



Factor II, Incorporated

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MATERIAL SAFETY DATA SHEET ETF I-301 Extrinsic Tri Fluid In Case of Emergency Contact Factor II, Inc. 928-537-8387 or 928-242-1308

Factor II, Inc. Technology urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to the use and understanding of the data contained in this MSDS.

To promote safe handling each customer or recipient should: (1) notify and furnish its employees, agents, contractors, customers, and others whom it knows or believes will use this material of the information regarding hazards or safety, (2) request its customers to notify their employees, customers and other users of the product of this information.

I. IDENTIFICATION and INGREDIENTS

CAS #	Hazardous Component	Sara 313	OSHA PEL	ACGIH TLV %
71-55-6	Methyl Chloroform	Y	350 ppm	350 ppm <80
78-92-2	Butyl Alcohol	Y	150 ppm	150 ppm <2
646-06-0	Dioxolane	N	N/E	N/E <3

II. PHYSICAL DATA (Based on typical material)

BOILING POINT: 72C-162°F
SPECIFIC GRAVITY (H₂-O=1): 1.17
VAPOR PRESSURE @20°C: 100mm Hg
VAPOR DENSITY (air=1): 4.45
EVAPORATION RATE (Butyl Acetate =1) 1.3
SOLUBILITY IN WATER (By wt): Slight
APPEARANCE: Clear
ODOR: Cinnamon
PHYSICAL STATE: Liquid

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:162°F TCC

EXTINGUISHING MEDIA; Water Fog

FLAMMABLE LIMITS: LEL: 7% OEL: 15%

SPECIAL FIRE FIGHTING PROCEDURES; Firefighters should wear NIOSA/MSMA approved positive pressure self-contained breathing apparatus for possible exposure to toxic by products of combustion as denoted in section V.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Products of combustion in open flame CO₂ CO, HCl,COCl₂

IV. HEALTH HAZARD DATA



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ROUTES OF ENTRY:

Inhalation and Dermal are the primary routes of entry, although other avenues should also be considered.

HEALTH HAZARDS (ACUTE AND CHRONIC):

INHALATION:

ETF is moderately toxic by inhalation. Dioxolane is mildly toxic. ETC is primarily a central nervous system depressant and may possible cause central nervous system damage.

EYE AND SKIN:

ETF is moderately toxic via skin absorption. Material is irritating to the skin and eyes.

INGESTION:

Dioxlone and ETF are moderately toxic by ingestion. Butyl Alcohol is mildly toxic. Swallowing product may cause irritation of the mouth and GI tract. Vomiting and subsequent aspiration into the lungs may lead to chemical pneumonia and pulmonary edema which is potentially fatal.

CHRONIC: There is no evidence that ice causes cancer or causes birth defects.

SIGNS AND SYMPTOMS OF EXPOSURE:

INHALATION

Irritation of the respiratory system, dizziness, nausea, lightheadedness, headache, loss of coordination and equilibrium, unconsciousness, conjunctiva irritation, hallucinations, irritability, aggression, hypermobility, diarrhea, vomiting possible central nervous system damage, and death in cases of severe overexposure.

EYE/SKIN

May cause irritation and dermatitis. The problem may be accentuated by liquid trapped against the skin by contaminated clothing and shoes, increasing the likelihood of absorption.

INGESTION

Material may cause irritation of the mouth and GI tract along with other effects listed under inhalation.

Medical conditions generally aggravated by exposure:

None Known

Emergency and first aid procedures

INHALATION

Remove individual to fresh air. If breathing difficulties provide oxygen if someone medical in attendance. If not breathing give mouth to mouth artificial respiration. Get immediate medical attention.

EYE AND SKIN CONTACT

Flush eyes with copious amounts of water for at least 15 minutes. Wash skin with soap and water for at least 15 minutes. Remove all contaminated clothing and launder prior to reuse. Properly discard all leather articles, which may be soaked with product.

INGESTION

If conscious, drink large amounts of water, do not induce vomiting. Never administer anything by mouth to an unconscious person. If vomiting occurs spontaneously keep individual's head below their hips to prevent aspiration of material into the lungs. Seek medical attention. If unconscious or in convulsions take immediately to the hospital.

Other health warnings

LD50 (Oral-Rat)	METHYLCHLOROFORM	BUTYL ALCOHOL	DIOXLANE
LD50 (Dermal- Rabbit)	10.3 g/Kg	6.5 g/Kg	3.0 g/Kg
	>15 g/KG	N/D	8.5 g/Kg



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LD50 (Inhalation-Rat)

18,000 ppm/4H

N/D

20,650 mg/m3/4H

Note to Physician

Never administer adrenaline following ETF overexposure. Increased sensitivity of the heart to adrenaline may be caused by overexposure to this material.

ETF has been shown to be an experimental tetratogen.

V. PRECAUTIONS FOR SAFE HANDLING AND USE

Immediately evacuate the area and provide maximum ventilation. Unprotected personnel, should move upwind of the spill. Only personnel equipped with proper respiratory and skin/eye protection should be permitted in the area. Dike area to contain the spill. Take precautions as necessary to prevent contamination of the ground and surface waters. Recover spilled material with an absorbent material such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including vapors, have been removed, thoroughly wet vacuum the area. Do not flush to the sewer. If area is porous, remove as much earth and gravel etc as possible and place in closed container.

Contaminated sawdust, vermiculite or porous surface must be disposed of in a permitted hazardous waste management facility. Recovered liquids may be reprocessed or incinerated, or must be treated in a permitted hazardous waste management facility. Care must be taken when using or disposing of chemical materials and or their containers in accordance with the clean air act, the clean water act, the resource conservation and recovery act, department of transportation, as well as any other relevant Federal, State or Local laws/regulations regarding disposal.

POSSIBLE WASTE DISPOSAL CODES: U226, F001 AND F002.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Do not use in poorly ventilated or confined spaces without proper respiratory protection.

Store only in closed, properly labeled containers.

This material or its vapors when in contact with flames, Hot glowing surfaces or electric arcs can decompose to form hydrogen chloride, chlorine and other toxic compounds.

Do not use cutting or welding torches on drums that contained product unless properly purged and cleaned.

OTHER PRECAUTIONS:

Do not breathe vapors, High concentrations can cause dizziness, unconsciousness, or death in extreme cases.

Use only with adequate ventilation. Ventilation must be sufficient to limit employees' exposure.

Avoid contact with eyes or skin: Do not ingest.

Avoid contamination of water supplies!!!! Any spill or leak has the potential to cause underground water contamination which may if sufficiently severe, render a drinking water source unfit for human consumption. Contamination that does occur cannot be easily corrected.

Chlorinated solvent used as a flash point suppressant must be added in sufficient quantity or the resultant mixture may have a flashpoint lower than the flammable component.

VI. CONTROL MEASURES

RESPIRATORY PROTECTION: To limit employees' exposure, OSHA requires that the use of administrative or engineering controls must first be developed and implemented whenever feasible(29CFR 1910.1000(e)). When controls are not feasible then protective equipment, such as respirators, may be used. Half or full face respirators in conjunction with the proper chemical cartridge may be used when conditions do not exceed permissible limits. Positive pressure self-



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contained units (SCBAs) are required whenever: there is insufficient oxygen, poorly ventilated rooms or when exposure is above the PEL, and some confined-space conditions. Use only OSHA/Niosh approved respirators according to the manufacturer's directions and the provisions under 29CFR 1910.135.

EYE PROTECTION: Splashproof goggles

DERMAL PROTECTION: Protect all exposed skin from liquid contact. Use synthetic gloves such as viton; for limited service polyvinyl alcohol (degrades in water), nitrile, butyl, or neoprene. Aprons and other protective equipment should be used when there is a chance for splashing.

Eyewash and safety showers are recommended in areas where this product is handled.

VII. ADDITIONAL INFORMATION

DOT INFORMATION:

Proper shipping name: 1,1,1 Trichloroethane
Hazard class: 6.1
Identification number UN2831
Packing Group: pg111
Required Labels: Keep away from food
Reportable quantity: 454 kg (1000 lbs.)

HMIS RATINGS: HEALTH 3
FIRE 1
REACTIVITY 1

California proposition 65: This product contains ethylene chloride as process impurities of less than 0.1%. This compound is listed as a known carcinogen under this regulation.

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet, and is offered in good faith. Since the use of this information and of these opinions and the conditions of the use of the product are not within the control of Factor II Technology, it is the user's obligation to determine the conditions of safe use of the product.