

Material Product Data Sheet

Silver and Silver Alloy Thermal Spray Wires

Thermal Spray Solid Wire Products: Metco Silver, Metco Silverloy, Silvaloy

1 Introduction

Metco™ Silver is pure silver wire used for aircraft engine air/oil seals. It can also be used for decorative coatings.

Metco Silverloy and Silvaloy are silver-based alloys recommended for applications where cadmium-bearing alloys cannot be used. For example, food cans and dairy containers and equipment. These alloys have a higher melting temperature with higher mechanical strength at higher temperatures than pure silver. Metco Silverloy and Silvaloy can be used to join dissimilar metals like ferrous to non-ferrous substrates with close joint clearances. In particular, they are extensively used to join copper, brass, nickel and silver to ferrous alloys. They are good for refrigeration assemblies where higher temperatures are employed. The alloys can be placed using thermal spray processes, especially for large scale production.

1.1 Typical Uses and Applications

- Aircraft engine seals
- Food and dairy containers, vessels and manufacturing equipment
- Joining of dissimilar metals using thermal spray to place the deposits
- Refrigeration equipment
- Decorative coatings

Quick Facts

Classification	Wire, Ag-based
Chemical formula	Ag 99.99+ or Ag 38Cu 32Zn
Manufacture	Drawn wire
Melting Point	650 or 961 °C (1250 or 1763 °F)
Purpose	Corrosion protection, joining of dissimilar metals, decorative
Process	Electric Arc Wire Spray or Combustion Wire Spray








2 Material Information

2.1 Chemical Composition

Product	Chemical Composition (nominal wt. %)			
	Ag	Cu	Zn	Others
Metco Silver	99.99	---	---	0.01
Metco Silverloy	Balance	38	32	---
Silvaloy	Balance	38	32	---

2.2 Morphology and Available Wire Sizes

Product	Morphology	Wire Sizes		
		1.6 mm (14 ga)	2.3 mm (11 ga)	3.2 mm (1/8 in)
Metco Silver	Solid	---		---
Metco Silverloy	Solid			
Silvaloy	Solid	---	---	

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

2.3 Key Selection Criteria

- Metco Silver
 - Good oil/air seal material for aircraft engines
 - Excellent for decorative purposes
- Metco Silverloy or Silvaloy
 - Good mechanical strength at higher temperatures
 - Cadmium-free alloy
 - Can be used to join dissimilar metals

2.4 Related Products

- Metco Copper or Metco Brass can also be used to create decorative surfaces.
- Oerlikon Metco has an extensive line of high temperature nickel-based and cobalt-based braze alloys, many of which are approved for use in aircraft turbine engines and power generation turbines. Please ask your Oerlikon Metco Sales Representative for brazing datasheets to meet your joining requirements.

2.5 Customer Specifications

Product	Customer Specification	For Product Sourced From:
Metco Silverloy	Roll-Royce plc MSRR 9507/113	Europe
Silvaloy	American Welding Society (AWS) A8.5 BAg-20 GE B20A4	U.S.A. or Europe U.S.A.

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.

4 Commercial Information

4.1 Ordering Information and Availability

Product	Order No.	Wire Diameter	Package Type	Sales Units	Availability	Distribution	Origin
Metco Silver	1015312	2.3 mm (11 ga)	Coil	kg	Special Order	Europe	Germany
Metco Silverloy	1037147	1.6 mm (14 ga)	Spool	kg	Special Order	Europe	Germany
Metco Silverloy	1042931	2.3 mm (11 ga)	Coil	kg	Special Order	Europe	Germany
Metco Silverloy	1004605	3.2 mm (1/8 in)	Coil	kg	Special Order	Europe	Germany
Silvaloy	1036346	3.2 mm (1/8 in)	Coil	oz troy	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) localized 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 Silver	50-353
Metco Silverloy	50-862
Silvaloy	50-862

Silvaloy is a registered trademark of Wolverine Joining Technologies, LLC.

Information is subject to change without prior notice.