








MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL AND COMPANY IDENTIFICATION

IDENTITY FluoroEtch® Safety Solvent	DATE PREPARED May 4, 2011
SYNONYMS, CHEMICAL NAMES, COMMON NAMES Sodium Naphthalene Complex in Glycol Ether	USE Fluoropolymer Etchant
SUPPLIER'S NAME Acton Technologies	EMERGENCY TELEPHONE NUMBER CHEMTREC: 800-424-9300
 ACTON TECHNOLOGIES	
NORTH AMERICAN OPERATIONS 100 THOMPSON STREET ■ P.O. BOX 726 PITTSBURGH, PENNSYLVANIA ■ 15201 ■ USA INQUIRIES, ORDERS AND TECHNICAL ASSISTANCE: PHONE: 724.654.0612 FAX: 724.654.2810	EUROPEAN OPERATIONS ADARE ■ COUNTY LIMERICK IRELAND PHONE: +353.61.395.222 FAX: +353.61.395.333
     	
ONLINE ORDERING: WWW.ACTONTECH.COM AN ISO 9001 CERTIFIED COMPANY AN ISO 14001 CERTIFIED COMPANY	

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	OSHA PEL	ACGIH TLV	%
2-Methoxyethyl ether (CAS# 111-96-6)	None established	None established	>80%
Sodium Naphthalene Complex (CAS# 7440-23-5) (CAS# 91-20-3)	None established 10 ppm TWA	None established 10 ppm TWA 15 ppm STEL	<20%

R 19, R 22, R 36/37/38, R 60, R 61, N, R 51/53, S 7, S 16, S 26, S 36/37/38, S 45, S 53

Remaining components, if any, are not hazardous or hazardous components are present at less than 1% (0.1% for carcinogens).

EMERGENCY OVERVIEW

Combustible liquid and vapor. May form explosive peroxides. May be irritating to skin, eyes, respiratory, and/or digestive tract.
May cause skin sensitization. Reproductive hazard.

SECTION 3 - HAZARDOUS IDENTIFICATION

PRIMARY ROUTE(S) OF EXPOSURE: Inhalation; skin; eyes; ingestion	
IRRITATION DATA: Open irritation test: Dermal (Rabbit): mild reaction @495 mg Standard Draize test: Eye (Rabbit): mild @100 mg	Naphthalene Naphthalene

INHALATION

ACUTE:	Breathing of mists, vapors, or fumes may irritate the nose, throat, and lungs. Symptoms may include drowsiness, dizziness, headache, incoordination, difficulty breathing, blurred vision, fatigue, stomach pain, nausea, or vomiting, tremors, convulsions, loss of consciousness, cyanosis, central nervous system depression, coma, respiratory arrest and death, depending on the concentration and duration of exposure.
CHRONIC:	Male reproductive effects. The glycol ether solvent may be a reproductive risk for women of child bearing potential. Overexposure may lead to altered kidney function and blood abnormalities.

SKIN CONTACT

ACUTE:	Skin contact may cause mild alkali burns. Can cause skin photosensitization. Harmful if absorbed through the skin.
CHRONIC:	May cause allergic reactions to certain individuals. Prolonged exposure can cause dermatitis.

EYE CONTACT

ACUTE:	May cause irritation, pain, conjunctivitis, and possible corneal damage.
CHRONIC:	May cause conjunctivitis. Overexposure may lead to development of lenticular (eye) opacity and possible cataract formation.

INGESTION

ACUTE:	May cause irritation of the mouth, throat, and gastrointestinal tract. May cause central nervous system depression or effects. May cause headache, pain, visual disturbance, salivation, dizziness, diarrhea, and nausea.
CHRONIC:	Toxic to kidneys. Overexposure may cause blood abnormalities such as hypochromia, anemia, and polynucleosis.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Persons with pre-existing skin, eye or respiratory tract conditions may be at increased risk from exposure.

SECTION 4 - EMERGENCY AND FIRST AID PROCEDURES

INHALATION:	Remove from exposure to fresh air immediately. If breathing has stopped, give artificial respiration. Oxygen may be given if breathing is difficult. Get medical attention immediately.
SKIN CONTACT:	Remove contaminated clothing and shoes immediately. Wash affected area with soap and water until no evidence of the chemical remains. Get medical attention if irritation develops.
EYE CONTACT:	Flush thoroughly with water for at least 15 minutes, occasionally lifting the upper and lower lids, until no evidence of the chemical remains. Get immediate medical attention.
INGESTION:	Get immediate medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT	FLAMMABLE LIMITS:	LEL: 1.5
158° F (Cleveland Open Cup)	(Glycol ether solvent)	UEL: 17.4
AUTOIGNITION TEMPERATURE:	370° F	
SENSITIVITY TO MECHANICAL IMPACT:	Not available	
SENSITIVITY TO STATIC DISCHARGE:	Not available	
EXTINGUISHING MEDIA:	Dry Chemical, Alcohol Foam, Water Spray, CO2	
FIRE AND EXPLOSION HAZARDS:	Combustible liquid. May be ignited by heat, sparks, or flames. Vapors may travel to a source of ignition and flash back. Container may explode in heat of fire.	

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters should wear NIOSH approved positive pressure self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Water will deactivate the sodium in FluoroEtch® and form a caustic solution. Solution is non-pyrophoric.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled:

Isolate from all ignition sources. Keep ignition sources out of the area.
 Flood with water.
 Neutralize with acetic or hydrochloric acid.
 Absorb the solution in sand, inert absorbent, or caustic spill kit.

SECTION 7 - HANDLING AND STORAGE

FOR INDUSTRIAL USE ONLY

HANDLING

Wear protective equipment when opening container or using liquid.
 Follow procedure for flammable and caustic materials.
 Open cautiously to gently release any build up of pressure.
 Sources of static discharge must be grounded.
 Warm to room temperature prior to use.
 Do not return used portions to original container.
 Use with adequate ventilation.

STORAGE

Store in a cool place, away from heat, sources of ignition, and incompatibles.
 Keep container tightly closed when not in use.
 Avoid long exposure to the atmosphere.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

RESPIRATORY PROTECTION

Where airborne concentrations may exceed guidelines for permissible air concentrations, choose a respirator in accordance with OSHA Respirator Standard 29 CFR 1910.134.

VENTILATION

Local exhaust recommended. Use protection in the absence of adequate ventilation.

PROTECTIVE GLOVES

Use impervious butyl or neoprene rubber or polyethylene gloves chosen in accordance with OSHA Personal Protective Equipment Standard 29 CFR 1910.132.

EYE PROTECTION

Use safety glasses with side shields, chemical goggles, or face shield chosen in accordance with OSHA 29 CFR 1910.133.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

Appropriate protective clothing to minimize skin contact with this material. If conditions warrant, use butyl rubber apron and boots. Emergency eye wash fountain and shower should be available

RECOMMENDED EXPOSURE LIMITS

The manufacturer suggest the following occupational exposure limits for the glycol ether:
 5 ppm TWA: occupational exposure limit
 25 ppm: short term exposure limit
 For women of child bearing potential, the manufacturer recommends an occupational exposure limit of 1 ppm (8hour TWA) and a STEL of 5 ppm.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES			
BOILING POINT	162 °C, glycol ether	SPECIFIC GRAVITY	1.04
PH	Alkaline	MELTING POINT	-64° deg C
VAPOR PRESSURE (mm Hg)	1.7 @ 20 °C	VISCOSITY	Not applicable
VAPOR DENSITY (Air = 1)	4.6	EVAPORATION RATE (Butyl acetate = 1)	0.36
SOLUBILITY IN WATER		~90%	
COEFFICIENT OF WATER/OIL DISTRIBUTION:		Not available.	
ODOR THRESHOLD:		>0.3ppm (naphthalene)	
APPEARANCE AND ODOR:		Green black liquid with odor of naphthalene and ether.	

SECTION 10 - STABILITY AND REACTIVITY			
STABILITY	Unstable		Conditions to Avoid:
	Stable	X	If exposed to air, organic peroxides may develop.
INCOMPATIBILITY (Materials to Avoid) Water, oxidizing materials.			
HAZARDOUS DECOMPOSITION PRODUCTS Reacts with water to form caustic soda, naphthalene, glycol ether, and peroxides. Heating to decomposition can emit acrid smoke and fumes.			
HAZARDOUS	May Occur		Conditions to Avoid
POLYMERIZATION	Will Not Occur	X	None known.

SECTION 11 - TOXICOLOGICAL INFORMATION	
Oral LD ₅₀ (rat): 5400 mg/kg	2-Methoxyethyl ether
Ipr LD ₅₀ (mouse): 4 gm/kg	Sodium
Oral LD ₅₀ (rat): 490 mg/kg	Naphthalene
Inh LC ₅₀ (rat): >340 mg/m ³ /1H	Naphthalene
Dermal LD ₅₀ (rat): >2500 mg/kg	Naphthalene
Reproductive data: RTECS	2-Methoxyethyl ether; Naphthalene
Mutagen data: RTECS	2 Methoxyethyl ether; Naphthalene
Tumorigenic data: RTECS	Naphthalene
<p>Teratogenic effects have been demonstrated to occur causing birth defects and reversible testicular and sperm damage in some glycol ethers. A study with laboratory animals indicates that chronic alcohol (ethanol) ingestion may increase the potential for teratogenic or other toxic effects from exposure to glycol ethers and diethers. There may be a particular risk for women of child bearing potential regarding this compound. Exposure to vapors or mists should be avoided, especially for women of child bearing potential.</p>	
Skin Sensitization:	Naphthalene: positive
Toxicologically synergistic materials:	Chronic alcohol (ethanol) ingestion may increase the potential for teratogenic or other toxic effects from exposure to glycol ethers and diethers.
Carcinogenicity:	Not listed by IARC, NTP, or ACGIH
Target Organs:	Skin, eyes, digestive tract, kidney, blood, CNS, and reproductive system.

SECTION 12 – ECOLOGICAL INFORMATION

This product has not been tested for ecological impact information.

The components of this material may be considered a water pollutant and releases of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. If product is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released product. Notify local authorities and the National Response Center, if required.

This product is not biodegradable or biodegrades very slowly in the environment.

2-Methoxyethyl ether has a fish and bacterial toxicity (LCO) of >1000 mg/L.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dilute with water, neutralize with acid, filter solids.

Dispose of solids and neutralized liquid in accordance with all applicable federal, state, and local environmental regulations.

SECTION 14 – TRANSPORT INFORMATION

Dot: Not regulated
 Shipping name: Not applicable
 Hazard Class: Not applicable
 Packing group: Not applicable

SECTION 15 – REGULATORY INFORMATION

OSHA: This material is classified as hazardous under OSHA regulations.
 TSCA: All components are listed.
 EINECS: All components are listed.
 DSL: All components are listed.
 WHMIS: This material is a B3, D2A, D2B Controlled Product. This material has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

EU:

R 19	May form explosive peroxides	S7	Keep container tightly closed
R 22	Harmful if swallowed	S 16	Keep away from sources of ignition
R 36/37/38	Irritating to eyes, respiratory system, and skin	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical attention
R 60	May impair fertility	S36/37/38	Wear suitable protective clothing, gloves, and eye/face protection
R 61	May cause harm to the unborn child	S53	Avoid exposure-obtain special instructions before use.
N, R51/53	Toxic to aquatic animals; may cause long-term adverse effects in the aquatic environment		

SARA TITLE III - TOXIC CHEMICALS LIST 40 CFR 372.65:

2-Methoxyethyl ether	CAS# 111-96-6	>80%
Naphthalene	CAS# 91-20-3	<20%

SARA HAZARD CATEGORIES:

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure	No
Reactivity	No

CERCLA HAZARDOUS SUBSTANCES 40 CFR 302:

Naphthalene	91-20-3	RQ: 100 pounds
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RCRA HAZARDOUS WASTE CODES 40 CFR 261.21, 261.23:

As purchased, this material is not a RCRA hazardous waste.

CALIFORNIA PROPOSITION 65:

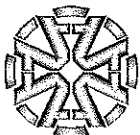
This product contains the following chemicals known to the State of California to cause cancer or reproductive harm:	None
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SECTION 16 - OTHER INFORMATION

HMIS Rating		NFPA Rating	
Health	2	Health	2
Flammability	2	Flammability	2
Reactivity	1	Reactivity	1

Where 0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe

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