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Electrolytic Passivation Datasheet

Electrolytic Passivation solution does not contain heavy metal ions which comply with EU Directive 200/53/EC and the ROHS directive in 2002/95/EC. An optically invisible protective layer will be formed after passivation to protect it from tarnishing. The protective layer is chemically inert, dirty-proof, oil-proof and waterproof. It may resist scratching to some degree. It can protect any kinds of metals, for instances, gold alloy (like rose gold) and silver jewelery. The duration of protection is much long-lasting than immersion type anti-tarnish.

Operating conditions:

Make Up Concentration: 10ml/L Passivation Solution

Temperature: 50-65°C – Cannot use stainless steel heater!

Anode: Iridium MMO Titanium Anode (Cannot use stainless steel or Platinised Titanium Anode)

Voltage: 4-7V (Optimum 5V)

pH: 3.0-4.5 (Optimum 3.5. When pH is out of range, adjust pH by adding a few ml/L 50%KOH or 25%HNO₃ to give the best protection performance)

Coating time: 5-10 min (Optimum 7 min)

Agitation: Required

Tank material: PP. Stainless steel should not be used.

Bath mixing

First warm up the delivered concentrate to approx. 50°C at strong shaking. Then fill the concentrate (at 10ml/L) in the distilled water bath heated to 60 °C with strong stirring. Dissolve 2g/L conducting salt in a separated container with hot distilled water and pour in the working bath with stirring. The coating bath is ready to use. The concentrate may not be filled coldly into the water bath.

Coating Process

An electrolytic degreasing of the items should be avoided before dipping into the passivation solution. This could lead to insufficient protective results. If electrolytic degreasing is needed, the items should be treated in a sulphuric acid before dipping in the passivation solution!!!

1. Dip the water rinsed goods into the passivation solution maintained at 50-60 °C for 7 minutes.
2. Wash up in clear cold distilled water for 10-20 seconds
3. Rinse into hot distilled water at about 70 °C for 10-20 seconds (This step is very important!)
4. Now the items are nearly dry and very waterproof. Isolated drops of water can be blown off with hot air (T~60°C) or they can be dried in the stove at about 60°C

Bath maintenance

- The passivation solution should be replenished once a week.
- Before adding the concentrate the bottle should be warmed up to T=50°C with strong shaking and filled into the warm bath at 60°C.
- It is recommended replace the bath after four-week usage or whenever it becomes black.

Disposal

The bath solution can be treated after cooling using active carbon powder for disposal. You must take care about your wastewater collection and disposal rules/regulations.