

## ***For Your Information !!!***

### ***So you want to plate chrome !***

***The following information is designed to be of assistance to first time platers of decorative chrome. It is not a technical article.***

Chrome is one of the most popular industrial plating finishes because its' not only bright and beautiful and highly reflective, but it has the ability to protect metals against corrosion, rust, oxidation and wear under very adverse conditions.

Chrome is used as a plated finish on hundreds of products. Automobiles, motorcycles, plumbing parts, hardware, marine products, and when ever metals are exposed to great wear, or the elements.

***It's very important to remember that there are two types of decorative chrome plating. The hexavalent chrome that's was the original decorative chrome and the newer trivalent chrome that was developed in the 1970's.***

There's a third type of plated chrome that is called "hard chrome" and while the chemistry is similar, it is used to provide machine parts with heavy deposits of up to 20 mils or 500 microinches of chrome for extreme wear and corrosion resistance.

Most automobile and motorcycle parts have been plated with hexavalent chrome. (In many cases the manufacturers plating requirements call for hexavalent chrome.) However, there has been a number of platers who have switched to trivalent chrome because it's safer to use, easier to plate and has the wearability of hexavalent chrome. There is a slight color variation. Trivalent chrome uses wetting agents that reduce the surface tension, so misting is not a problem, and air scrubbers are not required.

***There is no such thing as a small chrome line. The tanks from the cleaning operation to the final chrome have to be big enough to accommodate the parts that are being plated. A small plating line would require a 5,000 sq.ft. building.***

***An approximate price, which would include all the necessary equipment to strip old electroplated parts, to electroclean, to preplate aluminum for plating, copper strike, acid copper, nickel and chrome and all waste treatment would cost about \$192,000.00. This would not include the chemicals, installation, or site preparation. To plate auto parts as large as bumpers would have an equipment cost of about \$300,000.00.***

In the event you've never done plating, the following information will give you an idea of the equipment that's needed to chrome plate and the plating steps that are necessary for successful results. It will also explain why chrome lines aren't cheap.

The parts to be plated must be very clean before you can successfully plate, and a good cleaning line is vital. Since most parts to be plated are polished it takes a soak cleaner and electrocleaner to get the parts clean. A cleaning line must have these two cleaning tanks, as well as a double rinse to remove the soap.

Before you can go into a plating solution, you must activate the base metal to be plated. This is done by an acid activator, which is generally a 5% solution of sulfuric acid. Again a rinse is necessary to remove the acid.

The first electroplate is generally a copper strike. This bath is a cyanide copper that can be applied as a thin deposit, or as a heavy electroplate. When used as a heavy copper electroplate you get a dull looking copper.

Many platers plate a bright acid copper after the copper strike. The brightness of the acid copper helps to make a brighter nickel and chrome electroplate.

If you're going to plate parts that are made of aluminum you must preplate the aluminum with zincate. This requires additional tanks. Once the zincate is applied, you can then finish plating the aluminum.

Because chrome gets its' "brightness and some of its resistance to corrosion from a bright nickel you must make sure that the nickel plate is heavy enough and as bright as it can be. Time in the nickel tank is generally 15 to 30 minutes. It is the longest time cycle of all the plating baths, so the nickel tank has to be big enough to plate more than one part at a time.

The chrome tank has to have proper ventilation if hexavalent chrome is used. In most cities and states air scrubbers are required. Trivalent chrome doesn't require scrubbers since there is no misting, but it does require ventilation.

If you are going to plate stainless steel parts you will have to add a special nickel strike to your line. You can't plate stainless without this special pretreatment. Most platers know this strike as the "Wood's strike."

It takes 21 tanks to apply chrome in a basic line. If you add in the Aluminum Zincate line, the acid copper line, and the nickel strike you are adding another 11 tanks to the system.

***The plating lines provided by C.C. TECH, INC. use an exclusive in line waste treatment system that eliminates the need for extensive and very expensive waste treatment. It is called the Dragout/Rinse/Reclaimer System. Details on this system are provided with your equipment quotation.***

It is very important to remember that as a plater you are under rules and regulations established for waste treatment prior to discharge to a sewer by the EPA and regulated by your local sewer authority. Hexavalent chrome installations are also regulated by air quality rules established by your State. Again, C.C. TECH will assist you in meeting these requirements.

*The key to a successful plating operation is in the equipment. It must be built well, and each tank must be equipped with the proper heaters, controllers, filters etc. The tanks must be well built with double containment where necessary. Most important the equipment must be easy to operate, and highly productive.*

If you're going to do "rechroming" work you will also need chrome and nickel strip tanks, as well as a paint strip tank. These tanks are quoted as part of the equipment. that you will require

***There is a tremendous market for the chrome plating and rechroming of motorcycle, automobile, and marine parts. There is also a major market in the chrome plating of hardware, plumbing parts, and small appliances.***

The people at C.C. Tech not only make chrome plating lines to fit your needs, but provide installation of the line, as well as the training of your people in all of the plating techniques that are necessary for having a successful operation. Assistance and the necessary contacts with the EPA and your local sewer authority are also provided.

Chrome plating is highly profitable when its' done right. We can show you how to make money chrome plating. We've been doing it for 30 years.

***We hope that this information has been helpful to you***