



TECHNIC INC

PROCESS APPLICATION GUIDE

SURFACE PROTECTION

PLEASE NOTE: This document is for guidance only.
Please refer to the appropriate Technical Data Sheet for additional information.

Rev 1215

PROTECTION OF PRECIOUS METAL DEPOSITS

Process	Optimum Application	Operating Conditions			Test Criteria	Comments
		Temperature	Makeup	Immersion Time		
Tarniban® KS II	silver, gold	125 – 135°F (52 – 57°C)	10% v/v	0.5 – 5.0 minutes	Ammonium Sulfide Spot Mil Spec QQS-365A Potassium Sulfide Spot	Organic thiol post-treatment process designed to protect silver and gold surfaces from tarnish/oxidation. Recommended for applications where silver deposits must pass the most stringent sulfide compound corrosion tests. Not recommended for applications requiring high heat resistance (i.e., reflow).
Tarniban® 60	silver	80 – 122°F (27 – 50°C)	Tarniban® 60 Conc.: 14% v/v Conducting Solution P-60: 14% v/v	2 – 5 minutes	Dry Heat (>280°C) Discoloration	Inorganic immersion coating designed to improve the tarnish/oxidation resistance of silver deposits, particularly after high heat thermal exposure. Not suitable for applications requiring protection from severe sulfide corrosion testing. Recommended for rack and barrel applications.
Techniseal	silver	125 – 135°F (52 – 57°C)	30% v/v	10-30 seconds	All sulfide corrosion spot tests, NAV testing, MFG exposure, dry heat discoloration, etc.	Electrolytic post-treatment process that provides a transparent, nano-scale protective coating on silver deposits. Improves corrosion resistance enabling LED silver deposits to pass sulfide corrosion tests. Minimizes GAM degradation after aging or high temperature exposure. Suitable for applications requiring sulfide corrosion protection AND high heat resistance.
Tarniban® LED	silver	80 – 122°F (27-50°C)	Tarniban® LED Makeup Soln: 140 ml Tarniban® LED Conc: 140 ml Deionized (DI) water: Balance	3 – 20 seconds	Minimal GAM decrease after baking (200°C/2hrs)	Aqueous inorganic immersion post treatment process designed to minimize GAM decrease of silver deposits in LED applications where immersion application is required. Not suitable for sulfide corrosion protection. Also recommended for general silver protection in high speed/high temperature environments.
Durasil® Post-Treatment RTU	silver	70 – 90°F (21-32°C)	Use as supplied	10 – 30 seconds	EIA-364-65B, Class IIA (MFG)	A non-aqueous process which provides improved corrosion and wear resistance on Durasil® and conventional silver deposits.

Process	Optimum Application	Operating Conditions			Test Criteria	Comments
		Temperature	Makeup	Immersion Time		
Auroguard NP-12	gold	21 – 32°C (70 - 90°F)	100%	3 – 10 seconds	Nitric Acid Vapor Testing (NAV) ASTM B735-05	Non-aqueous post-treatment process which effectively protects gold plated surfaces from corrosion and oxidation in electronic component and connector plating applications. Significantly improves wear resistance properties of gold deposits.

PROTECTION OF TIN AND TIN ALLOY DEPOSITS

Process	Optimum Application	Operating Conditions			Test Criteria	Comments
		Temperature	Makeup	Immersion Time		
Tarniban® E260	tin, tin alloys	77 – 95°F (25 – 35°C)	10% v/v	3 – 20 seconds	Dry Heat (>280°C) Discoloration	Protects tin deposits from oxidation and discoloration following post-plate high temperature dry thermal exposure (reflow, oven bake, etc.). Optimum results when used in combination with Techni Nickel TS. Recommended for rack, barrel and high speed applications.
Tarniban® C48	tin, tin alloys	70 – 86°F (21 – 30°C)	2% v/v	3 – 60 seconds	Heat/Humidity exposure (e.g. JESD 201HTH, steam age, etc.)	Specifically designed for use on tin and tin alloy deposits which are subjected to post-plate thermal exposure in high humidity/steam environments. For optimal results, Tarniban® C48 should be used in combination with Technic PST.
Tarniban® C50	tin, tin alloys	70 – 86°F (21 – 30°C)	Part A 2% v/v Part B 20% v/v	3 – 60 seconds	Heat/humidity exposure and dry heat discoloration (>280°C)	Provides protection of tin and tin alloy deposits from discoloration following exposure to high humidity/steam environments plus dry thermal exposure (reflow/oven bake).
Technic PST Neutralizer	tin, tin alloys	113 – 131°F (45-55°C)	20 g/l	5 – 20 sec	Room temperature discoloration	Effectively neutralizes acid films from tin and tin/lead plating processes
Technistan Ag Post Dip	Tin/silver Post Treatment	70 – 108°F (21-42°C)	500 ml/l	2 – 15 sec	Room temperature discoloration	Designed to remove immersion silver from tin/silver deposits and preserve the deposit appearance from heat exposure.

TEST CRITERIA FOR TREATED SURFACES

Process	GAM Decrease Minimization after baking (200°C/2hrs)	Corrosion				Heat/Humidity Exposure		Dry Heat (>280°C) Discoloration	Wear Resistance
		Porosity Nitric Acid Vapor (NAV) ASTM B735-05	Neutral Salt Spray	Potassium Sulfide Spot Test	EIA-364-65B, Class IIA (MFG)	Tin Whisker Mitigation JESD 201 HTH	Discoloration		
Tarniban® E260								X	
Tarniban® C48						X	X		
Tarniban® C50							X	X	
Tarniban® 60								X	
Tarniban® KS II		X		X					
Auroguard NP-12		X	X		X				X
Durasil® Post-treatment					X				X
Tarniban® LED	X							X	
Techniseal	X		X	X	X			X	

Note: See pages 2-4 to determine optimum application for each process.

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