

ECONOCLENSE D

INTRODUCTION

Econoclense D is a highly effective electrocleaner for steel, and for certain applications, copper and its alloys. It is an alkaline de-ruster and will remove heat scales and smuts, oxides, sulphides, finger marks, soaps, chromate films, phosphates and many other contaminants including the stripping of paint films.

Periodic reversal may be used for light scale removal. The cleaner can also be used as a second stage anodic cleaner for steel and copper making it ideal for mixed metals such as brazed steel components. It leaves a fully active surface ready for electroplating.

BENEFITS

The main benefits of the process are:-

High alkalinity to remove scales, oxides and smuts from steel.

Economical - long life and effective cleaning.

Exceptional versatility - stripping of many other types of organic and inorganic coatings.

EQUIPMENT

Tanks
Heaters

Mild steel.
Mild steel immersion heaters or steam coils.

SOLUTION MAKE-UP

Econoclense D 50 to 150 g/l depending on soils*
*(See the next page).

Half fill the tank with clean water and very slowly add the correct amount of Econoclense D while stirring to prevent caking on the bottom of the tank.

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SOLUTION MAKE-UP (Cont.)

CAUTION: Dissolving the Econoclense D will generate considerable heat therefore take great care when mixing to avoid local boiling or splashing.

Continue stirring until the solids have completely dissolved. Note that the temperature of the solution will rise as the Econoclense D dissolves. Finally, make up to the working volume with water and mix thoroughly before use.

*Although Econoclense D is effective for most applications, in exceptional cases, additions of up to 50 g/l of sodium cyanide may be made to remove exceptionally severe encrustations of oxide, scale or rust.

OPERATING DATA

Electrocleaning

Temperature	Ambient to 65 deg C.
Treatment Time	3 - 15 minutes.
Current Density	2.5 - 10 A/dm ²
	Anodic or periodic current reversal.
PR Ratio	20 seconds cathodic/ 10 seconds anodic.
Anodes	Mild steel.

MAINTENANCE

The volume of the solution should be maintained regularly by addition of water. It is recommended that automatic level controllers are fitted to the tank to ensure constant solution concentration and protect heaters.

The solution should be regularly analysed using the method below and maintained by adding fresh salts as required.

If no analysis is possible then add 10 g/l of Econoclense D when the solution becomes slow in action. The frequency required will depend on the throughput of the tank and the volume of soils removed.

The solution should be discarded and a fresh one made-up when the solution is so loaded with absorbed soils that replenishment has no effect on cleaning time.

SOLUTION ANALYSIS

Reagents

- a) 1N Sulphuric Acid
- b) Phenolphthalein Indicator

Procedure

- a) Pipette a 25.0 ml sample into a 250 ml conical flask.
- b) Dilute to 100 ml with deionised water and add a few drops of phenolphthalein indicator.
- c) Titrate with 1N sulphuric acid from a pink to colourless end point.

Calculation

Titration ml x 2.98 = g/l Econoclense D

TYPICAL PROCESS SEQUENCE

The process sequences shown below are only given as guidance. Exact methods of pre-treatment should be established in a test run.

Zinc on Mild Steel

- 1. PMD 606 soak clean 3 - 5 minutes at 65 deg C.
- 2. PMD 606 anodic clean 3 - 5 minutes, 60 deg C, 4.0 A/dm², 8 volts.
- 3. Cold water rinse.
- 4. 50% hydrochloric acid dip 2 - 5 minutes room temperature.
- 5. Cold water rinse.
- 6. Cold water rinse.
- 7. Econoclense D (6.0 A/dm², 8 volts) anodic clean 2 - 3 minutes, room temperature,
- 8. Cold water rinse.
- 9. Zinc plate.

Silver on Brass or Copper

- 1. PMD 606 cathodic clean 2 - 3 minutes 50 deg C, 4.0 A/dm² 8 volts followed by an anodic flash clean for 5 to 10 seconds in the same solution.
- 2. Cold water rinse.
- 3. Cold water rinse.
- 4. Econoclense D 1 - 2 minutes cathodic clean, 2 A/dm², room temperature. Anodic flash clean for 5 - 10 seconds.
- 5. Cold water rinse.
- 6. Silver strike and plate.

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SOLUTION ANALYSIS (Cont.)

Paint Stripping

1. Make up to 100 g/l and heat to 80 - 100 deg C.
2. Immerse painted steel until coating softens and breaks up.
3. Rinse in cold water followed by water blasting to shift coating.

DISPOSAL

Dispose of in accordance with local authority requirements.

PRODUCT FAMILIES

The following products or product families are referred to in this data sheet.

<u>Product Name</u>	<u>Product Number</u>
Econoclense D	206004
PMD 606	206003

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