

LBNE LAr-FD Cleaning Procedure

This procedure is for cleaning the vessel and components of the system that will be in contact with the Argon volume in the detector. After cleaning, all parts will be stored in a manner that maintains the cleanliness level.

Membrane cryostat walls: There will need to be a final cleaning of the membrane cryostat prior to detector installation to remove any residual leak checking materials, dust, etc. First sweep and vacuum the cryostat floor. Use a power washer to spray down the surfaces with a mixture of Simple Green concentrated cleaner and distilled or deionized water. A medium concentration of 30 to 150 parts water to Simple Green is suggested. Do not allow the mixture to dry on the surfaces. Follow up within three minutes with a rinsing power wash of clean deionized (DI) water. Inverted and vertical surfaces can air dry. To clean the floor, push the water towards a water pumping corner using a power washer with clean deionized water. Follow up with a leaf blower or other similar air sweeping device. In the water pumping corner, pump or vacuum the water out of the cryostat. Final dry large residuals with lint free cloths or mops and air dry.

Process piping: Prior to assembly. Incline the pipe. Clean the inside of the pipe with warm tap water and Dawn dishwashing soap, and lint free rags or plastic brushes pulled thru the pipe until all signs of contamination are removed. Consider use of a rotating brush (made of a material that won't scratch the pipe). Rinse the inside of the pipe with tap water to remove all soap residue. Do a final rinse with DI water. After the pipe is dry plug/cap both ends until ready for

installation. Immediately prior to welding and assembly, pipe and tube sections should have their interior surfaces cleaned with pure ethyl alcohol. This can be done by pulling an alcohol saturated lint free cloth thru the tube/pipe or by rinsing and blowing dry for smaller diameters. Cap the ends of piping after cleaning.

TPC components: Individual pieces should be cleaned by alcohol or simple green plus a deionized water rinse during construction such that the final assembly is relatively clean. This applies to Interior surfaces of tubing and piping of the frames as well. Components should be double bagged while still in clean areas prior to being exposed to dirty environments. Prior to taking the component into a clean environment, the outer bag is removed. Once the component is in the clean environment, the inner bag is removed.

Wires and cables: Wires and cables will need to be wiped down with alcohol prior to being installed in the cryostat. After cleaning, the wiring should be dried out to remove the majority of initial moisture. Place the wiring into a vacuum chamber and pull a vacuum for at least 48 hours. If a vacuum oven is available, heat the cables to ~60 C or whatever the wiring can tolerate. Let the chamber pressure up with dry argon or nitrogen gas. Double bag the wiring with each bag being purged with dry argon or nitrogen prior to sealing. Keep wires in a dry atmosphere until it is time to be installed.

G-10 & Plastic parts: G-10 and Plastic parts will be cleaned in an ultrasonic cleaner with the "elma clean 65" from Tovatek LLC. The parts will then be baked in a vacuum oven and double sealed in plastic bags that are purged with dry argon or nitrogen.

Other Parts: Some purchased components will come cleaned and bagged for high purity or high vacuum use. These do not need to be re-cleaned. Anything cleaned and bagged for oxygen service does not need to be re-cleaned. Use good judgment for other parts.

Small Parts: Smaller parts will be put into the available ultrasonic cleaners and cleaned. The process for ultrasonic cleaning of smaller parts is:

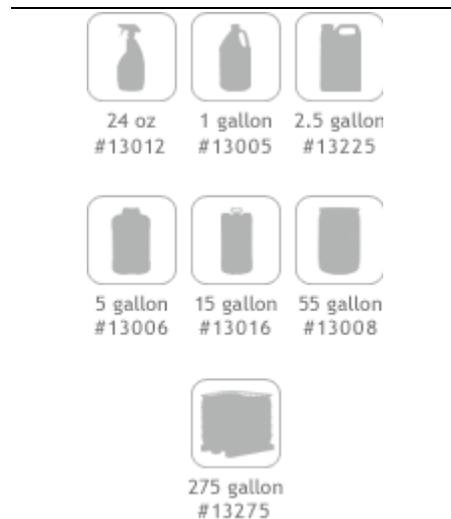
- pre-rinse in tap water, wipe of big dirt flakes with hand - 1st sonic bath wash, heated distilled water with Citranox , simple-green or some acceptable detergent.(15 minutes = max allowed time on bath timer) - Rinse with distilled water in a bucket, wipe with kimwipes - 2nd sonic bath wash, heated distilled water w/cleaner detergent(15 minutes) (new solution needed) - Final rinse, 2x with distilled water (no sonic, just 2 buckets)

Parts will then be rinsed with distilled water and allowed to dry in a clean environment. After cleaning parts will be wrapped in plastic or stored in bags.

APPENDIX

Simple Green Concentrated Cleaner

http://industrial.simplegreen.com/ind_products_all_purpose.php



Available in These Sizes:

Simple Green® is one of the most versatile all-purpose cleaners you can buy! It's non-toxic and biodegradable, without the use of harmful chemicals. Because it is a concentrate, you can custom dilute Simple Green to clean just about anything. It replaces most general and specialty cleaners, detergents, degreasers and solvents you're using now!

Discover the value and power of Simple Green and your green will go a lot further, too.

- Non-Toxic, Biodegradable
- Non-Ionic, Non-Flammable, Non-Abrasive
- Exempt from OSHA & EPA special handling & personal protection requirements for hazardous materials

- Economical Concentrate
- Safer alternative to hazardous chemicals and solvents
- Authorized by the USDA for use in Federally inspected meat & poultry plants

The simple fact is, Simple Green is as strong as it is safe. Which makes it one of the most cost effective ways to remove oil, lubricants, grease and grime from practically any washable surface. Concentrated, water-based cleaner/degreaser contains a blend of synthetic, high-grade penetrants activated by cold/hot water. Custom dilute for specialized cleaning. For use in a broad range of applications including dip tanks. “Clear green” liquid has a mild pH of 9.3 to 9.5 and a pleasant sassafras scent. Contains no petroleum.

Where to Use

- Engines and machinery
- Dip tanks, aqueous-based parts washers, steam cleaners and pressure sprayers
- Manufacturing equipment
- Food processing plants and food preparation areas (grills, vents, traps & more)
- Prepping prior to painting, plating or welding
- Floor scrubbing and general plant maintenance
- Fleet and mass transit vehicles
- HVACR coils and cooling towers
- Removing machining oils and cutting fluids from manufactured parts and extruded tubing

Industrial Equipment

Simple Green offers a multitude of ways to ensure proper use, dilution, mixing, and application of our outstanding cleaning products, including 30-, 60-, and 80-gallon capacity parts washers, a multi-dilution foamer, and a 4-way proportioner.

Uses/Dilution Sheet

Need to know how to clean something? Download our [Industrial/Institutional Applications/Dilution Ratio Chart](#) (requires [Adobe Acrobat Reader](#)).

Safety Comparison Chart

Safety Comparison Chart (requires Adobe Acrobat Reader)

- REPLACES OZONE DEPLETING SUBSTANCES (ODS) and hazardous chemicals. Meets federal Clean Air Act requirements - no need for ODS warning labels.
- LISTED ON THE EPA NATIONAL CONTINGENCY PLAN (NCP) Product Schedule as a surface washing agent.*
- EXEMPT FROM OSHA AND EPA REQUIREMENTS for special handling and personal protection for hazardous materials.
- USDA AUTHORIZED for use in Federally inspected meat and poultry plants.
- HELPS REDUCE WORKERS COMPENSATION CLAIMS in 4 major areas: Slip and fall, inhalation problems, eye damage, contact dermatitis/chemical burns. Mild 9.5 pH provides user-friendly cleaning

* Simple Green is on the U.S. Environmental Agency's National Contingency Plan schedule as a surface-washing agent for use in oil spills occurring in open waterways. This listing does not mean the EPA approves, recommends, licenses, certifies or authorizes the use of Simple Green. The listing means only that data has been properly submitted to the EPA as required by Subpart J of the National Contingency Plan. Coast Guard approval is required for specific NCP uses.

- SAVES TIME by thoroughly, quickly breaking up grease and sludge to easily rinse off all water-safe surfaces.
- SAVES MONEY by eliminating inventory of single purpose cleaners. Concentrate allows custom blending for heavy to light cleaning needs.
- CUTS COSTS related to disposal of hazardous wastes, and costs of the protective gear required for handling high pH and caustic cleaners.
- SAVES LABOR by reducing scrubbing and brushing. IT WORKS.

Available in 24 oz. trigger, 1 gallon, 2.5 gallon, 5 gallon, 15 gallon and 55 gallon drums and 275 gallon totes.

Material Safety Data Sheet

Material Safety Data Sheet (requires Adobe Acrobat Reader)

Chemical Safety Survey

Simple Green®'s Chemical Safety Survey service is a personalized evaluation of end-user facilities to pinpoint and eliminate hazardous, costly and inefficient cleaning materials from the workplace. In addition, this service helps consolidate facilities' product inventory, save money and incorporate a safer systems approach to the workplace. Go to our [Chemical Safety Survey](#) section for more information.

Question?

Have a question? Need more information? Check out our [Frequently Asked Questions](#) section for detailed information about Simple Green products, applications, cleaning instructions and other helpful tips. Or try searching our website.

Elma Clean 65 1 Liter

Manufacturer: Elma GmbH & Co KG **Cat No: 58101** Ultrasonic Cleaning Fluid, Neutral Concentrate

elma clean 65 is a liquid ultrasonic cleaning agent that was specially developed to gently clean instruments and work pieces made from sensitive and delicate materials. Appropriate for metal, glass, rubber, plastic as well as workpieces made from susceptible minerals. Removes soilings such as dust, oil, light greases and pigments.

Dosage and application:

For ultrasonic cleaning use 2-5% = 20-50ml per liter at 20-80°C / non-ultrasonic immersion bath 5-20% = 50-200ml per liter. Rinse and dry cleaned parts.





Zoom:

[Home](#) > [Dawn](#) > [Dawn Products](#) > Dawn Original - 38 oz

037000429029

Dawn Original - 38 oz



- [Product Description](#)
- [Product Details](#)

Ultra Dawn has the power you need to fight tough grease and get the squeaky-clean dishes you're looking for.

- 2X Concentrated - more power, less waste (vs. non-ultra Dawn)
- Contains 30% more cleaning ingredients per drop than the leading non-concentrated brand
- You can count on Ultra Dawn to get through more dishes without the water feeling greasy

Warnings: Keep out of reach of children. If Dawn gets in eyes, rinse thoroughly with water. If swallowed, drink a glass of water to dilute. Dawn contains biodegradable surfactants. Contains no phosphate.

Directions: Do not add bleach. Not for use in dishwashers.

10/9/2012

Indications: Dawn contains biodegradable surfactants. Contains no phosphate.