n3He Wire Frame Soldering Steps Rev. 1

Mark McCrea

November 22

Contents

1 Cleaning

Note: Wear clean gloves during handling to prevent contamination of the wire frame with oils from hands.

1.1 General Cleaning

Items other than the wire frames, such as the housing, screws, and end plates, will be cleaned following procedure given below starting with soap and finished with ethanol.

The frame are to be cleaned differently as the metallization cannot be scrubbed clean without risking damage.

1. Scrub with detergent and water to remove oils.
    - Large Kim wipes for scrub pad.
    - Caution: Be careful to avoid damaging the knife edge on flanges and the target chamber.
2. Clean with ethanol to remove soap.
3. Allow to air dry.

Note: The ultrasonic bath may be used with either the detergent and water solution or ethanol to clean a batch of the small parts as required. Disposal of the alcohol must be done following ORNL requirements into the provided container.

1.2 Clean Wire Frames

No need to clean frames prior to soldering.

2 Frame Stringing

Note: Wear clean gloves during handling to prevent contamination of the wire frame with oils from hands.
Caution: Wear eye protection while soldering.
Note: Each frame needs to have all of its wire soldered into place under consistent tension.
Caution: Excessive heating duration can damage metallization. Apply heat for as short of duration as possible.
Caution: Sharp temperature gradients in ceramics can result in cracking. For this reason a lower soldering iron temperature and preheating using hot air over the whole frame is used.

2.1 Tools and Materials

- Weller WD1 solder station with WP80 pencil
- Ryobi Non-Contact Infrared Thermometer
- 0.02" Diameter Copper Wire
- 60/40 tin/lead solder with rosin core

2.2 Frame Soldering Procedure

Soldering temperature is to be 244°C for joining wires in the grooves.

1. Cut to length copper wires for the frame
    - 9 per signal frame
    - Signal frame wires need to 3-4" past end of frame after loop is removed
    - 8 per HV frame
    - HV frame wires need 2-3" past frame after loop is removed.
2. Clean lengths of copper wire .
    - Use kim wipe and ethyl alcohol to clean each wire
3. Twist and solder ends into loop for attaching to support on one end weights on the other.
4. Place frame in jig and clamp down top and bottom.
    - Space under frame with washers to reduce heat loss to metal table and align with rollers.
    - It is important that the frame not lift while the wire is under tension as the wire can easily peel off.
    - Caution: Over tightening clamps could crack the frame.
5. Pre-heat the frame with hot air gun to 40-45° C.
    - Move the heat gun for even heating across the frame.
6. Tension wires over frame.
    - Wires can be tensioned into place while the frame is preheating.

7. Position heat gun in stand 3-4 inches above frame offset offset a couple of inches from side being soldered.
    - Frame should be around 45-50 deg C in the area being soldered and have a 65-80° C surface temperature where a solder joint was recently completed.
    - Far end of frame will be 30-40°C
    - Metal table surface will read as approximately 30°C
8. Pre-tin wire.
    - Increase soldering iron to 290°C and carefully lift wire above the frame so the ceramic is not heated
    - Caution: Heat must be reduced back to 244°C before soldering to frame.
9. Solder wires to frame groove along top side.
    (a) Hold iron in contact with wire and frame.
    (b) Apply solder between frame iron.
    (c) Solder will not melt until frame has heated, count 5 seconds after solder has melted and move 2/3 of length of knife edge solder tip. and repeat for length.
    (d) Surface will be rough, slowly drag soldering iron backwards through joint to reflow solder into a smoother surface.
10. Remove top support to allow full weight to be taken up by frame.
    - Caution: At this stage the frame may try to flip upwards if not clamp down at the top.
11. Allow 24 hours pre-creep for the copper deform over time.
12. Solder wire to other side of frame following same procedure of tinning the wire, and metallization prior to joining the pieces.

Note: Don't solder the HV wire frames all of the way to the top edge. A piece of solder overhanging could be a source of arcing.
Note: HV frame wire ends should be clipped below the top of the frame so that they can't arc over to the signal frame wires.
Note: Signal frame wire ends should be left long so that they can be threaded onto the signal boards.

2.3 Ground Rings on HV Frames

Each HV frame has 6 ground rings that are used to drain leakage current from the surface of the HV frame off to ground before it can read the signal frames. These wires need to be attached back and front to the HV frames.

1. Tin 1/4" on end of 3" wire section.
2. Use hot air gun to pre-heat ground ring.
3. Tin section of ground ring.
4. Solder wire to frame.

For back side the three point mount can be used to space the wire frame off the table by using one of the end plates and three ball bearings.

3 Frame Cleaning Procedure

Following soldering the frames need to be cleaned to remove the solder flux and other contaminants from the board.

1. Clean frame with detergent and distilled water in ultrasonic cleaner for 10 minutes.
2. Rinse Frame in distilled water.
3. Prepare an ultrasonic cleaner bath with the Chemtronics ES132 flux remover following manufacturers directions.
   (a) Mix 10 parts deionized water to 1 part flux remover
   (b) allow 2 minutes to degas
   (c) Clean for 1 hour at 50 degrees Celsius.
   Note: Requires roughly 1.3 gallons of flux remover solution for a bath.
4. Rinse with de-ionized water.
5. Clean with ethyl alcohol in ultrasonic bath for 30 minutes.
   - Requires roughly 1.3 gallons of alcohol per bath.

There are a total of roughly 40 frames to be soldered and cleaned. Each frame will take roughly 28 hours to complete. There are two wiring jigs so two frames can be constructed simultaneously. Some reuse of cleaning baths may be possible so total discarded fluids will have a maximum of 60 gallons over 30 days.

Ethyl alcohol is to be discard into the provided container for later pickup.

Further Cleaning:

- Should each frame be pumped and baked then put into clean storage?
- What kind of clean storage? Ziploc bag after pumping?

4 Frame Storage

The frames need to be stored in a clean environment where no damage is done to the wires or the frames.

A dedicated area of the lab either using preferably some of the drawers or cupboards rather than the table top, needs to be set aside for this. Each frame will require more than one square foot to store, perhaps stacking on the end plate if storage space becomes limited.

CHEMTRONICS®
Technical Data Sheet

TDS # 132

Flux-Off® Aqueous

PRODUCT DESCRIPTION

Flux-Off® Aqueous is ideally formulated for flux removal in ultrasonic and in-line cleaning systems. It is an excellent cleaner for the removal of all rosin and no clean flux types from electronic subassemblies, printed circuit boards and all other electronic components. This concentrated formula can be diluted 1:10 with deionized water for many cleaning applications. Flux-Off® Aqueous will effectively remove other contaminants such as dirt, grease, handling soils and molding compounds.

- For use with ultrasonic and in-line cleaning systems
- Quickly removes all rosin and no clean flux types
- Removes encrusted, hard, baked fluxes
- Powerful cleaner leaves no residue
- Contains no CFCs or HCFCs
- Nonabrasive
- Nonflammable
- Noncorrosive

TYPICAL APPLICATIONS

Flux-Off® Aqueous removes flux residues and cleans:

- Chip Carriers
- Heat Sinks
- Metal Housings and Chassis
- Motors and Generators
- Printed Circuit Boards
- Surface Mount Device Pads

TYPICAL PRODUCT DATA AND PHYSICAL PROPERTIES

Boiling Point	212°F (Initial)
Solubility in Water @ 77°F/1 atm	100%
Specific Gravity (water = 1@ 77°F)	1.03
Flash Point (TCC)	None
Evaporation Rate (butyl acetate=1)	>1
Appearance	Clear, Amber Liquid
Surface Tension (dynes/cm @ 73°F)	28.0
pH	12.5
Shelflife	2 years after opening
RoHS/WEEE Status	RoHS WEEE Compliant
VOC content	164 g/L as purchased* 1:10 dilution- 16 g/L as used

***** SCAQMD compliant when diluted 1:7

COMPATIBILITY

Flux-Off® Aqueous is generally compatible with most materials used in printed circuit board fabrication. With any cleaning agent compatibility must be determined on a non-critical area prior to use.

Material	Compatibility
ABS Resin	Excellent
Buna-N	Fair
Butyl	Excellent
EPDM	Excellent
Graphite	Excellent
HDPE	Excellent
Kynar™	Excellent
LDPE	Excellent
Lexan™	Excellent
Neoprene	Good
Noryl®	Good
Nylon 101	Good
Cross-Linked PE	Good
Polyacrylate	Fair
Polypropylene	Good
Polystyrene	Good
PVC	Fair
Silicone Rubber	Good
Teflon™	Excellent
Viton™	Good

USAGE INSTRUCTIONS:
For industrial use only.
Read MSDS carefully prior to use.
Dilute 1:10 with deionized water for general cleaning. Can be used in hot or cold immersion, ultrasonic or aqueous cleaning systems. For immersion systems, soak as necessary. For ultrasonic cleaning, add Flux-Off® Aqueous to the ultrasonic cleaning tank, allow about two minutes for the mixture to degas, and immerse the part to be cleaned in the ultrasonic cleaner. After cleaning, rinse parts in de-ionized water and dry where required.

AVAILABILITY
ES132 1 Gallon Liquid

TECHNICAL & APPLICATION ASSISTANCE
Chemtronics® provides a technical hotline to answer your technical and application related questions. The toll free number is:
1-800-TECH-401.

NOTE:
This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly.
CHEMTRONICS® does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.

MANUFACTURED BY:
ITW CHEMTRONICS
8125 COBB CENTER DRIVE
KENNESAW, GA 30152
1-770-424-4888 REV. E (06/06)

DISTRIBUTED BY:

SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION

Company Address:
8125 Cobb Center Drive
Kennesaw, GA 30152

Product Information: 800-TECH-401
Customer Service: 800-645-5244
Emergency: (Chemtrec) 800-424-9300
Revision Date: April 15, 2010

Product Identification

FLUX-OFF® AQUEOUS (Liquid)

Product Code: ES132, ES832L

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Wt. % Range
Deionized water	7732-18-5	50.0-75.0
Dipropylene glycol methyl ether	34590-94-8	10.0-20.0
Propylene glycol butyl ether	5131-66-8/15821-83-7	5.0-10.0
Sodium xylene sulfonate	1300-72-7	5.0-10.0
Sodium metasilicate	6834-92-0	1.0-5.0
Benzyl alcohol	100-51-6	0.5-2.0

SECTION 3: HAZARDS IDENTIFICATION

Emergency Overview: Clear, colorless liquid with mild solvent odor. Liquid will irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product vapor may produce central nervous system depression. This product is not flammable.

Potential Health Effects:

Eyes: DO NOT get in eyes. This product is irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

Skin: Contact may cause skin irritation.

Ingestion: DO NOT take internally. Harmful if swallowed. Irritating to mouth, throat and stomach. May cause vomiting.

Inhalation: Excessive inhalation of vapors can cause nasal and respiratory irritation and central nervous system effects including dizziness, weakness, fatigue, nausea, headache and unconsciousness.

Pre-Existing Medical Conditions Aggravated by Exposure: Lung, skin, eye and central nervous system.

SECTION 4: FIRST AID MEASURES

Eyes: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel if irritation develops or persists.

Skin: Wash skin with soap and water immediately. Remove contaminated clothing. Get medical attention if irritation develops or persist. Wash clothing separately before reuse.

Ingestion: Swallowing less than an ounce will not cause significant harm. For larger amounts, do not induce vomiting, but give one or two glasses of water to drink and get immediate medical attention.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: >200°F (>100C) LEL/UEL: Not established (% by volume in air)

Extinguishing Media: Use water fog, carbon dioxide, or dry chemical when fighting fires involving this material.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus (pressure-demand, MSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Large Spills: Shut off leak if possible and safe to do so. Wear self-contained breathing apparatus and appropriate personal protective equipment. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container for proper disposal. Do not flush to sewer. Avoid runoff into storm sewers and ditches which lead to waterways.

Small Spills: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container for proper disposal.

SECTION 7: HANDLING AND STORAGE

Avoid prolonged or repeated contact with eyes, skin, and clothing. Wash hands thoroughly after handling or contact. Use with adequate ventilation. Avoid breathing product vapor or mist. Do not reuse this container. Store in a cool dry place away from heat, sparks and flame. Keep container closed when not in use. Do not store in direct sunlight.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Guidelines:

CHEMICAL NAME	ACGIH TLV	OSHA PEL	ACGIH STEL
Dipropylene glycol methyl ether	100 ppm	100 ppm	150 ppm
Propylene glycol butyl ether	NA	NA	NA
Benzyl alcohol	NA	NA	NA

Work/Hygienic Practices: Good general ventilation should be sufficient to control airborne levels. If vapor concentration exceeds TLV, use NIOSH approved organic vapor cartridge respirator. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves when handling this material.

NFPA and HMIS Codes:	NFPA	HMIS
Health	1	1
Flammability	0	0
Reactivity	0	0
Personal Protection	-	B

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear, pale yellow liquid
Odor: Mild solvent
pH: 12 - 14
Vapor Pressure: 14 mm Hg @ 25C
Vapor Density: Not available
Boiling Point: 212 F (100C)
Solubility in Water: Completely
Specific Gravity: (Water =1) 1.03
Evaporation Rate: <1 (Butyl acetate=1)
Melting Point: NA
Percent Volatile: 93%

SECTION 10: STABILITY AND REACTIVITY

Stability - This product is stable. Conditions to Avoid: Do not spray near open flames, red hot surfaces or other sources of ignition.
Incompatibility: Do not mix with aluminum, galvanized iron and zinc, powdered alkali and alkaline earth metals or strong oxidizing agents.
Products of Decomposition: Thermal decomposition may release carbon monoxide, carbon dioxide and incompletely burned hydrocarbons.
Hazardous Polymerization: Will not occur
Conditions to Avoid: NA

SECTION 11: TOXICOLOGICAL INFORMATION

Ingestion:

Sodium metasilicate	LD50/rats	1153 mg/kg
Dipropylene glycol methyl ether	LD50/rat	5135 mg/kg
Propylene glycol butyl ether	LD50/rat	3300 mg/kg

Inhalation: Not considered a hazard.

Skin:

Dipropylene glycol methyl ether	LD50/rats	9,500 mg/kg
Sodium metasilicate	Human	250 mg/24H SEV
Propylene glycol butyl ether	LD50/Rabbit	3100 mg/kg

Eye:

Dipropylene glycol methyl ether	human	8 mg MLD

Cancer Information: No ingredients listed as human carcinogens by NTP or IARC
Reproductive effects: none Teratogenic effects: none Mutagenic effects: none

SECTION 12: ECOLOGICAL INFORMATION

Environmental Impact Information

Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

REPORTING

US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is:**1-800-424-8802**

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATION

Proper Shipping Name
Air and Ground:: Cleaning Compound
Not Regulated

SECTION 15: REGULATORY INFORMATION

SECTION 313 SUPPLIER NOTIFICATION
This product contains no toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).
This information should be included on all MSDSs copied and distributed for this material.
TOXIC SUBSTANCES CONTROL ACT (TSCA).
All ingredients of this product are listed on the TSCA Inventory.
WHMIS: Class D2B
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION Note: This MSDS is applicable to date codes of 1215 and later.

Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.

INSTRUCTION MANUAL

DO NOT OPERATE YOUR ULTRASONIC CLEANER UNTIL YOU READ AND THOROUGHLY UNDERSTAND THESE INSTRUCTIONS.

ULTRASONIC CLEANING: Ultrasonic cleaning is the use of sound waves beyond the range of human audibility to perform scrubbing of a soiled part in a cleaning liquid. The transmission of these waves into the fluid causes the formation of millions of microscopic bubbles which collapse and release an intense amount of energy to literally "blast" the soils free from the external walls of the part being cleaned. This is known as "cavitation" and is the most modern, safe, gentle and thorough way of cleaning yet devised for most metallic and non-metallic parts.

An ultrasonic cleaning system consists of a "generator" which is an electronic device capable of generating electric energy at an ultrasonic frequency and a "transducerized tank" which holds liquid and parts. Together they create a "scrubbing action" in the liquid which results in thorough cleaning of the parts. The "S" systems are one piece consoles housing both the generator and transducerized tank in a rugged cabinet.

The SONICOR generators used in these systems are the most advanced in miniaturized solid-state technology. They consist of one or more modular type printed circuit board transistorized power packs. This modular concept simplifies maintenance, lowers initial operating costs and provides high operating efficiency.

OPERATION OF THE CLEANER: The "S" series cleaning systems are designed to be as foolproof as possible and to be simple enough to be operated without any special skill or training. The following suggestions should, however, assist in getting the most efficiency from them:

1. Select the desired cleaning solution (see SONICOR Chemical Data Sheets).
2. Fill the tank to the desired level with the solution. A minimum of two inches (heated systems must have three inches) of liquid should always be in the tank to prevent damage. Normally, the tank needs to be filled only enough to cover the parts being cleaned. **NEVER OPERATE THE UNIT WITHOUT LIQUID IN THE TANK.**
3. Plug the unit into an electrical outlet (110/120 volt, 50/60 cycle, 1 phase). Make certain a three prong (grounded) plug is used or that a separate ground is run to the unit.
4. Turn the unit "ON" using the amber colored switch (Timer equipped: turn to desired cleaning time cycle). The pilot light switch will glow and a characteristic buzzing noise will be heard in the tank. It is best to wait two to three minutes before cleaning when adding new liquid to permit the escape of entrapped air and other gasses (degassing) which would decrease cleaning efficiency. Some units are supplied with a toggle switch and a pilot light instead of the push button switch.
5. The model containing two switches is equipped with built-in heater system. These units must always be used with a minimum of 3" of cleaning solution. The amber switch is for ultrasonic cleaning ON/OFF and the red switch is for the heater ON/OFF. The heater system switch may be left on (providing there is always 3" of solution in the tank) thereby maintaining solution temperature and only activate the ultrasonic control when it is necessary to clean.
6. When the unit is "ON" you will be aware of the buzzing noise indicating ultrasonic activity in the tank. This will vary in intensity throughout the operation as will rippling of the surface. This variation has generally no bearing on the cleaning efficiency of the unit and may change considerably in intensity when work is introduced or as various aqueous and solvent cleaning solutions are used. Solvents must be warm before they operate properly.
7. Work to be cleaned should be positioned in the tank. In most cases, it may be desirable to use a rack or basket designed for ultrasonic use. Your SONICOR Applications Engineer or Technical Representative will be pleased to assist you in the selection of the best device to suit your needs.

8. "Cleaning time" will depend on the amount, location and type of soil to be removed. While most surface soils can be removed instantaneously, heavy soil embedded in the cracks, crevices and pores of the part may require several minutes. Loading the workbasket with heavily soiled parts that are touching will further increase the cleaning tine. As mentioned before, selection of the proper cleaning chemical and handling devices is extremely important in getting maximum efficiency from your unit.
9. When the cleaning solution has become heavily contaminated, it will lose its efficiency and fresh solution should be added. The amount of solution will vary according to the type of chemical used, the amount of soil removed and frequency of use.
10. When it is necessary to use several solutions or a chemical not compatible with type 302 stainless steel to properly clean and rinse the soiled parts, the following simple procedure will permit your ultrasonic to be used efficiently: (a) fill tank to about 2" level with water and one ounce SONICOR #101; (b) Using glass, stainless steel, linear polyethylene beakers or tanks filled with the desired solutions, position them in the tank in contrast to the liquid so that there are no air bubbles under them. The ultrasonic energy will pass through the walls of these "inner tanks" and clean efficiently.

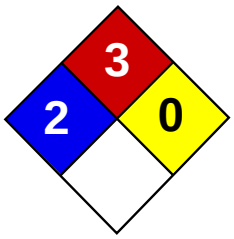
GENERAL PRECAUTIONS

1. Never immerse your cleaner in water. When you are finished using the tank, rinse it thoroughly and wipe dry.
2. **NEVER OPERATE THE TANK WITHOUT AT LEAST TWO INCHES OF WATER IN IT.**
3. Do not overload the tank or place heavy objects on the tank bottom as this will decrease cleaning efficiency.
4. Never use volatile, toxic or inflammable solvents, as the use of ultrasonics tends to increase the evaporation rate and cause additional hazards.
5. When cleaning a new part, it is best to experiment on a sample before proceeding with a batch load.
6. Always rinse the parts after proper cleaning procedure.
7. Metal objects should always be lubricated after cleaning to prevent oxidation.
8. To avoid discomfort, do not place your fingers in the tank while it is in operation.
9. **NEVER USE ANY CHEMICAL SOULTION THAT WILL ATTACK STAINLESS STEEL ACCESSORIES.** A complete line of accessories is available for the Sonicor "SC" series. Please refer to your data sheets for more information.

CLEANING CHEMICALS: A complete line of cleaning chemicals is available from Sonicor and your distributor.

GUARANTEE INSTRUCTION: Your system has passed rigid factory inspection at each stage of assembly and has been life-tested under actual conditions prior to shipment. Defects in material and workmanship will be corrected without charge for parts and labor for one year after purchase. Cavitation erosion is a normal occurrence and develops with use of equipment and, therefore, not included as a part of the guarantee. A defective unit must be returned PREPAID to the factory. Collect shipments to the factory will not be accepted unless previously authorized. Service or parts supplied by unauthorized sources will nullify the guarantee. During the guarantee period, there will be a handling charge for repairs described above. The charge is $25.00 for S-30, S-50, S-100 and S-101 units. The handling charge for S-150, S-200 and S-211 is $35.00. For S-300 and S-400, S-401, S-550, S-650 $45.00. For all MSC-units, $50.00. Repairs necessitated for reasons beyond normal usage of the equipment will be billed at prevailing rates.

SONICOR INCORPORATED
82 Otis Street
West Babylon, NY 11704
Phone: (631 920-6555 Fax: (631) 920-6080
http//:www.sonicor.com E-mail: customerservice@sonicor.com



Health	2
Fire	3
Reactivity	0
Personal Protection	H

Material Safety Data Sheet
Ethyl Alcohol 190 Proof MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ethyl Alcohol 190 Proof

Catalog Codes: SLE1036, SLE1609, SLE1288

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Water; Ethyl alcohol 200 Proof

CI#: Not applicable.

Synonym: Ethyl Alcohol 190 Proof

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Water	7732-18-5	5
Ethyl alcohol 200 Proof	64-17-5	95

Toxicological Data on Ingredients: Ethyl alcohol 200 Proof: ORAL (LD50): Acute: 7060 mg/kg [Rat]. 3450 mg/kg [Mouse]. VAPOR (LC50): Acute: 20000 ppm 8 hours [Rat]. 39000 mg/m 4 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), . Slightly hazardous in case of skin contact (permeator), of ingestion. Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (sensitizer) CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65 [Ethyl alcohol 200 Proof]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol 200 Proof]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Ethyl alcohol 200 Proof]. Mutagenic for bacteria and/or yeast. [Ethyl alcohol 200 Proof]. TERATOGENIC EFFECTS: Classified PROVEN for human [Ethyl alcohol 200 Proof]. DEVELOPMENTAL TOXICITY: Classified Development toxin [PROVEN] [Ethyl alcohol 200 Proof]. Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof]. The substance is toxic to blood, the reproductive system, liver, upper respiratory tract, skin, central nervous

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: The lowest known value is 363°C (685.4°F) (Ethyl alcohol 200 Proof).

Flash Points: CLOSED CUP: 18.5°C (65.3°F).(estimated)

Flammable Limits: The greatest known range is LOWER: 3.3% UPPER: 19% (Ethyl alcohol 200 Proof)

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Highly flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of metals, of acids, of alkalis.

Explosion Hazards in Presence of Various Substances:
Slightly explosive in presence of open flames and sparks, of heat, of oxidizing materials, of acids. Non-explosive in presence of shocks.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:
Containers should be grounded. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME Vapor may travel considerable distance to source of ignition and flash back. May form explosive mixtures with air. Contact with Bromine pentafluoride is likely to cause fire or explosion. Ethanol ignites on contact with chromyl chloride. Ethanol ignites on contact with iodine heptafluoride gas. It ignites than explodes upon contact with nitrosyl perchlorate. Additon of platinum black catalyst caused ignition. (Ethyl alcohol 200 Proof)

Special Remarks on Explosion Hazards:
Ethanol has an explosive reaction with the oxidized coating around potassium metal. Ethanol ignites and then explodes on contact with acetic anhydride + sodium hydrosulfate (ignites and may explode), disulfuric acid + nitric acid, phosphorous(III)

oxide platinum, potassium-tert-butoxide+ acids. Ethanol forms explosive products in reaction with the following compound : ammonia + silver nitrate (forms silver nitride and silver fulminate), iodine + phosphorus (forms ethane iodide), magnesium perchlorate (forms ethyl perchlorate), mercuric nitrate, nitric acid + silver (forms silver fulminate) silver nitrate (forms ethyl nitrate) silver(I) oxide + ammonia or hydrazine (forms silver nitride and silver fulminate), sodium (evolves hydrogen gas). Sodium Hydrazide + alcohol can produce an explosion. Alcohols should not be mixed with mercuric nitrate, as explosive mercuric fulminate may be formed. May form explosive mixture with manganese perchlorate + 2,2-dimethoxypropane. Addition of alcohols to highly concentrate hydrogen peroxide forms powerful explosives. Explodes on contact with calcium hypochlorite Vapor may explode if ignited in an enclosed area. Containers may explode when heated or involved in a fire. (Ethyl alcohol 200 Proof)

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.

Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Do not store above 23°C (73.4°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
Ethyl alcohol 200 Proof TWA: 1900 (mg/m3) from OSHA (PEL) [United States] TWA: 1000 (ppm) from OSHA (PEL) [United States] TWA: 1900 (mg/m3) from NIOSH [United States] TWA: 1000 (ppm) from NIOSH [United States] TWA: 1000 (ppm) [United Kingdom (UK)] TWA: 1920 (mg/m3) [United Kingdom (UK)] TWA: 1000 STEL: 1250 (ppm) [Canada] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor:
Alcohol like. Mild to strong. Like wine or whiskey; Ethereal, vinous. Pleasant.

Taste: Burning. Pungent.

Molecular Weight: Not applicable.

Color: Clear Colorless.

pH (1% soln/water): Neutral.

Boiling Point: The lowest known value is 78.5°C (173.3°F) (Ethyl alcohol 200 Proof). Weighted average: 79.58°C (175.2°F)

Melting Point: May start to solidify at -114.1°C (-173.4°F) based on data for: Ethyl alcohol 200 Proof.

Critical Temperature: The lowest known value is 243°C (469.4°F) (Ethyl alcohol 200 Proof).

Specific Gravity: Weighted average: 0.8 (Water = 1)

Vapor Pressure: The highest known value is 5.7 kPa (@ 20°C) (Ethyl alcohol 200 Proof). Weighted average: 5.53 kPa (@ 20°C)

Vapor Density: The highest known value is 1.59 (Air = 1) (Ethyl alcohol 200 Proof). Weighted average: 1.54 (Air = 1)

Volatility: Not available.

Odor Threshold: 100 ppm

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether, acetone.

Solubility:
Easily soluble in cold water, hot water, methanol, diethyl ether. Soluble in acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, heat, sources of ignition.

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Ethanol rapidly absorbs moisture from the air. Can react vigorously with oxiders. The following oxidants have been demonstrated to undergo vigorous/explosive reaction with ethanol: barium perchlorate, bromine pentafluoride, calcium hypochlorite, chloryl perchlorate, chromium trioxide, chromyl chloride, dioxygen difluoride, disulfuryl difluoride, fluorine nitrate, hydrogen peroxide, iodine heptafluoride, nitric acid nitrosyl perchlorate, perchloric acid permanganic acid, peroxodisulfuric acid, potassium dioxide, potassium perchlorate, potassium permanganate, ruthenium(VIII) oxide, silver perchlorate, silver peroxide, uranium hexafluoride, uranyl perchlorate. Ethanol reacts violently/expodes with the following compounds: acetyl bromide (evolves hydrogen bromide) acetyl chloride, aluminum, sesquibromide ethylate, ammonium hydroxide & silver oxide, chlorate, chromic anhydride, cyanuric acid + water, dichloromethane + sulfuric acid + nitrate (or) nitrite, hydrogen peroxide + sulfuric acid, iodine + methanol + mercuric oxide, manganese perchlorate + 2,2-dimethoxy propane, perchlorates, permanganates + sulfuric acid, potassium superoxide, potassium tert-butoxide, silver & nitric acid, silver perchlorate, sodium hydrazide, sulfuric acid + sodium dichromate, tetrachlorisilane + water. Ethanol is also incompatible with platinium, and sodium. No really safe conditions exist under which ethyl alcohol and chlorine oxides can be handled. Reacts vigorously with acetyl chloride (Ethyl alcohol 200 Proof)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 3632 mg/kg (Mouse) (Calculated value for the mixture).

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65 [Ethyl alcohol 200 Proof]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol 200 Proof]. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Ethyl alcohol 200 Proof]. Mutagenic for bacteria and/or yeast. [Ethyl alcohol 200 Proof]. TERATOGENIC EFFECTS: Classified PROVEN for human [Ethyl alcohol 200 Proof]. DEVELOPMENTAL TOXICITY: Classified Development toxin [PROVEN] [Ethyl alcohol 200 Proof]. Classified Reproductive system/toxin/female, Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof].

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator), of ingestion.

Special Remarks on Toxicity to Animals:
Lowest Published Dose/Conc: LDL[Human] - Route: Oral; Dose: 1400 mg/kg LDL[Human child] - Route: Oral; Dose: 2000 mg/kg LDL[Rabbit] - Route: Skin; Dose: 20000 mg/kg (Ethyl alcohol 200 Proof)

Special Remarks on Chronic Effects on Humans:
May affect genetic material (mutagenic) Causes adverse reproductive effects and birth defects (teratogenic) , based on moderate to heavy consumption. May cause cancer based on animal data. Human: passes through the placenta, excreted in maternal milk. (Ethyl alcohol 200 Proof)

Special Remarks on other Toxic Effects on Humans:
Acute potential health effects: Skin: causes skin irritation Eyes: causes eye irritation Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea, and alterations in gastric secretions. May affect behavior/central nervous system (central nervous system depression - amnesia, headache, muscular incoordination, excitation, mild euphoria, slurred speech, drowsiness, staggaring gait, fatigue, changes in mood/personality, excessive talking, dizziness, ataxia, somnolence, coma/narcosis, hallucinations, distorted perceptions, general anesthetic), peripherial nervous system (spastic paralysis)vision (diplopia). Moderately toxic and narcotic in high concentrations. May also affect metabolism, blood, liver, respiration (dyspnea), and endocrine system. May affect respiratory tract, cardiovascular(cardiac arrhythmias, hypotension), and urinary systems. Inhalation: May cause irritation of the respiratory tract and affect behavior/central nervous system with symptoms similar to ingestion. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may casue dermatitis, an allergic reaction. Ingestion: Prolonged or repeated ingestion will have similiar effects as acute ingestion. It may also affect the brain. (Ethyl alcohol 200 Proof)

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Ethanol (Ethyl alcohol 200 Proof) UNNA: 1170 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Ethyl alcohol 200 Proof (in alcoholic beverage) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Ethyl alcohol 200 Proof (in alcoholic beverage) Connecticut hazardous material survey.: Ethyl alcohol 200 Proof Illinois toxic substances disclosure to employee act: Ethyl alcohol 200 Proof Rhode Island RTK hazardous substances: Ethyl alcohol 200 Proof Pennsylvania RTK: Ethyl alcohol 200 Proof Florida: Ethyl alcohol 200 Proof Minnesota: Ethyl alcohol 200 Proof Massachusetts RTK: Ethyl alcohol 200 Proof Massachusetts spill list: Ethyl alcohol 200 Proof New Jersey: Ethyl alcohol 200 Proof TSCA 8(b) inventory: Water; Ethyl alcohol 200 Proof

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. S7- Keep container tightly closed. S16- Keep away from sources of ignition - No smoking.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:28 PM

Last Updated: 05/21/2013 12:00 PM

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.

ALCONOX

Critical-cleaning detergents for laboratory, healthcare and industrial applications

30 Glenn Street
White Plains NY 10603 USA
Tel.914.948.4040
Fax.914.948.4088

24 Hour Emergency Number (CHEM-TEL) (800) 255-3924 in U.S.

(e-mail) cleaning@alconox.com

(URL) http://www.alconox.com
- **distributors**
- **technical information**
- **free samples**
- **new developments**

Alconox®

Powdered Precision Cleaner

- Concentrated to save you money
- Biodegradable and readily disposable
- Penetrating wetting power to save you time
- Replaces corrosive acids and hazardous solvents
- Free rinsing to give you reliable results and no interfering residues
- Use to pass your cleaning validation tests for lab accreditation and plant inspection approval

Used to clean: Healthcare instruments, laboratory ware, vacuum equipment, tissue culture ware, personal protective equipment, sampling apparatus, catheters, tubing, pipes, radioactive contaminated articles, optical parts, electronic components, pharmaceutical apparatus, cosmetics manufacturing equipment, metal castings, forgings and stampings, industrial parts, tanks and reactors. Authorized by USDA for use in federally inspected meat and poultry plants. Passes inhibitory residue test for water analysis. FDA certified.

Used to remove: Soil, grit, grime, buffing compound, slime, grease, oils, blood, tissue, salts, deposits, particulates, solvents, chemicals, radioisotopes, radioactive contaminations, silicon oils, mold release agents.

Surfaces cleaned: Corrosion inhibited formulation recommended for glass, metal, stainless steel, porcelain, ceramic, plastic, rubber and fiberglass. Can be used on soft metals such as copper, aluminum, zinc and magnesium if rinsed promptly. Corrosion testing may be advisable.

Cleaning method: Soak, brush, sponge, cloth, ultrasonic, flow through clean-in-place. Will foam—not for spray or machine use.

Directions: Make a fresh 1% solution (2 1/2 Tbsp. per gal., 1 1/4 oz. per gal. or 10 grams per liter) in cold, warm, or hot water. If available use warm water. Use cold water for blood stains. For difficult soils, raise water temperature and use more detergent. Clean by soak, circulate, wipe, or ultrasonic method. Not for spray machines, will foam. For nonabrasive scouring, make paste. Use 2% solution to soak frozen stopcocks. To remove silver tarnish, soak in 1% solution in aluminum container. RINSE THOROUGHLY—preferably with running water. For critical cleaning, do final or all rinsing in distilled, deionized, or purified water. For food contact surfaces, rinse with potable water. Used on a wide range of glass, ceramic, plastic, and metal surfaces. Corrosion testing may be advisable.

Convenient Sizes:	Alconox Cat. #
Case 9 x 4 lb. Boxes	1104
25 lb. Carton	1125
50 lb. Carton	1150
100 lb. Drum	1101
300 lb. Drum	1103
Case 12 Box 50 x 1/2 oz.	1112
1 lb. makes 13 gal. cleaning solution	

Alconox is available from leading laboratory, hospital, clinical and industrial suppliers. To find a distributor for Alconox, Inc. detergents, visit “Find Dealer” at the website. To request FREE samples visit our Sample Request at www.alcnox.com, write or call Alconox, Inc. today.

MS 02.10.01.00.06.1

ALCONOX

Critical-cleaning detergents for laboratory, healthcare and industrial applications

30 Glenn Street
White Plains NY 10603 USA
Tel.914.948.4040
Fax.914.948.4088

24 Hour Emergency Number (CHEM-TEL) (800) 255-3924 in U.S.

(e-mail) cleaning@alconox.com

(URL) http://www.alconox.com
- **distributors**
- **technical information**
- **free samples**
- **new developments**

PHYSICAL DATA	TYPICAL VALUE
pH of 1% solution	9.5
Flash Point (degrees F)	None
Phosphate Content (as Phosphorus)	7.3%
Organic Carbon (% calculated w/w)	11%
Fragrance Content	0%
Surface Tension 1% Sol'n (Dyne/cm)	32
Percent active ingredients	100%

Color: White and cream colored flakes
Form: Powder
Solubility in Water: To 10% (w/w) at ambient temperature
Hard Water Effectiveness: Highly Effective
Biodegradability: Biodegradable
Foam Tendency: High Foaming
Shelf Life: Two years from the date of manufacture

Chemical Description

Alconox consists primarily of a homogeneous blend of sodium linear alkylaryl sulfonate, alcohol sulfate, phosphates, carbonates. Alconox is anionic in nature.

Cleaning Validation Methods:

Test a parameter of rinse water before and after rinsing the cleaned surface. No significant change in the parameter indicates no detectable residue. Parameters measured include: pH, conductivity, UV, TOC, HPLC, sodium concentration, phosphorus concentration, anionic surfactant concentration using inexpensive detergent water testing kits, surface tension, and surface analysis. Pharmaceutical Cleaning Validation references are available in the tech info section of www.alconox.com.

Health Safety Information:

OSHA Hazardous Ingredients: None
RCRA Hazard Class: Non-hazardous
Flammability: Non-flammable
Latex Content: None in detergent, packaging materials or adhesives.
Oral Toxicity: LD_{50} > 5000 mg/kg oral rat
No ingredient defined as an oral toxicant by OSHA
Eye Irritation: Mild to Moderate eye irritant if not rinsed
Inhalation Toxicity: Non-irritating solution, powder a potential irritant
VOC Content: 0%
Carcinogenicity:
NTP = No **IARC** = No **OSHA** = No
All ingredients in Alconox are listed in TSCA inventory.USDA NSF cat A1

Precautions:

No special precautions other than good industrial hygiene and safety practices employed with any industrial chemical (see Directions). A Material Safety Data Sheet is available at www.alconox.com or by calling fax-on-demand at 914-948-4040 and following the prompts. Use fax document # 0311.

Contact Alconox, Inc. for purchase specifications. Typical data is not a specification.

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

1 Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: ALCONOX**
· **Application of the substance / the preparation** Cleaning material/ Detergent

· **1.3 Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
Alconox, Inc.
30 Glenn St., Suite 309
White Plains, NY 10603
Phone: 914-948-4040

· **Further information obtainable from:** Product Safety Department
· **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585

2 Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**


GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.


GHS07

Skin Irrit. 2 H315 Causes skin irritation.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R38-41: Irritating to skin. Risk of serious damage to eyes.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
· **Hazard pictograms**


GHS05

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Benzenesulfonic Acid, Sodium Salts

(Contd. on page 2)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 1)

· **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
· **Precautionary statements**

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P264	Wash thoroughly after handling.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P321	Specific treatment (see on this label).
P362	Take off contaminated clothing and wash before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.

· **Hazard description:**
· **WHMIS-symbols:**
D2B - Toxic material causing other toxic effects

· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 1
Fire = 0
Reactivity = 0

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
CAS: 68081-81-2	Benzenesulfonic Acid, Sodium Salts Xi R38-41 Eye Dam. 1, H318 Skin Irrit. 2, H315	10-25%
CAS: 497-19-8 EINECS: 207-838-8 Index number: 011-005-00-2	sodium carbonate Xi R36 Eye Irrit. 2, H319	2,5-10%

(Contd. on page 3)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 2)

CAS: 7722-88-5 EINECS: 231-767-1	tetrasodium pyrophosphate substance with a Community workplace exposure limit	2,5-10%
CAS: 151-21-3 EINECS: 205-788-1	sodium dodecyl sulphate Xn R21/22; Xi R36/38 Acute Tox. 4, H302; Acute Tox. 4, H312; Skin Irrit. 2, H315; Eye Irrit. 2, H319	2,5-10%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **4.1 Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Do not induce vomiting; call for medical help immediately.
Rinse out mouth and then drink plenty of water.
· **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2 Special hazards arising from the substance or mixture**
No further relevant information available.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Product forms slippery surface when combined with water.
· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Pick up mechanically.
Clean the affected area carefully; suitable cleaners are:
Warm water
· **6.4 Reference to other sections**
See Section 7 for information on safe handling.

(Contd. on page 4)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 3)

See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **7.1 Precautions for safe handling**
Prevent formation of dust.
Keep receptacles tightly sealed.
· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Protect from humidity and water.
· **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
7722-88-5 tetrasodium pyrophosphate	
REL (USA)	5 mg/m³
TLV (USA)	TLV withdrawn
EV (Canada)	5 mg/m³

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
· **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

(Contd. on page 5)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 4)

· **Material of gloves**
Butyl rubber, BR
Nitrile rubber, NBR
Natural rubber, NR
Neoprene gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Safety glasses

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Powder
Colour:	White
· **Odour:**	Odourless
· **Odour threshold:**	Not determined.
· **pH-value (10 g/l) at 20°C:**	9,5 (- NA for Powder form)
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not determined.
· **Ignition temperature:**	
Decomposition temperature:	Not determined.
· **Self-igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapour pressure:**	Not applicable.
· **Density at 20°C:**	1,1 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.

(Contd. on page 6)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 5)

· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with water:**	Soluble.
· **Segregation coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **Solvent content:**	
Organic solvents:	0,0 %
Solids content:	100 %
· **9.2 Other information**	No further relevant information available.

10 Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions**
Reacts with acids.
Reacts with strong alkali.
Reacts with strong oxidizing agents.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Phosphorus compounds
Sulphur oxides (SOx)

11 Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 7)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 6)

12 Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** Not worth-mentioning accumulating in organisms
· **12.4 Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Smaller quantities can be disposed of with household waste.
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.
The surfactant used in this product complies with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

· **Uncleaned packaging:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

· **14.1 UN-Number**	
· **DOT, ADR, ADN, IMDG, IATA**	N/A
· **14.2 UN proper shipping name**	
· **DOT, ADR, ADN, IMDG, IATA**	N/A
· **14.3 Transport hazard class(es)**	
· **DOT, ADR, ADN, IMDG, IATA**	
· **Class**	N/A
· **14.4 Packing group**	
· **DOT, ADR, IMDG, IATA**	N/A
· **14.5 Environmental hazards:**	
· **Marine pollutant:**	No

(Contd. on page 8)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 7)

· **14.6 Special precautions for user**	Not applicable.
· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	N/A

15 Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.
· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.
· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.
· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.
· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.
· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.
· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.
· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Canada**

· **Canadian Domestic Substances List (DSL)**
All ingredients are listed.
· **Canadian Ingredient Disclosure list (limit 0.1%)**
None of the ingredients is listed.

(Contd. on page 9)

Safety Data Sheet
according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and GHS

Printing date 25.05.2012 Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 8)

· **Canadian Ingredient Disclosure list (limit 1%)**	
497-19-8	sodium carbonate
7722-88-5	tetrasodium pyrophosphate
151-21-3	sodium dodecyl sulphate

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.

R21/22 Harmful in contact with skin and if swallowed.
R36 Irritating to eyes.
R36/38 Irritating to eyes and skin.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)