Cleaner 59 S

Cleaner 59 S is a powdered, phosphate free, alkaline product which may be used as an electro cleaner (anodically or cathodically) for brass alloys, copper, zinc die castings, slush castings, and lead alloy castings.

Cleaner 59 S was developed as an electro cleaner for non-ferrous metals, yet it may be used as an electro cleaner for ferrous metals. This latter situation may be applied in shops and plants, which process a variety of metals through the same line.

Features & Benefits

Phosphate and chelator free-reduces waste disposal problems	Operates at low temperatures-saves energy.
Readily soluble in cold water	Performs in hard water

Operating Conditions

Concentration	4 – 10 oz/Gal (30 – 75 g/L)
Temperature	110°F – 125°F (43°C – 51°C)
Time	20 – 45 sec
Polarity	Anodic
Current density	10 – 30 amps/ft^2 (1.0b – 3.0 amps/dm^2)
Equipment	Mild steel tanks, coils, and anodes
Ventilation	Recommended

Note: Increasing Operating temperature above 125°F will tend to darken die-casting.

Tank make up procedure

Considerable heat is generated when Cleaner 59 S is dissolved in water. A new solution should be prepared by filling the tank half full of warm water (approx. 100°F, 37°C), and slowly adding Cleaner 59 S while continuously stirring. After the Cleaner 59 S has been

dissolved, add the remainder of the cold water. Heat or cool to desired operating temperature before use.

Note: When adding Cleaner 59 S to an operating solution, add slowly to avoid solution eruption.

Brass and Copper

Concentration	4 – 10 oz/Gal (30 – 75 g/L)
Temperature	110°F – 160°F (43°C – 71°C)
Time	20 – 90 sec
Polarity	Anodic or cathodic
Current density	10 – 40 amps/ft^2 (1.0 – 4.0 amps/dm^2)
Equipment	Mild steel tanks, heating coils and anodes
Ventilation	Recommended

Note: Cleaner 59 S may be used cathodically on brass alloys, copper and lead alloys. Cleaner 59 S is free of chelators, consequently the problem of metallic deposition is eliminated. However, it is still desirable to follow cathodic cleaning with a short anodic cycle.

Maintenance Note for Electro Cleaner
When recharging the tank with a fresh solution be sure that the cathodes are free of sludge and that the bus bars are bright and clean. Sludge cathodes and dirty bus bars act as insulators, which will consequently reduce the current density.

Titration Method

1. Pipette 5 mL of Cleaner 59 S solution into 250 mL Erlenmeyer flask.
2. Add 50 mL of water and 4 to 5 drops Phenolphthalein indicator and swirl to mix well.
3. Titrate with 0.5 Hydrochloric Acid until the solution turns to a clear end point.
4. Record mL used.

Calculation

Factor (oz/Gal)	1.1
Factor (g/L)	8.3

Concentration = mL 0.5 N HCl x Factor

Test Kit Method

1. Fill test bottle ¼ with water.

2. Using syringe, add ½ mL sample of the solution to the bottle
3. Add 5 to 8 drops Methyl Orange indicator and swirl to mix well.
4. Add dropwise 0.72 N Hydrochloric Acid while swirling the mixing bottle until solution turns from yellow to red orange.
5. Record number of drops used.

Calculation

Factor (oz/Gal)	0.8
Factor (g/L)	6.0

Concentration = # Drops 0.72 NaOH x Factor

Waste Disposal

Discharge to a disposal system. In order to be completely informed on the latest regulations for your area, please contact the local authorities.

Caution

Cleaner 59 S is an alkaline product and should be handled accordingly. Avoid skin and eye contact. Wear protective clothing, goggles and gloves. Flush exposed areas immediately with clean cold water. Contact a doctor promptly in case of injury. Consult SDS for details.