



SAC0307 Lead Free Electrolytic

Wave Solder Product Bulletin

Purity Improves Process

Metallic Resources' SAC0307 Lead-free solder alloy is manufactured from electrolytically processed tin and other elements to create solder so pure it far exceeds the most common specifications. It has been independently tested to meet all restrictions on hazardous substances. **It is RoHS compliant.** The specific alloy is Sn99/Ag0.3/Cu0.7. The liquidus temperature is about 227°C and recommended operating temperature ranges are between 260-265°C. Other variations on the tin/copper, tin/silver and tin/silver/copper combination alloys are also available, depending upon customer preference. Standard packaging includes 50 pound boxes containing cast bars, ingots, or feeder bars.

When copper content approaches 1.0%, Metallic Resources offers a replenishment alloy, SAC0307-R to lower the copper content of the solder bath.

Versatile Uses

Metallic Resources' high purity SAC0307 electrolytic alloy has been specially formulated and designed for use in all wave soldering and tin and dip soldering applications. It is ideally suited for the assembly of printed circuit boards utilizing existing or new equipment found in the electronics market.

Benefits

Metallic Resources' high purity SAC0307 alloy is manufactured using an electrolytic process, which creates an alloy that is lower in viscosity, which improves the fluidity. Greater fluidity improves the alloys' wetting capability for better through-hole fill, and reduces necessary rework including bridging, icicling, cobwebbing and flagging.



High purity electrolytic solder is environmentally friendly, and generates less dross compared to other "virgin grade" Lead-free alloys. Less dross generation results in a greater number of joints per pound of solder consumed and greater cost-effectiveness through less waste due to solder loss. Energy savings, extended pot life, reduced thermal stress, and reduced potential of contamination are all benefits derived from the electrolytic manufacturing process.

The electrolytic manufacturing process assures batch-to-batch consistency for predictable performance in the solder pot. The process removes most metallic and nonmetallic impurities often found in "virgin metals" to provide a purer solder alloy. This purity results in a smaller crystalline structure which exhibits a shinier, more brilliant solder appearance when compared to other SAC0307 alloys.



METALLIC RESOURCES, INC.

Certified

Metallic Resources' SAC0307 bar solder alloy exceeds the requirements of Specification IPC J-STD-006B. Certificates of Conformance and Analysis are provided with each shipment.

Physical Properties

Liquidus Temp. (°C)	227
Density (g/cm ³)	7.4
Operating temp. (°C)	260-265
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 SAC0307 (Sn99/Ag0.3/Cu0.7)			
	J-STD-006B	MRI Spec	MRI Typical Analysis
Sn	99.0000 (±0.5)	98.7-99.3	99.0400
As	0.0300	0.0035 (max)	0.0015
Sb	0.0500	0.0250 (max)	0.0150
Au	0.0500	0.0002 (max)	0.0002
Fe	0.0200	0.0050 (max)	0.0030
Ni	0.0100	0.0060 (max)	0.0030
Bi	0.1000	0.0100 (max)	0.0040
Al	0.0050	0.0010 (max)	0.0001
Cu	0.7000 (±0.1)	0.7000 (±0.1)	0.7000
Ag	0.3000 (±0.1)	0.3000 (±0.1)	0.3000
Zn	0.0030	0.0010 (max)	0.0005
Cd	0.0020	0.0010 (max)	0.0005
In	0.1000	0.0100 (max)	0.0050
Pb	0.1000	0.0500 (max)	0.0250

SAC0307-0406

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.