



## SAC305 Lead Free Water Soluble Wire Solder Product Bulletin

### High Purity Wire Solder Improves Process

Metallic Resources' SAC305 lead free water soluble wire solder is used for touchup applications when correcting defects on printed circuit boards. The SAC305 alloy is comprised of Sn96.5/Ag3.0/Cu0.5 and is manufactured to far exceed the most common specification requirements. It is **RoHS compliant** and does not contain any substances of very high concern (SVHC). It is **halogen free**.

Standard diameters include .015", .020", .032", and .062" wire with 2.2% flux. Other flux concentrations (1.1% and 3.3%) are available upon special order. Standard packaging includes 25 pounds per box on one pound spools. Five pound spools and heavier pay-off packs are also available.

### A Wide Range of Uses

Metallic Resources' SAC305 lead free water soluble wire solder is specially designed for use in all hand soldering applications. It is primarily used for manual soldering and repair work of printed circuit board assembly operations common to the electronics market.

### Engineered for Ease of Use

Solder iron tip temperatures should be in a range of 650 to 850°F (343 to 454°C) for best results. The solder iron should be held at a 45° to 60° angle to the work surface. The iron should contact both the PCB pad surface and the component lead. The solder and flux should flow onto both the lead and pad (or barrel) to achieve the best flux activity for the joint being worked.



All water soluble fluxes tend to absorb moisture and some spattering is to be expected. Flux spattering can be minimized by applying the solder wire between the joint to be soldered and the soldering tip of the iron. Cored wire solder should not be directly applied to the tip of the soldering iron. After the re-work application, the flux residue on the board must be cleaned and removed with hot distilled or deionized water (140°F or 60°C minimum).

The product shelf life is indefinite when stored in a clean, dry area (72°F ± 10°F) away from moisture and sunlight. Do not store near fire or flames.

### Standards Met

Metallic Resources' SAC305 lead free water soluble wire solder passes BELLCORE and IPC standards and meets MIL SPEC requirements. Supporting documentation is available upon request. It is Telecommunications acceptable. The flux classification per IPC J-STD-004 is ORH1. The Surface Insulation Resistance (SIR) is  $1.49 \times 10^{10}$  ohms.



**METALLIC RESOURCES, INC.**

## Certified

Metallic Resources' SAC305 bar solder alloy exceeds the requirements of Specification IPC J-STD-006B. Certificates of Conformance and Analysis are provided with each shipment.

## Physical Properties

Melting Point (°C)	217
Density (g/cm <sup>3</sup> )	7.4
Operating temp. (°C)	250-275
Tensile Strength (M Pa)	52
Elongation	27
Thermal Conductivity (J/m•s •K)	64
Electrical Resistance (μ m)	0.15
Thermal Shock -10 to +100°C	>1000 cycles

Alloy SAC305 (Sn96.5/Ag3.0/Cu0.5)			
	J-STD-006B	MRI Specs	MRI Typical Analysis
<b>Sn</b>	96.5000 (±0.5)	96.3-96.8	96.4600
<b>As</b>	0.0300	0.0035 (max)	0.0015
<b>Sb</b>	0.0500	0.0250 (max)	0.0150
<b>Au</b>	0.0500	0.0002 (max)	0.0002
<b>Fe</b>	0.0200	0.0050 (max)	0.0030
<b>Ni</b>	0.0100	0.0060 (max)	0.0030
<b>Bi</b>	0.1000	0.0100 (max)	0.0040
<b>Al</b>	0.0050	0.0010 (max)	0.0001
<b>Cu</b>	0.5000 (±0.1)	0.5000 (±0.1)	0.5000
<b>Ag</b>	3.0000 (±0.2)	3.0000 (±0.2)	3.0100
<b>Zn</b>	0.0030	0.0010 (max)	0.0005
<b>Cd</b>	0.0020	0.0010 (max)	0.0005
<b>In</b>	0.1000	0.0100 (max)	0.0050
<b>Pb</b>	0.1000	0.0500 (max)	0.0250

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Recommendations made by this company and its representatives are based upon test data, experiments, and experience believed to be reliable. No guarantee of accuracy is made, however. All products are sold upon the condition that the buyer will make his own tests and assume the responsibility for the suitability of the product under his application and service conditions. Statements made herein will vary according to the nature of the surfaces to which the product is applied, application technique, and service condition. We in no event assume liability beyond the purchase price of our products involved and make as a condition of sale that we will refund the purchase price or replace materials proven to be defective and reported in a timely fashion, but no later than six (6) months after shipment. No representative of the manufacturer and/or seller has the authority to alter or extend these conditions.