

MSDS No: 13838-16-9

Date: 06/08/2004

SUPPLIER ADDRESS: 6141 Easton Road, Bldg. 1
PO Box 310
Plumsteadville, PA 18949-0310

EMERGENCY PHONE NUMBER: (215) 766-8861

1. CHEMICAL PRODUCT

PRODUCT NAME: 2-CHLORO-1,1,2-TRIFLUOROETHYL DIFLUOROMETHYL ETHER

SYNONYMS: Enflurane, Ethrane, Methylflurether

2. COMPOSITION, INFORMATION ON INGREDIENTS

Exposure Limits (PPM)

<u>Ingredient Name</u>	<u>Formula</u>	<u>CAS #</u>	<u>Concentration</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>MAC</u>	<u>Other STEL</u>
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Note: NE = NONE ESTABLISHED

S/A = SIMPLE ASPHYXIAN

3. HAZARD IDENTIFICATION

* * * EMERGENCY OVERVIEW * * *
Anesthetic liquid and vapor.
Can cause anesthetic effects.

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Inhalation

ACUTE EFFECTS: This material is an inhalation anesthetic. Symptoms of exposure are decreased blood pressure, muscle relaxation, decreased intellectual function, mood changes, hypotension, respiratory depression, arrhythmias, shivering, nausea and vomiting. In susceptible individuals, it may trigger malignant hyperthermia.

CHRONIC EFFECTS: Possible liver injury.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None known

OTHER EFFECTS OF OVEREXPOSURE: None

CARCINOGENICITY (US ONLY):

NTP - NO

IARC MONOGRAPHS - NO

OSHA REGULATED - NO

4. FIRST AID MEASURES

INHALATION: Immediately remove victim to fresh air.If breathing has stopped, give artificial respiration.If breathing is difficult, give oxygen.

EYE CONTACT: None

SKIN CONTACT: None

INGESTION: None

IN EVENT OF EXPOSURE, CONSULT A PHYSICIAN

NOTE TO PHYSICIAN: None

5. FIRE FIGHTING MEASURES

FLASH POINT: Nonflammable

AUTOIGNITION TEMPERATURE: N/Ap

FLAMMABLE LIMITS: Nonflammable

LOWER:

UPPER:

EXTINGUISHING MEDIA: Use what is appropriate for surrounding fire.

SPECIAL FIRE FIGHTING INSTRUCTION AND EQUIPMENT: Wear self-contained breathing apparatus and full protective clothing.Keep fire exposed cylinders cool with water spray.

HAZARDOUS COMBUSTION PRODUCTS: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP PROCEDURES: Evacuate and ventilate area.Remove leaking cylinder to exhaust hood or safe outdoor area.

SPECIALIZED EQUIPMENT: None

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Secure cylinder when using to protect from falling.Use suitable hand truck to move cylinders.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in well ventilated areas.Keep valve protection cap on cylinders when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide adequate general and local exhaust ventilation to maintain concentration below exposure limits.

EYE / FACE PROTECTION: Safety glasses

SKIN PROTECTION: None

RESPIRATORY PROTECTION: In case of leakage, use self-contained breathing apparatus.

OTHER PROTECTIVE EQUIPMENT: Safety shoes when handling cylinders.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless

ODOR: Sweet odor.

PHYSICAL PRESSURE: Liquid or gas.

VAPOR PRESSURE: 175 mm Hg

VAPOR DENSITY (AIR=1): N/A

BOILING POINT (C): 56.5

SOLUBILITY IN WATER: INSOLUBLE

SPECIFIC GRAVITY (H₂O=1): @20 deg.C: 1.517

EVAPORATION RATE: N/A

ODOR THRESHOLD: N/Av

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal storage conditions.

CONDITIONS TO AVOID: Storage in poorly ventilated areas.Storage near a heat source.

MATERIALS TO AVOID: None

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION: None

11. TOXICOLOGICAL INFORMATION

LETHAL CONCENTRATION (LC50): 24,248 ppm, Rat 1 hour

LETHAL DOSE 50 (LD50): 5,450 ul/kg, rat

TERATOGENICITY: N/Av

REPRODUCTIVE EFFECTS: N/Av

MUTAGENICITY: N/Av

12. ECOLOGICAL INFORMATION

No adverse ecological effects are expected.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of non-refillable cylinders in accordance with federal, state and local regulations. Allow gas to vent slowly to atmosphere in an unconfined area or exhaust hood. If the cylinders are the refillable type, return cylinders to supplier with any valve outlet plugs or caps secured and valve protection caps in place.

14. TRANSPORT INFORMATION

CONCENTRATION: 99+%

DOT DESCRIPTION (US ONLY):

PROPER SHIPPING NAME: Other regulated substances, liquid, n.o. s.

HAZARD CLASS: 9 (Class 9)

IDENTIFICATION NUMBER: NA3082

REPORTABLE QUANTITIES: None

LABELING: CLASS 9

ADR / RID (EU Only): N/Av

SPECIAL PRECAUTIONS: Cylinders should be transported in a secure upright position in a well ventilated truck.

15. REGULATORY INFORMATION

OSHA: Process Safety Management: Material is not listed in appendix A of 29 CFR 1910.119 as highly hazardous chemical.

TSCA: Material is not listed in TSCA inventory. This material is an FDA approved general inhalation anesthetic.

SARA: The threshold planning quantity for material is 10,000 lbs.

EU NUMBER: N/Av

NUMBER IN ANNEX 1 OF DIR 67/548: Not listed in annex 1.

EU CLASSIFICATION: N/Av

R: 42

S: 9

16. OTHER INFORMATION

OTHER PRECAUTIONS: Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law (49 CFR).

ABBREVIATIONS: N/Ap - Not Applicable N/Av - Not Available SA - Simple Asphyxiant NE - None Established

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