

## **BMG OPTIMUM Silver**

### **Silver tarnish protection on solvent basis**

#### **Product information**

- silver tarnish protection based on nanotechnology
- very economical, simple dipping process
- biodegradable
- fast drying
- no odor nuisance

#### **Bath Description:**

The passivation layer is applied by dipping, creating a transparent, organic protective film that only slightly changes the appearance and good electrical properties of silver, e.g. contact resistance and conductivity.

The good solderability and bondability of silver is not affected by the passivation layer.

Generally, passivation is used to protect silver surfaces from the influence of sulfur compounds during storage. It can also be used to protect copper, palladium and thin gold layers from tarnishing. The

film has lubricating properties due to its chemical composition

lubricating properties, which is of great advantage for certain electrical connection elements. The insertion and extraction forces are significantly reduced by BMG Optimum Silver.

This applies not only to silver surfaces, but also to gold-plated sliding and plug contacts.

It is also worth noting that the anti-tarnish coating is made of non-hazardous substances, and that its protective effect allows short-term thermal stress up to 300°C.

#### **Equipment:**

Bath tank:

Plastic, preferably polypropylene, PVC or even stainless steel.

Suction:

Effective exhaust ventilation is required.

The extraction system must be dimensioned, designed and operated in such a way that no health hazards arise for the employees from gases, vapors and spray mist. In particular, it must be ensured that the permissible limit values (e.g. MAK, TRK, ARW, EC values) are not exceeded. In addition, care must be taken to ensure that the extracted,

pollutant-containing air does not lead to nuisances, hazards and environmental hazards at the discharge point.

**Delivery form:**

Bath formulation: BMG Optimum Silver  
Ready-to-use solution  
Storage stability: approx. 1 year

Bath preparation:

BMG Optimum Silver tarnish protection is supplied as a ready-to-use solution and can be used immediately.

**Working conditions:**

	<b>Soll</b>	<b>Range</b>
<b>BMG Optimum Silber</b>	Ready-to-use solution	
<b>Temperatur:</b>	Ambient temperature	20 - 25°C
<b>Treatment time:</b>	30 - 60 Sekunden	

**Special process instructions:**

Pretreatment:

The fabric must be degreased or cleaned prior to tarnishing. It must be completely dry before immersion in BMG Optimum Silver.

Post-treatment:

The fabric is dried, without rinsing, with hot air (60 - 90°C).

Bath addition:

Silver tarnish protection BMG Optimum Silver is an extraordinarily economical process. One liter is enough to passivate a surface of about 3000 dm<sup>2</sup>.

However, the consumption is also strongly dependent on the working method as well as the geometry of the passivated goods.

The pH value does not require monitoring.

Testing the protective effect

By immersion in a freshly prepared and filtered potassium sulfide solution.

If the passivated product shows dark discoloration after an immersion time of 5 min, it must be supplemented to the nominal value.

**Safety measures and disposal:**

The present tarnish protection contains hazardous chemicals and is therefore classified as harmful according to the GefStoffV.

When handling BMG Optimum Silver, please refer to BGR 120 (Trade Association Rule "Guidelines for Laboratories") or to leaflet 0001 (Occupational Safety Measures when Handling Electrolytes), as well as to the Safety Data Sheet.

According to the Water Resources Act, the baths in question are substances hazardous to water and must not be allowed to enter a public sewer system or body of water untreated.

We recommend that the solutions containing precious metals be processed by the supplier or that the process and rinsing solutions be detoxified in accordance with local wastewater detoxification regulations.

Other information:

The information we provide about our products and equipment, as well as our plants and processes, is based on extensive research and application engineering experience. We convey these results, with which we assume no liability beyond the individual contract, verbally and in writing to the best of our knowledge, but reserve the right to make technical changes in the course of product development. In addition, our application engineering service is available on request for further advice and to assist in solving manufacturing and application engineering problems.

However, this does not release the user from the responsibility of checking our information and recommendations for his own use before applying them. This also applies - especially for deliveries abroad - with regard to the protection of third party industrial property rights, as well as to applications and procedures not expressly specified by us in writing. In the event of damage, our liability shall be limited to compensation to the same extent as provided for in our General Terms and Conditions of Sale and Delivery in the event of quality defects.