Tin Plating for Wire

High-Speed Matte Tin

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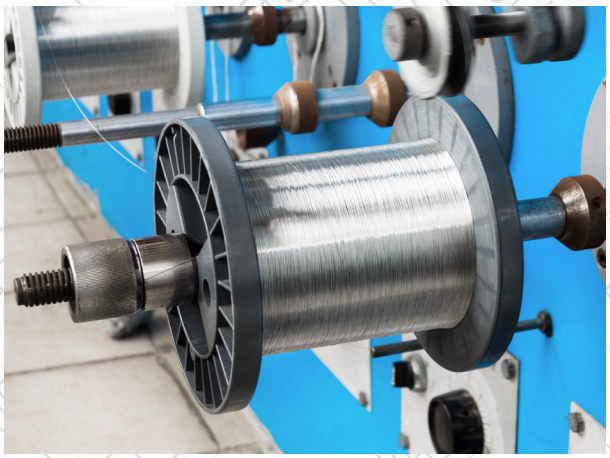
High-Performing Tin Plating Processes for Wire Applications



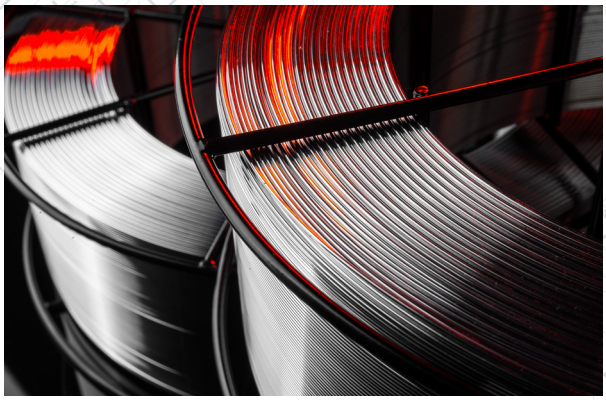
Tin wire is utilised to enhance corrosion resistance and oxidation protection in a variety of industrial applications.
Technic supplies two processes specifically formulated for the high-speed deposition of uniform matte tin coatings for the wire plating industry.

Techni Solder NF W is based on an organic sulfonate formulation and it is widely used across wire applications. Tin deposits exhibit excellent solderability with low organic co-deposition.

Based on a sulfuric acid electrolyte, **Technistan TP-W** offers cost advantages compared to MSA-based processes and it is always RoHS compliant, as any lead contamination would precipitate immediately as lead sulfate.

Both processes may utilise a unique antioxidant that effectively prevents tin oxidation and inhibits the formation of tetravalent tin sludge. **Techni ECO Antioxidant** is easy to install, simple to analyze, and safer than traditional tin antioxidants, thanks to its carcinogen-free formulation. It can replace any traditional antioxidant.

Benefits



- Can operate at high temperatures (up to 55° C)
- Uniform matte tin finish at all current densities
- Exceptionally wide current density range
- Reduced tin sludge
- Safer solutions, thanks to non-carcinogenic antioxidant
- Stable additive systems
- Excellent resistance to heat discoloration

Features

- Single-component grain refiner
- Non-foaming electrolytes
- Designed for high speed applications
- Can achieve thicknesses of up to 18 μm, without losing its properties
- All bath components are easily analyzable

Matte Tin for Wire Applications

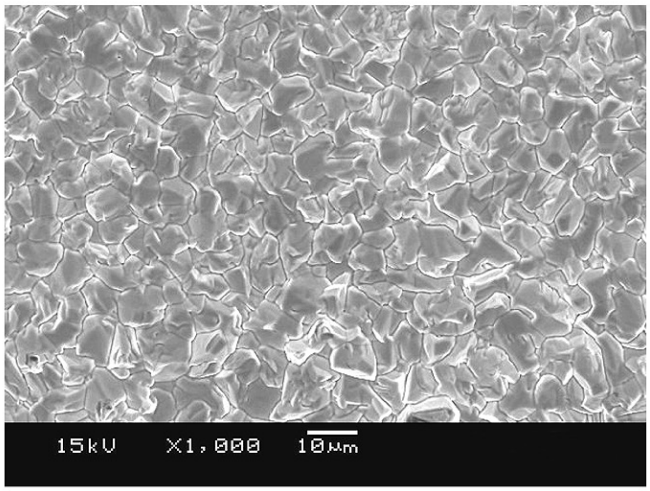
Product Specifications

- Customers' lines run from 100 mpm to 1200 mpm.
- Current densities range from 15 to 80 ASD.
- Sn deposit thicknesses range from 2.5 to 15 μm.
- Wire gauges from 12 to 28 AWG on-line plating, drawing to 44 AWG. Drawn wire Sn thickness <1 micron.

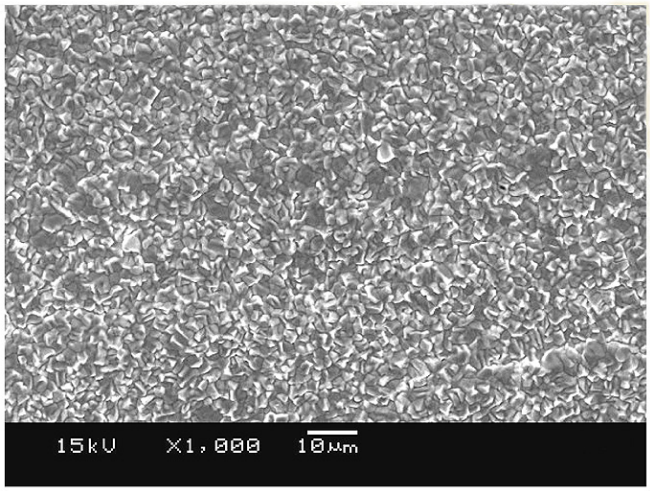
OPERATING PARAMETERS					
TECHNISOLDER NF W			**TECHNISTAN TP-W**		
Parameter	**Range**	**Analysis Method**	**Parameter**	**Range**	**Analysis Method**
Tin Metal	40-75 g/l	Titration	Tin Metal	20-70 g/l	Titration
Techni NF Acid 70%	150-220 ml/l	Titration	Sulfuric Acid	25-50 ml/l	Titration
TechniStan W Additive	80-120 ml/l	Surface Tension	TP-W Additive	60-180 ml/l	Surface Tension
Techni ECO Antioxidant	30-50 ml/l	UV/VIS	Techni ECO Antioxidant	10-40 ml/l	UV/VIS
OR Techni Antioxidant Solution 2*	10-30 ml/l	UV/VIS	OR Techni Antioxidant Solution 2*	20-40 ml/l	UV/VIS
Temperature	35-55º C		Temperature	35-50º C	
Anode: Cathode Ratio	2:1 minimum		Anode: Cathode Ratio	2:1 minimum	
Current Density	10-80 ASD	Dependant on metal, agitation and temperature	Current Density	10-80 ASD	Dependant on metal, agitation and temperature

*Two different antioxidants may be recommended depending on the application.

Deposit Structure at Different Thicknesses



18 micron thickness



4 micron thickness

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