

CleanSafe® Locomotive Cleaning - Use Instructions

Overview

CleanSafe is a non-hazardous, environmentally friendly, personnel friendly cleaning product that is very effective at tough cleaning jobs which could only be handled by aggressive, hazardous products in the past. CleanSafe is particularly effective for removing the heavy grease, oil, grime, soot and road film from in-service railroad locomotives. However, as for any cleaner, equipment used and cleaning technique are important elements of the overall procedure.

Equipment

CleanSafe is best applied to a locomotive with a low-to-moderate pressure foaming mechanism. Line pressure should be in the range recommended by the foam equipment manufacturer. This is usually in the range of city water pressure, or 30-100psig. Therefore, city water pressure can be used as the motive force to both drive water of dilution through an in-line mixer and suck CleanSafe into the line in advance of the foamer. Alternatively, CleanSafe can be applied directly to the locomotive at full-strength with nearly any type of low-pressure sprayer. CleanSafe should be rinsed off using a high-pressure sprayer/washer that delivers at least 2000psig at the nozzle discharge. Units such as those made by Landa and Hotsy are representative of this type of pressure washer recommended. Fan-spray-type or wedge-type nozzles can be used for both foam-on and rinse-off operations. Material of construction for pumps, lines, valves, etc. should be mild steel, stainless steel, cast iron or plastic/polymeric.

Cleaning Procedure

Apply CleanSafe with a low-pressure sprayer with a fan-type nozzle either as a diluted or full-strength foam. Concentrations can be as low as 20%-40% volume dilutions with water for high pressure, heated-rinse-water, automatic washing facilities or as high as 50%-100% for manual spray/rinse operations. Temperatures of the cleaner and water should be at least 50°F; however, cleaning efficiency improves as the temperature of the water/cleaner is increased up to about 125°F.

Apply CleanSafe with an even, back-and-forth, horizontal motion, starting at the bottom of the locomotive and moving up. It is usually best to apply CleanSafe to 1/4-1/3 of a side at a time prior to rinsing. However, with a very thorough, even application, an entire side can be done in one application. Although the cleaner may dry before the side is totally rinsed, only water evaporates from the surface of the locomotive since CleanSafe's active ingredients are non-volatile. As a result, CleanSafe will still clean and rinse effectively after it dries.

Allow CleanSafe to remain on the surface of the locomotive for at least 3-5 minutes prior to rinsing off a section. This will provide time for CleanSafe's active components to dissolve, emulsify and lift/remove oil, grease, grime, soot and road film prior to rinsing it off. The needed "dwell time" as it called, and the best concentration of cleaner to use depends on the difficulty of the cleaning job. This is best determined by starting with full-strength CleanSafe and reducing the concentration in steps until cleaning performance begins to decline.

Do not wet the surface to be cleaned with water prior to applying CleanSafe. This simply dilutes the cleaner right at the surface to be cleaned. It is usually best to apply CleanSafe to a dry surface.

After the appropriate dwell time has been allowed, rinse the locomotive surface with high-pressure water from pressure washing equipment such as the types made by Landa, Hotsy and others, at least 2000psig at the spray nozzle is recommended. Hot water improves both the

cleaning and rinsing effectiveness, but is not a requirement. Use a fan or wedge type sprayer nozzle and rinse from the top down in even, horizontal back-and-forth motions to avoid vertical streaking.

Capture and treat the run-off from the locomotive cleaning operation, if required by local, state or federal regulations, or company policy.

Protective Equipment

Although CleanSafe is non-hazardous and has low levels of aggressiveness to human tissue, it is always wise to prevent cleaners from contacting skin and eye tissue for prolonged or repeated periods of time. Skin sensitization is always possible over time. Use of water resistant gloves, boots and clothing is always possible over time. Use of water resistant gloves, boots and clothing and goggles or safety glasses plus a face shield and hard hat are recommended, especially for large jobs such as locomotive cleaning.

Cleaning Procedure Overview

PREPARATION: Apply CleanSafe to a dry surface. Do not wet the surface to be cleaned with water prior to applying CleanSafe.

APPLICATION: Apply CleanSafe with a low-pressure sprayer with a fan-type nozzle in an even, back-and-forth, horizontal motion, starting at the bottom and moving up. It is usually best to apply CleanSafe to 1/4-1/3 of a side at a time prior to rinsing. However, with a very thorough, even application, an entire side can be done in one application

DWELL TIME: Allow CleanSafe to remain on the surface of the locomotive for at least 3-5 minutes prior to rinsing off a section.

RINSE: Rinse the locomotive surface with high-pressure water from pressure washing equipment at, at least 2000psig at the spray nozzle. Hot water improves both the cleaning and rinsing effectiveness, but is not a requirement. Use a fan or wedge type sprayer nozzle and rinse from the top down in even, horizontal back-and-forth motions to avoid vertical streaking.

FINISH: Capture and treat the run-off from the locomotive cleaning operation, if required by local, state or federal regulations, or company policy.

Proper Use for Health and Safety

Where skin contact may occur, water-impervious gloves should be worn. Use goggles or full face shield when the danger of splashing exists. Wash any areas of skin contact thoroughly after use of this product. Avoid repeated or prolonged skin contact. Do not take internally. Clean up spills immediately. Keep containers tightly closed when not in use. Consult MSDS for additional safety information.

Technical Contact Information

Additive Technologies, LLC
1515 West 2200 South, Suite C
Salt Lake City, Utah 84119
Tel: 303-300-6525
Fax: 801-340-0217