

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: October 6, 1997**Product Identification****FLUX-OFF HEAVY DUTY****Product Code: ES1631, ES831B****SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

| Chemical Name | CAS# | Wt. % Range |
|------------------------------|-------------------------|-------------|
| Fluorinated Hydrocarbon(HFE) | 163702-07-6/163702-08-7 | 30.0-50.0 |
| Trans-1,2-Dichloroethylene | 156-60-5 | 30.0-50.0 |
| Ethanol | 64-17-5 | 1.0-5.0 |
| 1,1,1,2-Tetrafluoroethane | 811-97-2 | 10.0-40.0 |
| Carbon Dioxide | 67-56-1 | 1.0-5.0 |

Note: For industrial use only.

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-TWA | OSHA PEL | OTHER TLV |
|------------------------------|---------------|----------|-------------------|
| Fluorinated Hydrocarbon(HFE) | NE | NE | 600 ppm (3M) |
| Trans-1,2-Dichloroethylene | 200 ppm | 200 ppm | 75 ppm (PPG) |
| 1,1,1,2-Tetrafluoroethane | NE | NE | 1000 ppm (Dupont) |
| Carbon Dioxide | 5,000ppm | 5,000ppm | 30,000 ppm |
| Ethanol | 1,000ppm | 1000ppm | NE |

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

| | NFPA | HMIS |
|---------------------|------|------|
| Health | 2 | 2 |
| Flammability | 1 | 1 |
| Reactivity | 1 | 1 |
| Personal Protection | - | B |

Work/Hygienic Practices: Good general ventilation should be sufficient to control airborne levels. This material does not have established exposure limits. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves. See 29 CFR 1910.1052 for specific OSHA requirements for employee exposure to dichloromethane.**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****Physical State:** Clear, colorless liquid**Odor:** Ethereal Odor**pH:** NA**Vapor Pressure:** 450 mmHg @ 70F**(Air = 1)****Boiling Point:** 106°F**Solubility in Water:** Negligible**Specific Gravity:** 1.32
(Water =1)**Evaporation Rate:** >1**(Butyl acetate=1)****Viscosity:** NA**Percent Volatile:** 100%**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. This product should not be used in long term contact with aluminum or zinc or their alloys.**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 LD50 rats > 3 000 ppm (8 hr)*
 Tetrafluoroethane Rats ALC 567,000ppm/4hrs
 Ethanol LC50 rats 20,000ppm/10hr
 Carbon Dioxide LCLo/Human 9pph/5min

Ingestion:

Fluorinated Hydrocarbon(HFE) LD50/rats >5g/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 > 5 000 mg/kg*
 Ethanol rabbit 400 mg open MLD

Eye:

Fluorinated Hydrocarbon(HFE) 150 mg/rats/24H MLD*
 Trans-1,2-Dichloroethylene 1.1/8 MEAN/45/110 MAX.*
 Ethanol rabbit 500 mg SEV

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

*Information provided by manufacturer.

SECTION 12: ECOLOGICAL 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 | UN Number | Class | Sub. Risk | Pkg. Group | Hazard Label | Pkg. Instr. | Max. Quantity |
|--|-----------|-------|-----------|------------|---------------|-------------|-----------------|
| <u>Air:</u> Aerosols non-flammable n.o.s. | UN 1950 | 2.2 | NA | NA. | Non-flammable | 203 | 75 k.g; 150k.g. |
| <u>Ground:</u> Consumer Commodity ORM-D | NA | ORM-D | NA | NA | ORM-D | Pkg. Auth. | 173.306 |

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.

CALIFORNIA PROPOSITION 65: This product contains no chemicals known to the state of California to cause cancer.

TOXIC SUBSTANCES CONTROL ACT (TSCA).

All ingredients of this product are listed on the TSCA Inventory.

SECTION 16: OTHER INFORMATION

This product is a Level 1 aerosol. Do not puncture or incinerate containers. Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

REFERENCES: 29 CFR 1910.1200 40 CFR 300-700 ANSI Z400.1-1993
 NIOSH RTECS provided by CHEM-BANK by SILVERPLATTER
 Guide to Occupational Exposure Values 1997

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.