

High Corrosion Resistance Trivalent Chromium Iridescent Passivator TCP-973

TCP-973 高耐蚀三价铬五彩钝化剂

Trivalent Chromium Iridescent Passivator

一、Introduction

1. Excellent anti-corrosion performance.
2. Suitable for rack plating and barrel plating of all types of zinc coatings.
3. Outstanding high temperature resistance, withstands temperature up to 200 ° C.
4. Long service life and low operating cost.
5. Excellent performance in neutral salt spray test; the salt spray resistance of various rack zinc plating parts can exceed 144 hours.

二、Bath Make-Up Procedure:

1. Thoroughly clean the plating tank, then fill it with two-thirds volume of pure water.
2. Add the calculated amount of TCP-973 passivator, then top up with pure water to the standard working volume and stir evenly.
3. Check the solution temperature. The applicable range is 20 - 30 ° C with the optimum temperature at 22 ° C. The solution is ready for use.

三、Operating Parameters:

Automatic Production Line

Plating Process	Concentration	Temperature (°C)	Time (s)	pH Value	Agitation
Cyanide Zinc Plating	6 - 8%	20 - 30 (Opt.: 22)	40 - 60 (Opt.: 50)	1.8 - 2.5 (Opt.: 2.2)	Uniform Air Agitation
Alkaline Non-Cyanide Zinc Plating	6 - 8%	20 - 30 (Opt.: 22)	35 - 50 (Opt.: 40)	1.8 - 2.5 (Opt.: 2.2)	Uniform Air Agitation
Chloride Zinc Plating	6 - 8%	20 - 30 (Opt.: 22)	40 - 50 (Opt.: 45)	1.8 - 2.5 (Opt.: 2.2)	Uniform Air Agitation

Manual Production Line

Plating Type	Concentration	Temperature (°C)	Processing Time (s)	pH Value	Agitation
Cyanide Zinc Plating	8 - 10%	20 - 30optimum: 22	40 - 50optimum: 45	1.8 - 2.5optimum: 2.0	Uniform air agitation
Cyanide-free Alkaline	8 - 10%	20 - 30optimum: 22	38 - 45optimum: 40	1.8 - 2.5optimum: 2.0	Uniform air agitation

Plating Type	Concentration	Temperature (°C)	Processing Time (s)	pH Value	Agitation
Zinc Plating		22		2.0	agitation
Chloride Zinc Plating	8 - 10%	20 - 30Optimum: 22	45 - 60Optimum: 50	1.8 - 2.5Optimum: 2.0	Uniform air agitation

四. Notes

1. Adjust pH value with sodium hydroxide and nitric acid. pH is a critical parameter. Use nitric acid to lower pH when the value is higher than 2.5.
2. Perform precise solution replenishment according to solution drag-out and production workload.
3. For workpieces requiring high anti-corrosion performance, increase the initial bath concentration and extend passivation time. The zinc coating thickness shall be no less than 7 micrometers.
4. Test zinc ion content regularly. Replace one-fifth of the bath solution when zinc ion concentration exceeds 8 g/L.
5. Test iron ion content regularly. Replace one-fifth of the bath solution when iron ion concentration exceeds 80 PPM.
6. Conduct regular replenishment based on drag-out and workload. Generally, add 1 kg of TCP-973 for every 3000 - 7000 dm² of processed workpieces.

5. Troubleshooting

Abnormality	Causes	Solutions
Dull passivation film	1. Excessively low pH2. Excessively high zinc ion content3. Overhigh solution temperature	1. Adjust pH value2. Drain part of the old solution and add fresh TCP-9733. Lower the solution temperature
White fog around holes	1. Excessively low pH2. Excessive burrs on holes	1. Adjust pH value2. Inspect electroplating around holes and optimize plating process
Pale passivation color	1. Excessively high pH2. Low temperature3. Insufficient passivation time4. Inadequate agitation5. Low trivalent chromium content6. Incorrect bath make-up	1. Adjust pH value2. Adjust temperature3. Extend passivation time4. Enhance agitation5. Add TCP-9736. Correct excessive pH value
Mottled passivation film	1. Excessively high pH2. Aging solution3. Low trivalent chromium content	1. Adjust pH value2. Drain 10% - 20% of the old solution and add fresh TCP-9733. Add TCP-973
Tawny	1. Excessively low pH2. Excessively high trivalent	1. Adjust pH value2. Drain part of the

Abnormality	Causes	Solutions
discoloration on holes	chromium content3. Overhigh temperature4. Overlong passivation time	solution and dilute with pure water3. Lower the temperature4. Shorten passivation time