

## DESCRIPTION

LAC liquid alkaline cleaner is a combination of fast-acting detergents, wetting agents and alkaline cleaners blended in a water-based carrier. It is applied as a highly diluted solution, with fresh or salt water, to remove edible fats and oils, as well as light fuel and lube oils from cargo and storage tanks and associated systems. LAC liquid alkaline cleaner can be used as a tank deodorizer when tanks have been cleaned with petroleum-based tank cleaners. LAC is recommended for cleaning and freshening potable water tanks. LAC is also MARPOL Annex V compliant and can be used for cargo hold cleaning. For cleaning instructions, refer to the Drew Marine Bulk Carrier Guide for Cargo Hold Cleaning

LAC has been evaluated by IMO and approved as a tank cleaning additives under MEPC.1/Circ.590. Tank cleaning additives approved by IMO are used onboard chemical/product tankers in chemical cargo tank cleaning operations and are added in small amounts to the wash water in order to facilitate tank washing.

## TANK CLEANING

The following tank cleaning instructions are not intended to interfere with the judgment of the Master, Chief Mate, or Chief Engineer in the operation and/or navigation of the vessel. They are meant only as a guide since circumstances for each tank cleaning operation will vary. The recommendations provided are designed to achieve the optimum results and are based on over 80 years of tank cleaning experience.

## APPLICATION & USE

The following are general recommendations for the application of LAC liquid alkaline cleaner in the most commonly used tank cleaning procedures.

### Preliminary Considerations for Any Cleaning Method

1. Tanks should be stripped completely at the recommended cargo pumping temperatures.
2. To avoid delays, all equipment for the cleaning method to be used should be onboard and in a condition ready for use before cleaning is begun.
3. Tanks containing drying oils should be cleaned with cold water immediately after discharge to prevent formation of a hard, tenacious residue.
4. Adequate ventilation should be provided and other standard procedures should be observed to allow personnel to enter tanks as soon as possible after unloading.

### Machine Washing

1. Direct Injection Method (the once-through or total loss method).
  - a. Introduce LAC liquid alkaline cleaner directly into the tank wash-water line by means of an eductor or small metering pump. Adjust the feed rate to give the correct solution strength (0.2%-0.8%).
  - b. The tank should be stripped continuously while washing.
  - c. Rinse the tank with ambient temperature water immediately after cleaning with LAC liquid alkaline cleaner.
  - d. If necessary, spot clean manually to remove any patches of soil material that remain after cleaning.
2. Recirculation Method
  - a. While filling the recirculation tank with water, add the amount of LAC liquid alkaline cleaner required for correct solution strength (0.2%-0.8%).
  - b. Except for the fact that tanks being washed are stripped back to the recirculation tank, the procedure is similar to that for once-through washing.
3. Rock-and-Roll Method
  - a. Fill the tanks to be cleaned with water to the required level, at the same time adding enough LAC liquid alkaline cleaner to give correct solution strength (0.2%-0.8%).
  - b. If a warm or hot cleaning solution is required, apply full heat on the heating coils until proper temperature is reached, first checking that the heating coil material is compatible with LAC liquid alkaline cleaner.
  - c. After 24 hours or more, if required, strip and rinse the tank.

It must, of course, be understood that the details of the cleaning methods including temperatures and quantities of cleaner may be subject to change due to varying conditions, all of which obviously cannot be discussed in this data sheet. Therefore, the above is a guide and not an exact procedure to follow at every occasion.

### Boiler Cleaning

1. Install a chemical cleaning circulating unit such as the Drew Marine Chemical Cleaning Circulating Unit.
  - a. Disconnect the bottom blowdown piping after the bottom blowdown valve and install a "tee." Connect a pipe from one end of the tee to waste. Install a shut-off valve in this line. Connect another pipe from the other end of the tee to the bottom of the circulating tank. Connect a pipe from the discharge of the circulating pump to the top of the boiler. Install a check valve and a shut-off valve in this line.



Contact your Drew Marine representative for more information

- b. Set all valves for circulation of the cleaning solution.
2. Fill the boiler with 2%-6% solution (by volume) LAC liquid alkaline cleaner and water at 60°C-71° C (140°F-160°F).
  3. Start filling the mixing tank from the line from the bottom blowdown. When the tank is full, start the circulating pump and regulate the flow of the solution so that the pump removes the water from the tank at the same rate as it is added.
  4. Maintain circulation of the solution at 60°C-71° C(140°F-160°F) for 8-12 hours. Heat should be obtained from a heating coil or a steam line in the cleaning solution tank. LAC liquid alkaline cleaner should never be used as an “online” cleaner.
  5. Drain the boiler and flush from the top down with high-pressure water to remove any loose matter and inspect.
  6. Return the boiler to normal operating conditions by disconnecting the circulation unit and reconnecting the blowdown line.
    - a. Refill the boiler with water and add normal start-up dosages of Drew Marine boiler water treatment chemicals.

- b. If the boiler is not to be put into service immediately, follow standard wet layup procedures.

## TYPICAL PHYSICAL PROPERTIES

Appearance:	Clear, colorless liquid
Specific Gravity @25°C:	1.074
pH:	>13.0
Flash Point:	N/A

**NOTE:** Always wear the appropriate personal protective equipment when using this product.

## PACKAGING

LAC liquid alkaline cleaner is available in 25-liter (PCN 0057407) and 200-liter (PCN 0057423) containers.

## IMPORTANT INFORMATION

Drew Marine maintains Safety Data Sheets on all of its products. Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees.

Our Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Drew Marine products.

## FEATURES

- IMO approved under MEPC.1/Circ.590
- Concentrated blend of powerful detergents, wetting agents and alkaline agents
- No petroleum-based solvents
- Completely water soluble
- Liquid formulation
- No odor
- MARPOL Annex V Compliant

## BENEFITS

- Highly effective oil and grease remover
- Economical
- Multi-purpose marine cleaning agent
- Reduces deposits in blackwater lines, graywater lines, and holding tanks
- Can be used for acid neutralization
- No flash or fire point
- Leaves no oily film
- Can be mixed in all proportions with fresh or seawater
- Easily dosed into marine systems
- Can be applied by high-pressure spray
- Easy to apply
- Can be used for tank deodorizing
- Suitable for disposal at sea when cargo tank residues are disposable at sea
- Excellent for use in cargo holds on dry bulk carriers

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**Drew Marine®**

**100 South Jefferson Road  
Whippany, NJ 07981 USA  
1-973-526-5700  
Drew-Marine.com**

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