



Metallic Resources



MRI100™ Lead-Free

Electrolytic Wave Solder
Hot Air Leveling
Product Bulletin

Purity Improves Process

Metallic Resources' MRI100™ silver free, lead free solder is manufactured using electrolytically processed tin. The lead-free solder alloy consists of Sn-Cu-Ni-Ge. It is RoHS compliant. Standard packaging includes 25-pound boxes containing cast bars. Metallic Resources also offers ingots, feeder bars, and other metal forms available upon request.

Metallic Resources offers a variety of replenishment alloys and additives to help maintain solder bath consistency.

Versatile Uses

Metallic Resources' high-purity electrolytic MRI100™ alloy has been formulated for all Wave Solder operations. It is ideally suited for the fabrication (hot air leveling) of PCB's utilizing existing equipment.

Benefits

This alloy provides brighter, shinier, less grainy solder joints when compared SAC 305 alloy. The lower viscosity improves the fluidity, which in turn improves the solder's wetting capability and reduces necessary re-work 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 results in a greater number of joints per pound of solder consumed and greater cost effectiveness. 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 non-metallic 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.



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Exceeds Industry Standards

Metallic Resources' MRI100™ lead free bar solder conforms to the requirements of IPC Specification J-STD-006. It meets or exceeds ASTM-32, and is approved for military usage. It complies with Directive 2011/65/EU and Directive 2015/863/EU Restriction of Hazardous Substances (RoHS 2 and 3). Certificates of Conformance and Analysis are provided with each shipment.

MRI100™ Specification

	MRI100 Specification	J-STD-006 Specification
Sn	Balance	Balance
As	.0300 (max)	.0300 (max)
Sb	.0250 (max)	.2000 (max)
Au	.0200 (max)	.0500 (max)
Fe	.0050 (max)	.0200 (max)
Ni	.0400 - .0700	.0400 - .0700
Bi	.0100 (max)	.1000 (max)
Al	.0010 (max)	.0050 (max)
Cu	.6000 - .8000	.6000 - .8000
Ag	.0200 (max)	.1000 (max)
Zn	.0020 (max)	.0030 (max)
Cd	.0020 (max)	.0020 (max)
In	.0100 (max)	.1000 (max)
Ge	.0050 - .0090	.0050 - .0090
Pb	.0500 (max)	.0700 (max)

Physical Properties

Melting Point	227°C
Density	7.4 g/cm ³
Operating Temperature	250-275°C