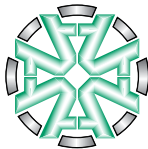



SECTION 1 – CHEMICAL AND COMPANY IDENTIFICATION

IDENTITY FluoroEtch [®] Safety Solvent		DATE PREPARED 6/1/2015	
SYNONYMS, CHEMICAL NAMES, COMMON NAMES Sodium Naphthalide in Glycol Ether		USE Fluoropolymer Etchant	
SUPPLIER'S NAME Acton Technologies		EMERGENCY TELEPHONE NUMBER CHEMTREC: 1-800-424-9300 (Within Continental U.S.) CHEMTREC: 1-703-527-3887 (Outside U.S.)	
 ACTON TECHNOLOGIES		 DEKRA ISO 9001:2008 <small>Certification #110102.01</small> ISO 14001:2004 <small>Certification #140102.01</small>	
		AN ISO 9001 CERTIFIED COMPANY AN ISO 14001 CERTIFIED COMPANY	
NORTH AMERICAN OPERATIONS		EUROPEAN OPERATIONS	
100 THOMPSON STREET ■ P.O. BOX 726 PITTSTON, PENNSYLVANIA ■ 18640 ■ USA PHONE: 570.654.0612 FAX: 570.654.2810		ADARE ■ COUNTY LIMERICK IRELAND PHONE: + 353.61.395.222 FAX: + 353.61.395.333	VIA CARLO CATTANEO n° 76 ■ 25121 BRESCIA ■ ITALY PHONE: + 39.030.2752447 FAX: + 39.030.2750939
		ONLINE ORDERING: WWW.ACTONTECH.COM	

SECTION 2 – HAZARDS IDENTIFICATION

CLASSIFICATION:	OSHA: This material is classified as hazardous under OSHA regulations (29CFR 1910.1200). Hazardous classification: Acute Health Hazard Chronic Health Hazard Combustible liquid WHMIS classification: Class B3 (Combustible Liquids) Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material) Class D2B (Materials Causing Other Toxic Effects, Toxic Material)
EMERGENCY OVERVIEW:	Green black liquid. Naphthalene/ether odor. Warning! Combustible liquid and vapor. May be harmful if inhaled. May cause respiratory irritation. May be harmful if swallowed. May cause headache, nausea, dizziness and other symptoms of central nervous system depression. Causes eye and skin irritation. Contains material which can cause damage to the blood system, the liver and the kidneys. Contains material that may cause adverse reproductive effects. Contains material which may be a teratogen. May cause sensitization by skin contact.

SECTION 2 – HAZARDS IDENTIFICATION (CONTINUED)

POTENTIAL HEALTH EFFECTS:	
SIGNS AND SYMPTOMS OF SHORT-TERM (ACUTE) EXPOSURE:	
INHALATION:	May be harmful if inhaled. May cause irritation to the nose, throat and upper respiratory tract. If higher concentrations are inhaled, additional symptoms may include coughing, shortness of breath, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Excessive overexposure could cause liver, kidney and blood system effects (anemia).
SKIN CONTACT:	May cause moderate to severe skin irritation. Harmful if absorbed through the skin.
EYE CONTACT:	May cause severe eye irritation. May cause corneal damage and conjunctivitis.
INGESTION:	Harmful if swallowed. May cause irritation of mouth, throat, and stomach. Ingestion of large amounts may cause nausea, vomiting, diarrhea, as well as depression of the central nervous system.
EFFECTS OF LONG-TERM (CHRONIC) EXPOSURE:	Prolonged or repeated contact may cause drying, cracking and defatting of the skin. Repeated overexposure may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.
CARCINOGENIC STATUS:	See TOXICOLOGICAL INFORMATION, Section 11.
ADDITIONAL HEALTH HAZARDS:	Potential teratogen. Potential reproductive toxicant. Possible sensitizer. See TOXICOLOGICAL INFORMATION, Section 11.
POTENTIAL ENVIRONMENTAL EFFECTS:	See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS #	WT. %
Sodium naphthalide	3481-12-7	10.00-30.00
2-Methoxyethyl ether	111-96-6	70.00-90.00

SECTION 4 – FIRST AID MEASURES

INHALATION:	Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.
SKIN CONTACT:	Remove contaminated clothing. Wash off immediately with soap and plenty of water. If irritation persists, seek prompt medical attention. Launder clothing before reuse.
EYE CONTACT:	Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
INGESTION:	Do NOT induce vomiting. Seek immediate medical attention/advice. Never give anything by mouth to an unconscious person.
NOTES FOR PHYSICIAN:	This product is a CNS depressant. Treat symptomatically.

SECTION 5 – FIRE FIGHTING MEASURES

FIRE HAZARDS/ CONDITIONS OF FLAMMABILITY:	Combustible liquid and vapor. This material may be ignited by heat, sparks and direct flame. Vapours may be heavier than air and may collect in confined and low lying areas. Closed containers may rupture if exposed to excess heat or flame due to a build up of internal pressure.
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SECTION 5 – FIRE FIGHTING MEASURES (CONTINUED)				
FLAMMABILITY CLASSIFICATION: (OSHA 29 CFR 1910.1200)	Combustible Liquid Class III A.			
OXIDIZING PROPERTIES:	None known.			
EXPLOSION DATA: SENSITIVITY TO MECHANICAL IMPACT/ STATIC DISCHARGE	May be sensitive to static discharge. Not expected to be sensitive to mechanical impact.			
SUITABLE EXTINGUISHING MEDIA:	Use water fog or fine spray, foams, carbon dioxide or dry chemical. Do not use a solid water stream as it may scatter and spread fire.			
SPECIAL FIRE FIGHTING PROCEDURES/EQUIPMENT:	Firefighters should wear proper protective equipment and self contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.			
HAZARDOUS COMBUSTION PRODUCTS:	Carbon oxides; Other unidentified organic compounds.			
NFPA RATING:	0 – Minimal	1 – Slight	2 – Moderate	3 – Serious
	Health: 2	Flammability: 2	Instability: 0	Special Hazards: None

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
PERSONAL PRECAUTIONS:	Restrict access to area until completion of clean up. Ensure clean up is conducted by trained personnel only. All persons dealing with clean up should wear the appropriate protective equipment including self contained breathing apparatus. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
ENVIRONMENTAL PRECAUTIONS:	Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply.
SPILL RESPONSE/CLEANUP:	Remove all sources of ignition. Ventilate area of release. Stop spill or leak at source if safely possible. Contain and absorb spilled liquid with non combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Use plastic or aluminum shovels to transfer absorbed waste material into drums. Use non sparking tools. Contaminated absorbent material may pose the same hazards as the spilled product. Notify the appropriate authorities as required.
PROHIBITED MATERIALS:	Use non flammable absorbent only. Do not use combustible absorbents, such as sawdust.
SPECIAL SPILL RESPONSE PROCEDURES:	In case of a transportation accident, contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1 800-424-8802). US CERCLA Reportable quantity (RQ): None.

SECTION 7 – HANDLING AND STORAGE	
SAFE HANDLING PROCEDURES:	Wear suitable protective equipment during handling. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment. Use with adequate ventilation. Avoid breathing vapour or mist. Avoid contact with eyes, skin and clothing. Wash with soap and water after handling. Keep away from extreme heat and flame. Keep away from acids and other incompatibles. Use caution when opening cap. Keep containers tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Keep out of the reach of children. Do not cut, weld, braze, solder, drill, or grind near containers. Do not dump unused contents into sewers, on the ground or into any body of water. Dispose of wastes in an approved waste disposal facility.
STORAGE REQUIREMENTS:	Store in a cool, dry, well ventilated area. Store away from areas of excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
INCOMPATIBLE MATERIALS:	Strong oxidizing agents; Acids; Bases; Water
SPECIAL PACKAGING MATERIALS:	Always keep in containers made of the same materials as the supply container.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION					
EXPOSURE LIMITS:	Ingredients	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
	Sodium naphthalide	N/Av	N/Av	N/Av	N/Av
2-Methoxyethyl ether	N/Av	N/Av	N/Av	N/Av	
VENTILATION AND ENGINEERING MEASURES:	Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits. Local exhaust ventilation is preferred to prevent contaminant dispersion into work area.				
RESPIRATORY PROTECTION:	Respiratory protection is required if the concentrations exceed the TLV. NIOSH approved respirators are recommended. Seek advice from respiratory protection specialists.				
SKIN PROTECTION:	Gloves impervious to the material are recommended. Advice should be sought from glove suppliers.				
EYE / FACE PROTECTION:	Chemical splash goggles are recommended. A full face shield may also be necessary.				
OTHER PROTECTIVE EQUIPMENT:	Emergency showers and eyewash facilities should be nearby. Wear long sleeved shirt and pants to minimize exposed skin. Wear sufficient clothing to prevent skin contact. Do not wear rings, watches or jewelry that could entrap the material against the skin. Other equipment may be required depending on workplace standards.				
GENERAL HYGIENE CONSIDERATIONS:	Avoid breathing vapour or mist. Avoid contact with eyes, skin and clothing. When using do not eat or drink. When using do not smoke. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.				

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	Appearance	Green black liquid
Odor	Naphthalene/ ether odor	Odor threshold	> 0.3 ppm (Naphthalene)
pH	alkaline	Specific gravity	1.04
Boiling point	162°C / 324°F (Glycol ethers)	Coefficient of water/oil distribution	N/Av
Melting/Freezing point	-64°C/-83°F	Solubility in water	Approximately 90%
Vapor pressure (mmHg @ 20° C / 68° F)	1.7 mm Hg @ 20°C / 68°F	Evaporation rate (n Butyl acetate = 1)	0.36
Vapor density (Air = 1)	4.6	Volatiles (% by weight)	N/Av
Volatile organic Compounds (VOC's)	N/Av	Auto ignition temperature	188°C / 370°F
Flash point	70°C / 158°F	Upper flammable limit (% by vol.)	17.4 (Glycol ethers)
Flash point Method	Cleveland Open Cup	Flashback observed	N/Ap
Lower flammable limit (% by vol.)	1.5 (Glycol ethers)		
Flame Projection Length	N/Ap		
Viscosity	N/Av		
Absolute pressure of container	N/Ap		

SECTION 10 – STABILITY AND REACTIVITY

STABILITY AND REACTIVITY:	Stable under the recommended storage and handling conditions prescribed.
HAZARDOUS POLYMERIZATION:	Store in a cool, dry, well ventilated area. Store away from areas of excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
CONDITIONS TO AVOID:	Strong oxidizing agents; Acids; Bases; Water
MATERIALS TO AVOID AND INCOMPATIBILITY:	Incompatible materials (see Section 7).
HAZARDOUS DECOMPOSITION PRODUCTS:	None known, refer to hazardous combustion products in Section 5.

SECTION 11 – TOXICOLOGICAL INFORMATION

TARGET ORGANS:	Eyes, skin, respiratory system, central nervous system, blood system, liver, brain and kidneys
ROUTES OF EXPOSURE:	Inhalation: <i>YES</i> Skin Absorption: <i>YES</i> Skin & Eyes: <i>YES</i> Ingestion: <i>YES</i>
TOXICOLOGICAL DATA:	There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Ingredients	LC ₅₀ (4hr)	LD ₅₀	
	inh, rat	(Oral, rat)	(Rabbit, dermal)
Sodium naphthalide	N/Av	N/Av	N/Av
2-Methoxyethyl ether	N/Av	5400 mg/kg	N/Av

SECTION 11 – TOXICOLOGICAL INFORMATION (CONTINUED)

CARCINOGENIC STATUS :	No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.
REPRODUCTIVE EFFECTS:	Contains a chemical or chemicals which may cause male and/or female reproductive toxicity. This product contains: 2 Methoxyethyl ether.
TERATOGENICITY:	Contains a chemical or chemicals which may be teratogenic. This product contains: 2 Methoxyethyl ether.
MUTAGENICITY:	Not expected to be mutagenic in humans.
EPIDEMIOLOGY:	Not available.
SENSITIZATION TO MATERIAL:	May cause sensitization by skin contact.
SYNERGISTIC MATERIALS:	Not available.
IRRITANCY:	Moderate to severe irritation.
OTHER IMPORTANT HAZARDS:	CNS depression may result from extreme exposures.
CONDITIONS AGGRAVATED BY OVEREXPOSURE:	Pre existing skin, eye and respiratory disorders.

SECTION 12 – ECOLOGICAL INFORMATION

ECOTOXICITY:	No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.
MOBILITY:	No data is available on the product itself.
PERSISTENCE:	No data is available on the product itself.
BIOACCUMULATION POTENTIAL:	No data is available on the product itself.
OTHER ADVERSE ENVIRONMENTAL EFFECTS:	No data is available on the product itself.


SECTION 13 – DISPOSAL CONSIDERATIONS

HANDLING FOR DISPOSAL:	Handle waste according to recommendations in Section 7. Do not cut, weld, drill or grind on or near this container.
METHODS OF DISPOSAL:	Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
RCRA:	If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 – TRANSPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
49CFR/DOT	Not regulated for road or rail shipment if packaged in non bulk containers (450 Litres or less each).				
49CFR/DOT Additional information	None				

SECTION 14 – TRANSPORT INFORMATION (CONTINUED)

TDG	None	Not regulated	Not regulated	None	
TDG Additional information	None				

SECTION 15 – REGULATORY INFORMATION

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None.

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazard; Chronic health hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material is not subject to SARA notification requirements, since it does not contain any Toxic Chemical constituents above de minimus concentrations.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

Other U.S. State "Right to Know" Lists: The following chemicals are specifically listed by individual States: 2-Methoxyethyl ether (CA)

International Information:

WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.


SECTION 16 – OTHER INFORMATION

HMIS RATING:	* Chronic hazard	0 – Minimal	1 – Slight	2 – Moderate	3 – Serious	4 – Severe
	Health: *2	Flammability: 2		Reactivity: 0		

SAFETY DATA SHEET

LEGEND:	<p>ACGIH: American Conference of Governmental Industrial Hygienists CAS: Chemical Abstract Services CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980 CFR: Code of Federal Regulations CNS: Central Nervous System CSA: Canadian Standards Association DOT: Department of Transportation EPA: Environmental Protection Agency HMIS: Hazardous Materials Identification System HSDB: Hazardous Substances Data Bank IARC: International Agency for Research on Cancer IATA: International Air Transport Association ICAO: International Civil Aviation Organisation IMDG: International Maritime Dangerous Goods Inh: Inhalation LC: Lethal Concentration LD: Lethal Dose N/Ap: Not Applicable</p>	<p>N/Av: Not Available NFPA: National Fire Protection Association NIOSH: National Institute of Occupational Safety and Health NTP: National Toxicology Program OSHA: Occupational Safety and Health Administration PEL: Permissible exposure limit PMCC: Pensky Martens Closed Cup RCRA: Resource Conservation and Recovery Act RTECS: Registry of Toxic Effects of Chemical Substances SARA: Superfund Amendments and Reauthorization Act STEL: Short Term Exposure Limit TLV: Threshold Limit Values TWA: Time Weighted Average WHMIS: Workplace Hazardous Materials Identification System</p>
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REFERENCES:	<ol style="list-style-type: none"> 1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2011. 2. International Agency for Research on Cancer Monographs, searched 2011. 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2012 (Chempendium and RTECs). 4. Safety Data Sheet from manufacturer. 5. US EPA Title III List of Lists July 2011 version. 6. California Proposition 65 List February 3, 2012 version.
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