

Technology For Chrome Plating

Why the HEX on Chrome

Chrome plating has been our passion and your/our livelihood for generations. It's how we live, how we feed our families and is a trade we were proud to pass on to our children.

The problem is the bad rap the environmentalists hang on chrome. This is a shame as chrome has many unique properties that can't be duplicated by anything else. Environmental and worker safety regulations are a good thing, but EPA and OSHA have taken this way too far.

Of course hexavalent chrome is hazardous, but isn't every chemical that's used in industry? But, hazardous is a relative term. Chromic acid isn't like cyanide which causes instant death, like nitric acid that severely burns on contact, or even like chlorine gas that kills when breathed. Chromic acid is actually a pretty benign chemical. Granted, we shouldn't inhale its fumes, but that's what ventilation systems and fume suppressants are for. The issue of how to protect the environment and our employees is now history.

Ironically, the body needs chrome to live and without it we will die of a disease similar to diabetes. Chromium is needed for proper metabolism, for maintaining low cholesterol levels, for keeping blood pressure in check, to prevent depression, and even for good eyesight. Witness the fact that most multi-vitamins now contain a form of chrome. The ironic part is our bodies magically convert hexavalent chrome into the trivalent form without doing much damage unless taken in large doses. Generations of chrome platers have worked with chromic acid their entire lives and I don't know of a single case where anyone died of cancer from working with it.

We need to continue providing hard chrome services and become vigorous in promoting and expanding its use. For starters, hard chrome has many good points that can't be achieved by any other process. It isn't complicated, it's relatively inexpensive and it generates very little waste products.

The so called "replacement processes" don't come close to matching its hardness or wear resistance.

A wise old professor once said "If you want it to function like chrome and wear like chrome, then you had better use chrome."

Hard chrome will continue in spite of the bad press & environmental attacks.

Topics

Why the HEX on Chrome

The Three Little Pigs

Insider Tips

Free Technology

Free Marketing Assistance

Plating Resources, Inc.

2845 W. King St., Unit 108 ♦ Cocoa, Florida 32926, USA

Phone: (321) 632-2435 ♦ Fax: (321) 632-8122 ♦ E-Mail: sales@plating.com

www.plating.com ♦ www.platingsystems.info ♦ www.microtuff.com

The Three Little Pigs

Once upon a time three little pigs invaded a chrome shop. These bad pigs each stole something which drove up costs and lowered profits.



The shop owner finally realized what was happening and called on the Wolf to huff & puff the three pigs away. The rest of the story is how he did it, and yes he plated happily & profitably ever after.

Efficiency Pig

This pig was the poor efficiency of the plating baths, it was stealing profits with slow plating speeds which lowered production and caused the rectifiers to run longer than they needed to. He simply added some Dura-3500 Booster to the baths and is now plating 50% faster with 33% lower rectification costs. And, his investment was repaid quickly by being able to get more work out the door each day.

Impurity Pig

This pig was the bath's increased resistance from high impurity levels. Realizing impurities are a fact of life, he decided to keep them below a 7.2 Total Impurity Index level. This lowered his rectification costs by another 30%. He did this by adding CR-3 Reducer whenever the bath needed dummifying for trivalent and by decanting the bath for iron & copper. And, he saved chrome by using a 20 oz. bath whenever a fresh solution was needed.

Control Pig

This pig was the higher chemical and rework costs from avoiding routine bath analysis. They only tested their bath when problems became obvious and they didn't check for impurities. They started doing their own weekly chrome, sulfate & trivalent testing, and used a qualified lab for monthly back-up and impurity testing. This lowered their chemical costs by 30% while also improving quality and reducing their rework.

***In short, they increased production, improved quality, and lowered costs.
Call us & start saving today; you will reap the rewards for years to come.***

Insider Tips

Chrome Stripping

Hard chrome is easily stripped from most base metals without damage. Two types of strippers can be used depending upon the circumstances.

Alkaline Electrostrip

Polystrip-26 is used for steel alloys as it strips at a faster rate and has a much greater chrome holding ability than other alkaline solutions do. A current density of only 1 ASI is needed to strip at a rate of 0.003" per hour. Polystrip-26 won't damage steel alloys, even if over-stripped or left in the bath for a long period of time. Type 304 stainless steel can also be stripped in this solution.

Acid Immersion Strip

Inhib-All is used along with hydrochloric acid to strip brass, bronze, beryllium, carbide, copper, Ferrotic, rusted or scaled parts, silver solder and stainless steels. This process is also used when only one stripper is available as it is more versatile. It can also be used, with care, to strip steel alloys. The use of only 3% Inhib-All in the acid speeds stripping and acts as an inhibitor to prevent attack on the base metal.

Aluminum & Zinc Substrates

These can't be stripped in either the alkaline or the acid bath as both of these attack the base metal. Aluminum is best stripped by reversing in a non fluoride chrome bath. Zinc must be either ground or polished off.

Ultra High-Speed Plating

A unique patented process is now available for Ultra-High Speed Hard Chrome. This proven technology is currently used in the steel industry and is applicable to either horizontal or vertical plating. It uses Hydro-Mechanical High Volume - Mass Ionic Transfer techniques which provide:

- 1) Plating speeds of 0.006" / side per hour.
- 2) Deposit uniformity of less than 10% variance on the diameter and length.
- 3) Saves energy and lowers post-plating costs by plating right to size.

This provides both increased production capacity and reduces grinding and polishing requirements. The extreme uniformity also allows for thinner deposits being needed to meet the plating specifications. The result is a much higher product quality, lower overall costs, increased production and greater efficiency.

A confidentiality agreement is needed prior to discussing the process in detail or demonstrating the technology.

The following is available as a courtesy to our valued customers.

Free Technology

A technology site devoted strictly to hard chrome plating issues. This vast library covers every aspect of hard chrome, including data on plating difficult parts, how to reduce costs, impurity control, reverse etch times, chrome stripping, anodizing, fixturing, stop-off, equipment, troubleshooting, worker safety, and the environment. Refer to it often; it can be a valuable resource for your company.

Free Marketing Assistance

You can now link your website directly from **www.plating.com** and generate new business for your company. Plating.com gets over 50,000 hits a month and many are from companies looking for shops that can hard chrome plate their work. This link can become a powerful marketing tool for your company.

*Fantastic Finishes is mailed quarterly and includes topics important to the hard chrome plater. It is also published on our website **www.plating.com**. Please let us know about topics you would like to read about, and other people you want this sent to. **Thank you, we enjoy serving your needs.***

FANTASTIC FINISHES



Plating Resources, Inc
2845 W. King St., Unit 108
Cocoa, FL 32926