

**SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Company Address:**8125 Cobb Center Drive  
Kennesaw, GA 30152Product Information: 800-TECH-401  
Customer Service: 800-645-5244Emergency: (Chemtrec) 800-424-9300  
Revision Date: February 10, 2007**Product Identification****FLUX-OFF® HEAVY DUTY (Liquid)****Product Code:** ES131, ES531, ES5531, ES831L**SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS#	Wt. % Range
Fluorinated Hydrocarbon(HFE)	163702-07-6/163702-08-7	30.0-60.0
trans-1,2-Dichloroethylene	156-60-5	30.0-60.0
Ethanol	64-17-5	1.0-5.0

**SECTION 3: HAZARD IDENTIFICATION****Emergency Overview:** Clear, colorless liquid with faint ethereal odor. This product is nonflammable. Liquid may irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product vapor may produce dizziness and nausea.**Potential Health Effects:****Eyes:** Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.**Skin:** Prolonged contact can cause skin irritation, including redness, burning, drying and/or cracking of skin..**Ingestion:** May be harmful if swallowed. Swallowing this material may result in nausea, vomiting and weakness followed by central nervous system depression.**Inhalation:** Can be harmful if inhaled. High concentrations of vapors in immediate area can cause dizziness, nausea, vomiting, unconsciousness and death.**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. Remove contaminated clothing. Get medical attention if irritation develops or persist. Wash clothing before reuse.**Ingestion:** If swallowed, do not induce vomiting. If conscious, give 2 glasses of water. Never give anything by mouth to an unconscious person. Keep head below knees to minimize chance of aspirating material into the lungs. Get medical attention immediately.**Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.**SECTION 5: FIRE FIGHTING MEASURES****Flash Point:** None to boiling(TCC)**Extinguishing Media:** Use water spray or fog, CO2, dry chemical or water stream 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****Spills:** Shut off leak if possible and safe to do so. 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.**SECTION 7: HANDLING AND STORAGE**

Avoid prolonged or repeated contact with eyes, skin, and clothing. Wash hands before eating. 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	OTHER
Fluorinated Hydrocarbon(HFE)	NE	NE	750 ppm (3M)
trans-1,2-Dichloroethylene	200 ppm	200 ppm	
Ethanol	1,000 ppm	1,000 ppm	

**NE = Not Established****NFPA and HMIS Codes:**

	NFPA	HMIS
Health	1	1
Flammability	1	1
Reactivity	1	1
Personal Protection	-	B

**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.**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****Physical State:** Clear, colorless liquid**Odor:** Ethereal Odor**pH:** NA**Vapor Pressure:** 450mmHg@ 70F**Boiling Point:** 106°F**Percent Volatile:** 100%**Solubility in Water:** Negligible**Specific Gravity:** 1.32  
(Water =1)**Evaporation Rate:** >1  
(Butyl acetate=1)

**SECTION 10: STABILITY AND REACTIVITY**

Stability - This product is stable.

Conditions to Avoid: Steam, oxidizers, elevated temperatures. Do not spray near open flames, red hot surfaces or other sources of ignition.

Incompatibility: Do not mix with alkali metals, pure oxygen, strong base, open flames, and welding arcs.

Products of Decomposition: Thermal decomposition may release hydrogen chloride, hydrogen fluoride, perfluoroisobutylene and small amounts of phosgene and chlorine. Solvent decomposition occurs when catalyzed by metal chlorides which can be produced by reaction of HCl and metals in the system. In the presence of aluminum and excessive water, the decomposition can proceed rapidly with production of large amounts of heat and HCl fumes.

Hazardous Polymerization: Will not occur

Conditions to Avoid: Finely divided active metals, alkali and alkaline earth metals

**SECTION 11: TOXICOLOGICAL INFORMATION**Inhalation:

Fluorinated Hydrocarbon (HFE)	LD50 rats	> 100 000 ppm (4hr)*
trans-1,2-Dichloroethylene	LC50 rats	24,100 ppm (4hr)*
Ethanol	LC50 rats	20,000ppm/10hr

Ingestion:

Fluorinated Hydrocarbon (HFE)	LD50/rats	> 5000 mg/kg*
trans-1,2-Dichloroethylene	LD50/rats	> 5 000 mg/kg*
Ethanol	LD50 rat	7060mg/kg

Skin

Fluorinated Hydrocarbon (HFE)	500 mg/rats	MLD*
trans-1,2-Dichloroethylene	LD50 rabbit	>5,000 mg/kg
Ethanol	rabbit 400 mg open	MLD

Eye:

Fluorinated Hydrocarbon (HFE)	150 mg/rats/24H	MLD*
trans-1,2-Dichloroethylene	MOD-SEV*	
Ethanol	rabbit 500 mg	SEV

\*Information provided by manufacturer.

Cancer Information: No ingredients in this product are listed as human carcinogens by IARC or NTP.

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, NOI, Not Regulated

**SECTION 15: REGULATORY INFORMATION****SECTION 313 SUPPLIER NOTIFICATION**

This product contains no 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**

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.