

Material Product Data Sheet

Tin and Tin Alloy (Babbitt) Thermal Spray Wires

Thermal Spray Solid Wire Products: Metco Tin, Sprababbitt A

1 Introduction

Metco Tin and Sprababbitt thermal spray wires are designed for application using electric arc wire spray or combustion wire spray.

Metco Tin is a solid wire used for protection of containers used in food processing/storage and for the repair of glass-lined tanks. Metco Tin produces very dense coatings from 0.25 to 0.65 mm (0.01 in to 0.025 in) thick that provide corrosion protection from various solvents. It is more noble than steel in the electrochemical series for metals and alloys. Coatings of Metco Tin can also be used as an effective EMF/RFI shield. Occasionally, Metco Tin is used as a bond coat for high melting point materials such as Monel (nickel-copper), nickel, bronze and stainless steel.

Sprababbitt A is a special high grade, tin-based babbitt wire that is manufactured exclusively for thermal spray. Coatings of Sprababbitt A are particularly suitable for high speed and heavy duty bearing surfaces that required coatings of the highest possible quality, especially for critical applications. The coatings are ductile, low in oxides and exhibit a bright, metallic appearance.

1.1 Typical Uses and Applications

Metco Tin is recommended for:

- Glass-lined tanks
- EMF/RFI shielding for electronic devices
- Corrosion resistance to solvents
- Solderable coatings for electrical connections

Sprababbitt A is recommended for:

- High-speed, heavy-duty bearing surfaces

Quick Facts

Classification	Wire, tin-based
Chemical formula	Sn or Sn 3.5Cu 7.5Sb
Manufacture	Drawn wire
Density	6.43 or 6.67 g/cm ³
Melting Point (approx.)	232 or 354 °C (450 or 669 °F)
Purpose	Corrosion protection, EMF/RFI shielding or bearing surfaces
Process	Electric Arc Wire Spray or Combustion Wire Thermospray™

* With suitable bond coat








2 Material Information

2.1 Chemical Composition

Product	Weight Percent (nominal)			
	Sn	Sb	Cu	Other
Metco Tin	99.8	–	–	0.20
Sprababbitt A	Balance	7.5	3.5	0.25

2.2 Morphology and Available Wire Sizes

Product	Morphology	Available Wire Diameters			
		1.6 mm (14 ga)	2.5 mm (0.098 in)	3.2 mm (1/8 in)	4.76 mm (3/16 in)
Metco Tin	Solid	–	–		–
Sprababbitt A	Solid				

Recommended Spray Process:  Electric Arc Wire Spray,  Combustion Wire Spray

2.3 Key Selection Criteria

- Choose Metco Tin for coatings that:
 - Resist corrosion from various solvents
 - Provide EMF/RFI shielding
 - Produces solderable coatings
- Choose Sprababbitt A for coatings that:
 - Withstand heavy duty bearing applications

2.4 Related Products

- Oerlikon Metco offers a wide range of wire materials that are appropriate for corrosion resistance in various types of environments and mediums. Please consult with your Oerlikon Metco Sales Representative for an appropriate corrosion-resistant wire material for your specific application.
- Metco Aluminum, Metco Copper and Metco Silver can also be used as solderable coatings for electrical connections when such materials are more appropriate for the electrical application.
- Metco Zinc and Metco ZnAl can also be used as coatings for EMF/RFI shielding on plastic components. Note that these materials are more galvanically active than Metco Tin.

2.5 Customer Specifications

Product	Customer Specification	Certification When Origin Is:	
		U.S.A.	Germany
Metco Tin	American Welding Society (AWS) C2.25/C2.25M W-Sn	●	●
Sprababbitt A	American Welding Society (AWS) C2.25/C2.25M W-SnSbCu-1	●	●

3 Coating Information

3.1 Coating Parameters

Please contact your Oerlikon Metco Account Representative for parameter availability. For specific coating application requirements, the services of Oerlikon Metco's Coating Solution Centers are available.

Recommended Spray Guns

Combustion Wire	Electric Arc Wire
Metco 16E series	Metco LD/U2
	SmartArc PPG

4 Commercial Information

4.1 Ordering Information and Availability

Product	Order No.	Wire Diameter	Package Size	Package Type	Availability	Dist.	Origin
Metco Tin	1030421	3.2 mm (1/8 in)	25 lb (11 kg)	Coil	Stock	Global	U.S.A.
Metco Tin	1002488	3.2 mm (1/8 in)	12 kg (26 lb)	Hasp Spool	Special Order	Europe	Germany
Sprababbitt A	1000423	1.6 mm (14 ga)	25 lb (11 kg)	Dorn Spool	Stock	Global	U.S.A.
Sprababbitt A	1069022	2.5 mm (0.098 in)	15 kg (33 lb)	Hasp Spool	Special Order	Europe	Germany
Sprababbitt A	1030418	3.2 mm (1/8 in)	25 lb (11 kg)	Coil	Special Order	Global	U.S.A.
Sprababbitt A	1002486	3.2 mm (1/8 in)	12 kg (26 lb)	Hasp Spool	Stock	Europe	Germany
Sprababbitt A	1030445	4.76 mm (3/16 in)	50 lb (23 kg)	Coil	Special Order	Global	U.S.A.

4.2 Handling Recommendations

Store in the original container in a dry location.

4.3 Safety Recommendations

See the SDS (Safety Data Sheet) in the localized version for the country where the material will be used. SDS are available from the Oerlikon web site at www.oerlikon.com/metco (Resources – Safety Data Sheets).

Product	SDS No.
Metco Tin	50-228
Sprababbitt A	50-236