



# MRI100™ Lead Free Electrolytic Wave Solder 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 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.



**METALLIC RESOURCES, INC.**

Manufacturers of Superior Quality Electrolytic Solders

2368 East Enterprise Parkway • Twinsburg, Ohio 44087 • Phone: 330.425.3155

## MRI100™ Specification

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

## Physical Properties

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

## 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-WS 1120

**DISCLAIMER.** This Product Bulletin is provided for general informational purposes only. While the information contained in this Product Bulletin (and any recommendations made by Metallic Resources, Inc. ("MRI") and its authorized representatives relating to the subject matter of this Product Bulletin) is based upon test data, experiments, and experience and is believed to be reliable, no guarantee of accuracy is made. Statements made herein will vary according to the nature of the surfaces to which the product is applied, application technique, and service condition. All products are sold "as is" and upon the condition that the buyer will make their own tests and assume the responsibility for determining the suitability and fitness of the product(s) for their particular purpose. This Product Bulletin is not intended, and shall not be construed, to warrant or guarantee the performance of the described products. MRI shall not be liable for any loss or injury arising out of the use of the information contained herein or the use, misuse or inability to use any products designated herein. In any event, MRI assumes no liability beyond the purchase price of the products involved. As a condition of sale, MRI will (at its option and as buyer's sole and exclusive remedy) 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.