

# Aquaease™ E 159

Aquaease E 159 is a powdered alkaline electro cleaner for steel, cast irons, copper, copper plated work, nickel-plated work, or stainless steels.

## Features & Benefits

High conductivity	Effective carbon and particulate soil removal
Can be used cathodically Can be used anodically	Can be used as periodic reverse
Forms a light dense foam blanket	Long life

## Physical Data

Solubility in water	Appreciable
Appearance and odor	White or off-white powder

## Typical Applications

- Electro cleaning prior to plating
- Electro cleaning prior to e-coating

## Operating Conditions

Operating Conditions for Steel and Copper

Concentrations	6 – 18 oz/Gal (45 – 135 g/L)
Temperature	140°F – 205°F (60°C – 91°C)
Polarity	Anodic (reverse current)
Current density	40 – 100 amps/ft <sup>2</sup> (4.0 – 10.0 amps/dm <sup>2</sup> )
Equipment	Mild steel tanks, anodes, and coils
Ventilation	Required

**Operating Conditions for Nickel Plated, Stainless Steels, and Cast Irons (High in Carbon)**

Concentrations	6 – 16 oz/Gal (45 – 120 g/L)
Temperature	140°F – 190°F (60°C – 88°C)
Polarity	Cathodic (direct cleaning)
Current density	49 – 80 amps (4.0 – 8.0 amps/dm <sup>2</sup> )
Equipment	Mild steel tanks, anodes, and coils
Ventilation	Required

Note: When recharging a cleaning tank with a fresh solution, check that the steel electrodes are free of sludge. A sludge build-up will act as an insulator and consequently reduce current flow.

Tank Make Up Procedure

Considerable heat is generated when Aquaease E 159 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 Aquaease E 159 while continuously stirring. After the Aquaease E 159 has been dissolved, add the remainder of the cold water. Heat or cool to desired operating temperature before use.

Note: When adding Aquaease E 159 to an operating solution, add slowly to avoid solution eruption.

**Titration Method**

1. Use 10 mL sample of Aquaease E 159 solution in a 250 mL Erlenmeyer flask
2. Add 50 mL of water into the Erlenmeyer flask.
3. Add 8 drops Phenolphthalein indicator.
4. Titrate with 0.5 N Hydrochloric Acid until the pink disappears.
5. Record mL used.

Calculation

$$\begin{array}{ll}
 \text{Factor (oz/Gal)} & 0.43 \\
 \text{Factor (g/L)} & 3.20 \\
 \text{Concentration} = \text{mL } 0.5 \text{ N HCl} \times \text{Factor} & 
 \end{array}$$

**Test Kit Procedure**

1. Fill bottle 1/3 full of water.
2. Add ½ mL cleaner solution and 8 drops Methyl Orange indicator.



**Cleaning**  
the Hard to Clean



**Finishing**  
the Hard to Finish



**Treating**  
the Hard to Treat

3. Add 0.72 N Hydrochloric Acid solution drop wise until solution becomes reddish-orange.
4. Record the number of drops used.

Calculation

$$\begin{array}{r} \text{Factor (oz/Gal)} \quad 0.33 \\ \text{Factor (g/L)} \quad 2.26 \\ \text{Concentration} = \# \text{ Drops of } 0.72 \text{ N HCl} \times \text{Factor} \end{array}$$

## Waste Disposal

Discharge rinse water and spent solutions to a permitted disposal system. In order to be completely informed on the latest regulations for your area, please contact the local authorities.

## Caution

Aquaease E 159 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.

WARRANTY: THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

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## Our people. Your problem solvers.

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