

PLATING in the JEWELLERY and GIFTWARE INDUSTRY

ELECTROLYTIC CLEANING

FUNCTION

To remove traces of oil, grease, tarnish. Electrolytic cleaning is necessary before any plating process, as a chemicals cleaner, to reduce the risk of staining under the plating and damaging the plating solution. Temp 60 – 70C, 3 – 7 volts DC, 5 – 15 seconds, work connected as cathode (-).

Use stainless steel anodes. Packed in salt form to make 5 litres No. 4040D

GILDING

FUNCTION

To deposit a thin layer of coloured gold onto the surface of an article. This converts the finish of the article to a uniform colour and retards oxidation of the surface. Used extensively on low carat gold and base metals, also on some silver articles. Useful after any repair work has been carried out to retain the original colour.

Temp 55 – 65C, 5 – 7 volts DC, 5 – 15 seconds, work connected as cathode (-)

Use stainless steel anodes. Packed in salt form to make 1,2 or 5 litres.

Packs of salt should not be split or inconsistent powder mix may occur.

Available in Rose, 9, 14, 18, 22 & 22 carat colour

For heavy deposit gold plating see data sheet.

RHODIUM PLATING

FUNCTION

To deposit a very thin layer of Rhodium metal over the surface of metal articles. Used as a final finish on nearly all white gold and Platinum goods due to the unattractive colour of these precious metals. Rhodium is an extremely hard metal and is virtually unaffected by any chemicals. It is impossible to remove Rhodium from surface by chemical means; polishing with abrasive compositions is sometime possible. The solution is expensive and must be used in a clean environment to prevent contamination.

Temp 35 – 45C, 1 – 4 volts DC, 5 – 15 seconds, work connected to cathode (-).

Use Platinum coated anodes only.

Supplied in concentrate form for adding to distilled water at the rate of 2 grams per litre, or in ready to use form in litres.

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SILVER PLATING

FUNCTION

To deposit a layer of silver onto the surface of article, used extensively in the plate industry, deposition is normally on copper, brass or nickel plated bases. Often used in the jewellery industry as a final finish on sterling silver or costume jewellery. The major advantage of deposited silver is its whiteness, ease of polishing and increased tarnish resistance over sterling silver

Two type of Silver plating solutions are in use.

1. Light flash solution is used for colour and to cover “fire” on Sterling Silver. It is also used as an undercoat to increase Adhesion, prior to a thicker deposit from a heavy Silver solution.

Room temperature, 5 – 7 volts DC, 5 – 15 seconds, work connected as cathode. Use stainless steel anodes.

Packed in salt form to make 1, 2 or 5 litres.

Packs of salt should not be split or inconsistent powder mix may occur.

2. Heavy plate solution is used to deposit thick deposits that have good wear properties that can be polished. Used extensively on **EPNS**, cutlery and “silver plate” products

Room temperature, 1 – 3 volts DC, 1 – 40 minutes, work connected as cathode

Plating rate = 1 micron per 1 minute. Using Pure Silver anodes is preferable but stainless steel may be used. Packed in salt form to make 1, 2 or 5 litres. Packs of should not be split or inconsistent powder mix may occur.

Available in matt or bright finishes; 1, 2 and 5 litre salt packs with additive for bright plating solutions.

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OPERATION SEQUENCES FOR ELECTROPLATING

GILDING

Stage Operation

1. Ultrasonic clean 3 minutes (if work is very dirty).
2. Water Rinse.
3. Electrolytically clean 5 volts, 20 seconds.
4. Water Rinse.
5. Gild 6 volts, 10 seconds, slight agitation.
6. Rinse and Dry

RHODIUM

Stage Operation

1. Ultrasonic clean 3 minutes (if work is very dirty).
2. Water Rinse.
3. Electrolytically clean 5 volts, 20 seconds.
4. water Rinse.
5. Rhodium plate, see below for voltage, 5 – 10 seconds, slight agitation.
6. Rinse and Dry.

Plating voltage = Tips 1 – 1.5, Head/Shoulders 1.5 – 2, whole ring 2 – 4 volts.

LIGHT SILVER PLATING ON SILVER OR BASE METALS

Stage Operation

1. Ultrasonic clean 3 minutes (if work is very dirty).
2. Water Rinse.
3. Electrolytically clean 5 volts, 20 seconds.
4. Water Rinse
5. Light Silver plate, 5 – 7 seconds, work agitation.
6. Rinse and Dry.

This method will produce a bright white finish. Chains may be barrelled afterwards for 5 minutes to regain the polish.

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HEAVY SILVER PLATING ON SILVER

Stage Operation

1. Ultrasonic clean 3 minutes (if work is very dirty).
2. Water Rinse.
3. Electrolytically clean 5 volts, 20 seconds.
4. Water Rinse.
5. Heavy Silver plate, 1 – 3 volts, 1 – 5 minutes, work agitation.
6. Rinse and Dry.

This method will cover “fire” and improve whiteness. Chains should be barrelled afterwards for 5 minutes to regain the polish.

HEAVY SILVER PLATING ON BASE METALS

Stage Operation

1. Ultrasonic clean 3 minutes (if work very dirty).
2. Water Rinse.
3. Electrolytically clean 5 volts, 20 seconds.
4. Water Rinse.
5. Light Silver plat, 5 -7 volts, 5 – 10 seconds, work agitation.
6. Heavy Silver plate, 1 – 3 volts, 1 – 40 minutes, work agitation.
7. Rinse and Dry

This method will produce a heavy deposit of Silver that may require light polishing. Chains should be barrelled afterwards for 5 minutes to regain their polish.

Recommended Equipment:

- Microplate No. 3001D, 3 x 1 Ltr Clean, Gild Rhodium.
- 3 GRS 2 – 3 x 2 Litre Clean, Gild, Rhodium.
- 3 GRS 5 – 3 x 5 Litre Clean, Gild, Rhodium.
- 4 GRS 2 – 3 x 2 Litre Clean, Gild, Rhodium and Silver.
- 4 GRS 2 – 3 x 2 Litre Clean, Gild, Rhodium and Silver.

For heavy deposits of Gold or Silver the above units require the MINI – AGITATOR with moving cathode and low range ammeter.

To increase the number of process tank, “ADDPLATE” units are available

Other combinations and sizes are possible with larger tanks and separate rectifiers.

Chemicals involved in these processes are Toxic and should be treated with care.

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