

## **DuraClean-612**

### **Description**

DuraClean-612 is a non foaming and highly effective soak cleaner and excellent electrocleaner (direct or reverse) for steel, brass, copper, zinc, nickel, cast iron and stainless steel. Its medium alkalinity makes it ideal for these common metals in a job shop type operation. DuraClean-612 effectively removes all common types of fabricating oil and can also be used for electrolytic stripping of chrome deposits in a separate tank.

In general, reverse current (anodic) cleaning is recommended for all common metals except for nickel and stainless steel. These must be cleaned with direct current (cathodically) to prevent passivation. If both direct and reverse current cleaning are necessary, then separate tanks should be used.

If needed, this product can be used for both soak and electrocleaning without a rinse in between them. DuraClean-612 has excellent soil suspension properties which makes its use ideal in hard water areas.

### **Advantages**

- A. Controlled non foaming is ideal for electrocleaning.
- B. Highly chelated product that leaves surfaces smut-free.
- C. Excellent wetting, penetrating and dispersing ability.
- D. Exceptional free-rinsing ability, even with hard water.
- E. A multi-purpose cleaner for a variety of base metals.
- F. Optimum gas scrubbing action at HCD levels.
- G. Outstanding soil suspension ability.

## **Bath Maintenance**

	<b>Current Density</b>	<b>Concentration</b>	<b>Temperature</b>
Soak Cleaning		4 - 10 oz./gal.	190-210° F.
Steel	40 - 80 amp ./sq.ft.	8 - 10 oz./gal.	180-200°F.
Copper	20 - 50 amp./sq.ft.	4 - 10 oz./gal.	150- 180° F.
Brass	20 - 50 amp./sq.ft. (Anodic cleaning of brass should be short to prevent tarnish.)	4 - 6 oz./gal.	150- 170° F.
Nickel Plate	20 - 50 amp./sq.ft. (Cathodic clean to activate metal.)	4 - 6 oz./gal.	140- 160° F.
Stainless Steel	20 - 50 amp./sq.ft. (Cathodic to prevent passivation.)	4 - 6 oz./gal.	140- 160° F.
Zinc Die Castings	20 - 50 amp./sq.ft.	3 - 6 oz./gal.	140- 170° F.
Stripping Chrome Plate	20 - 50 amp./sq.ft. (Anodic cycle.)	6 - 10 oz./gal.	110- 160° F.

Large additions of an alkaline cleaner to a hot solution are dangerous because of additional heat evolved. This additional heat could cause boil over or spattering. Either lower the temperature when making additions or add only in small quantities.

DuraClean-612 will etch aluminum and its alloys.

The DuraClean-612 concentration is best controlled by analysis. Plating Resources, Inc. offers laboratory services for such quality control. Small and frequent bath additions are considered best, so as to maintain optimum cleaning characteristics. Typical analytical frequency is once/week on heavily used solutions and bimonthly for others. This frequency should be such that additions are 0.5 oz./gal. or less.

The DuraClean-612 bath has an extremely long life cycle, due to its chelating ability. The bath will, however, eventually require discarding and remaking once its maximum dirt load is reached. The bath should be disposed of, at this point, by approved methods in compliance with all federal, state and local environmental regulations.

DuraClean-612 is a highly alkaline compound and, as such, caution must be exercised when making up a new bath or when making solution additions. DuraClean-612 compound must be added slowly and with sufficient agitation to avoid overheating.

## **Bath Make Up**

The following procedures should be used for a new bath make up:

- A. Fill the tank about 3/4 full with cold tap water. Do not use warm water.
- B. Cautiously dissolve the DuraClean-612 compound. The material must be added slowly so as to avoid localized overheating. This material generates heat (exothermic) when being dissolved. Break up any lumps in the product, due to moisture, and avoid any splashes.

Stir thoroughly or use mild air agitation, when making additions.

- C. Add additional tap water to the proper operating volume.
- D. When all of the material has been added, continue stirring or agitating for 10 - 15 minutes longer.
- E. Heat the bath to its operating temperature, while continuing the agitation. The bath is now ready to use.

### **Note**

This bath must be heated after make-up, so as to ensure that all of its chelators and complexors are completely dissolved.

## **Equipment**

DuraClean-612 solutions may be used in plain steel tanks; linings are not necessary. Heaters, if used, may also be of plain steel, although stainless steel is generally preferred so as to prevent rusting above solution level. Adequate exhaust ventilation is necessary in order to remove the light mist generated during the cleaning operation.

Brass, aluminum, zinc, tin and lead are heavily attacked by DuraClean-612.

Removable plain steel electrodes are recommended. They should be cleaned periodically, so as to remove any soil, scale or deposits.

## **Rinsing**

Adequate rinsing should be used both before and after DuraClean-612 cleaning. The DuraClean-612 is somewhat viscous, so all rinsing must be thorough.

## **Agitation**

A mild air agitation will provide the optimum conditions of use. Agitation should especially be used when making additions to the bath. DuraClean-612 is designed for use with air agitation.

## **Solution Foaming**

Under certain adverse conditions, DuraClean-612 may foam slightly when used electrolytically and with high amounts of agitation. This is usually caused by water hardness. In these cases, an addition of Anti-Foam #426 may be required.

## **Caution**

DuraClean-612 and its solutions are highly alkaline and can cause severe burns to skin or eyes. Avoid all such contact. Wear protective clothing, such as gloves, apron and a face mask. Flush with water in case of contact with skin. For eyes, immediately flush with water and a boric acid solution for at least 15 minutes and obtain medical attention at once.

Break up any lumps in the material, prior to making additions and avoid any splashing. Make all solution additions slowly, so as to avoid generating excessive heat with resulting splash back.

Read and understand the SDS prior to handling or using the product.