

For metal containers

ZINC PLATING OPTIMIZATION



Tri-Sure® has been continuously optimizing its zinc plating technology. The latest improvement brings enhanced corrosion resistance and equivalent chemical compatibility by the introduction of an environmentally friendly passivation process.

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Zinc plating through the years

When the technology was first developed, zinc plating occurred in a cyanide based zinc bath. The toxicity of the bath and the search for better performance lead to subsequent developments. The second important improvement was the introduction of the acid based zinc bath. This replaced many elements and improved the performance. Many of our competitors still use this plating process.

The third important improvement was the shift towards an alkaline zinc bath. The alkaline bath provides better consistency of zinc layer thickness all over the product. To prevent early white rust on the zinc, a top layer of chromium 6 passivation* is commonly used.

The latest advancement in the alkaline bath is an improved method of passivation with Chromium 3. This results in better corrosion and chemical resistance, while incorporating environmental benefits of improved processing conditions and reduced end-of-life impact.

Color Change

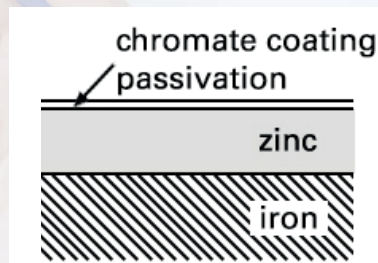
The surface reflection properties have changed which results in a different color perception from gold to platinum.



Chromium 6 passivation: result 240 hour neutral salt spray test



Chromium 3 passivation: result 240 hour neutral salt spray test



Schematic view of the zinc and chromium protection layers

Chromium 3 passivation versus chromium 6 passivation

Extensive research resulted in the development of the new chromium 3 passivation. Independent laboratory tests conducted by COT** has shown the new chromium 3 passivation to be equal or better than the current chromium 6 passivation (see pictures). For a full report of the testing results, please see your local Tri-Sure® representative.

Following a wide range of internal tests, performed in consultation with our supplier's expertise and to the best of our knowledge, no chemical compatibility issues are expected in the transition from chromium 6 to chromium 3.

Advantages

- ✓ Better for the environment and safer for the workers.
- ✓ Equal or better in corrosion and chemical resistance.

* Passivation refers to a material becoming "passive", that is, being less affected by environmental exposure.

** COT is an independent organization with over 70 years of experience, specializing in coatings, corrosion prevention, and maintenance of buildings, industrial sites, civil works, ships, harbor installations, etc.

Protecting the
Environment
Worldwide



Left closure: Gold chromium 6 passivation
Right closure: Platinum chromium 3 passivation



Creating a
Safe Workplace

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