

LA-1 CLEAR-CLEANER[®]

LIQUID ALKALINE CLEANER

REPLACES VAPOR DEGREASING
SAFE ON ALL METALS
LOW FOAM
LOW TEMPERATURE
NO CHROME, SULFUR, SODIUM, OR HALOGENS
NONFLAMMABLE
REPLACES OZONE DEPLETING SOLVENTS

Description:

LA-1 Clear-Cleaner[®] was formulated specifically for cleaning prior to penetrant inspection. It is a penetrant compatible cleaner. **LA-1 Clear-Cleaner[®]** replaces chlorinated solvent vapor degreasing as the first stage in the production penetrant inspection process.

LA-1 Clear-Cleaner[®] is a clear, straw colored liquid. It may be used on all metals —ferrous and nonferrous— including aluminum, magnesium, high nickel, and titanium alloys.

It removes light shop oils such as cutting oils, forming oils, light rust preventatives, and organic soils acquired during processing. It also removes grit and chips when used as a pressure-spray or as an agitated-immersion. It does not remove inorganic soils such as corrosion products.

LA-1 Clear-Cleaner[®] serves the same function as the chlorinated solvent vapor degreaser. Plus it can remove chips and grit when agitation is used.

LA-1 Clear-Cleaner[®] complies with **MIL-I-25135** low toxicity, non-corrosive, flash point and similar requirements. It is non-toxic as defined in the Federal Hazardous Substances Act. It meets requirements of **SAE ARP 1755B**, Category 10, Stock Loss Test, as well as **ASTM F945**, Stress Corrosion of Titanium Alloys, and similar appropriate specifications. It also meets **ASME** requirements for low sulfur and low halogen content, and it does not contain sodium, chromates or nitrites.

While formulated specifically for precleaning prior to penetrant application, **LA-1 Clear-Cleaner[®]** is also a good all-purpose, medium duty cleaner. Use it wherever surfaces need to be free of organic soils.

Comments:

Outlawing 1,1,1-trichloroethane (methyl chloroform), the preferred vapor degreaser solvent, places a severe strain on the penetrant process. Vapor degreasing had certain advantages: 1) a single step process, 2) penetrated surface openings, and 3) evaporated completely, leaving no residue.

Major suppliers of vapor degreasing solvents do not have a replacement for 1,1,1-trichloroethane that is acceptable to environmentalists, and they do not contemplate being able to produce one.

LA-1 Clear-Cleaner[®] is the next best thing. While it is not a vapor method, it does penetrate and clean surface discontinuities as well as the surface and, when used as directed, it leaves no residue.

LA-1 Clear-Cleaner[®] is safe on all metals. It conforms to **SAE ARP-1755B** Category 10 Aqueous Cleaner and to **ASTM F-945** Stress Corrosion of Titanium Alloys, Method A.

LA-1 Clear-Cleaner's[®] Advantages:

1. Penetrant compatible.
2. Safe on aluminum, magnesium, high nickel steel and titanium alloys.
3. No chromates, chlorine, sulfur or sodium salts.
4. Low foaming.

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PRODUCT INFORMATION

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5. Free rinsing.
6. May be used with air or mechanical agitation.
7. Effective in low concentrations.
8. Lower material costs compared to vapor degreasing.

Basic Instructions:

LA-1 Clear-Cleaner[®] is used either by spraying or by immersion.

1. Application

A. Spray System Application: Use LA-1 Clear-Cleaner[®] at a 3-5% concentration by volume in water in a recirculating spray system. While LA-1 Clear Cleaner[®] solution is effective at room temperature, a temperature of 120-140°F with spray pressure between 20-35 psi improves performance. Contact time is 1 to 2 minutes. See rinsing instructions below.

B. Immersion System Application: Use in an air or mechanically agitated tank at a concentration of 10-20% by volume in water. Solution temperature should be between 120-140°F for best performance. The length of time parts remain immersed in the tank depends on the type and degree of contamination. Experimentation will reveal ideal dwell time. Upon removal, allow the parts to drain over the tank to minimize drag-out before rinsing. See rinsing instructions below. (Most vapor degreasing equipment can be converted to an agitated hot tank for use with LA-1 Clear Cleaner[®], liquid alkaline cleaner.)

NOTE: Maximum allowable spray or immersion time is 60 minutes. Also, perform the rinse step before LA-1 Clear-Cleaner[®] has the opportunity to dry on the surface.

2. **Rinsing:** *Thoroughly* rinse the part with water, either by forceful spray or by immersion in an agitated tank with overflow. Water temperature can be ambient to 140°F; warm water is preferred. Rinse sufficiently to remove all cleaner/soil contamination from the surface. DO NOT allow cleaner to dry on the surface; rinse immediately with a large volume of warm water.

Thorough rinsing is extremely important!

In areas of hard water, "de-ionized" rinse water is recommended.

3. **Drying:** *Thoroughly* dry the part prior to applying penetrant. Drying must be adequate not only to evaporate rinse water remaining on the surface but to evaporate rinse water that may have penetrated surface discontinuities. A recirculating drying oven is recommended when using LA-1 Clear-Cleaner[®] as the first step in the production penetrant process.

4. **Solution Maintenance:** Add LA-1 Clear-Cleaner[®] as necessary to maintain the concentration needed to meet cleaning requirements. Frequent small additions are preferred. A concentration test procedure is available upon request.

Although laboratory and field experience indicate that LA-1 Clear-Cleaner[®] has a high capacity for soils, periodic recharging will be necessary. Time between recharging will depend upon the type and amount of soil removed.

Note: When the LA-1 Clear-Cleaner[®] solution is not being agitated, an oily appearing film may form on the surface. This is **not** oil; do not remove it. It is part of LA-1's formulation; removal will result in reduced cleaning and increased foaming.

PRECAUTIONARY INFORMATION

LA-1 Clear-Cleaner[®] is a nonflammable, relatively safe alkaline material. However, it is important that workers wear eye protection as well as protective clothing, e.g. chemical-proof aprons and gloves. In the event of eye or skin contact, flush thoroughly with water. Use the product with adequate ventilation. Consult the MSDS for additional precautionary information.