



## NO TARN™ PM-3 Silver Antitarnish For Electronic Finishing Applications

### Regional Product Availability

- Europe, Middle East, and Africa

### Description

NO TARN™ PM-3 Silver Antitarnish bath was specially developed for protection of silver from sulphidation. It is based on an aqueous, metal-free solution in which the organic inhibitor is present as a fine dispersion. The passivation layer is applied by immersion and is specially designed for silver surfaces.

### Features

- Protects silver deposits from tarnishing
- No adverse effect on contact resistance, solderability or bondability
- No influence on colour or brightness of underlying deposit
- Effective protection of tarnishing for copper, palladium and thin gold layers
- Free from metal ions and halogenated hydrocarbons

### Operating Parameters

Parameters	Range	Recommended
NO TARN™ PM-3 Antitarnish	5–50 ml/L	10 ml/L
Temperature	35–45°C	40°C
Immersion time Rack/Barrel	30–240 seconds	120 seconds
Immersion time Reel-to-Reel	5–20 seconds	10 seconds
Filtration	<b>Not allowed</b>	
Agitation	Moderate	
pH	Weakly alkaline. Monitoring not required.	

### Make-up Procedure

- 1) Add warm deionized water (40°C) to separate clean tank.
- 2) Warm up NO TARN™ PM-3 Silver Antitarnish bath to 40°C; shake thoroughly and add the desired volume of the concentrate.
- 3) Always pour the product; do not use pipettes, even for small amounts.
- 4) Top up to final volume with deionised water; and mix thoroughly.

### Process Sequence

- 1) Rinse plated components thoroughly.
- 2) Immerse in NO TARN™ PM-3 Silver Antitarnish bath.
- 3) Rack/Barrel: Static rinse with hot water 50–60°C; Reel-to-Reel: Blow off and dry by air knife.
- 4) Rinse in cold running water.
- 5) Warm air dry, below 65°C.

### Solution Maintenance

NO TARN™ PM-3 Antitarnish is consumed mainly through solution drag-out. Replenish NO TARN PM-3 Antitarnish based on drag-out losses and replace the bath when the Antitarnish performance is impaired.

Equipment	Tank: Temperature stabilised polypropylene
	Heaters: PVDF-clad panel heaters with thermostatic control
	Exhaust: Recommended
General	<ol style="list-style-type: none"> <li>1) The concentrate should be warmed up (40°C) and shaken before addition. Even for small additions, don't use pipettes.</li> <li>2) The maximum operating temperature should not exceed 60°C; at 52°C, the working solution becomes opaque and cloudy.</li> <li>3) Temperatures up to 300°C for 4-6 seconds will not show a detrimental effect.</li> <li>4) Where subsequent lacquering of work is to be carried out, the NO TARN™ EC Antitarnish product is preferred.</li> <li>5) From time to time, sample components should be checked using the polysulphide immersion test: It is carried out by immersing the passivated work into a 2% potassium polysulphide solution for 30 minutes at 26°C (± 2°C). No signs of tarnishing should be evident. Replenishment of NO TARN PM-3 Silver Antitarnish bath or a new make up should be carried out to maintain passivation effectiveness.</li> <li>6) For best optical aspect a two step rinse is recommended. First step should be a static rinse with hot DI water 40-50°C. This solution can be used to compensate evaporation losses of the NO TARN PM-3 Silver Antitarnish bath. The second step is a warm rinse at maximum 75°C for 30-60 seconds.</li> <li>7) When over-plating, the Antitarnish film must first be stripped to guarantee normal adhesion. This is achieved as usual in an alkaline soak or electro cleaner</li> </ol>
List of Products	NO TARN™ PM-3 Antitarnish

## Handling Precautions

Before using this product, associated generic chemicals or the analytical reagents required for its control, consult the supplier's Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) for details on product hazards, recommended handling precautions and product storage.

**CAUTION!** Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

**CAUTION!** Failure to maintain proper volume level when using immersion heaters can expose tank and solution to excessive heat resulting in a possible combustion hazard, particularly when plastic tanks are used.

## Storage

Store products in tightly closed original containers at temperatures recommended on the product label.

## Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Electronic Materials Technical Representative for more information.

## Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

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### Contact:

North America: 1-800-832-6200  
Japan: (+81) 3-5213-2910  
Asia: (+852) 2680-6888  
Europe: (+41) 41-259-44-44  
<http://www.dow.com>

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NO TARN™ PM-3 Silver Antitarnish / Interconnect Technologies

886-00109-0812  
08/2012, Rev. 0