>	1,900 psi
<b>0.2% offset Yield Strength</b>	2,300 psi
<b>Tensile Elongation</b>	32%
<b>Shear Strength</b>	5,400 psi
<b>Izod Impact Strength</b>	14 foot-pounds
<b>Stress to Produce a Creep Rate 0.0001 in/in/day</b>	333 psi
<b>Modulus of Elasticity</b>	4,350,000 psi

	<b>Technical Specifications</b>	
	<b>Sn63 bar MRI Specification</b>	<b>J-STD-006 Alloy Specification</b>
<b>Sn</b>	63.0 ± 0.5	63.0 ± 0.5
<b>As</b>	.0080 (max)	.0300 (max)
<b>Sb</b>	.0500 (max)	.2000 (max)
<b>Au</b>	.0020 (max)	.0500 (max)
<b>Fe</b>	.0100 (max)	.0200 (max)
<b>Ni</b>	.0080 (max)	.0100 (max)
<b>Bi</b>	.0120 (max)	.1000 (max)
<b>Al</b>	.0005 (max)	.0050 (max)
<b>Cu</b>	.0080 (max)	.0800 (max)
<b>Ag</b>	.0080 (max)	.1000 (max)
<b>Zn</b>	.0008 (max)	.0030 (max)
<b>Cd</b>	.0010 (max)	.0020 (max)
<b>In</b>	.0030 (max)	.1000 (max)
<b>Pb</b>	Balance	Balance

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