



MATERIAL SAFETY DATA SHEET

IDENTITY: ETHYL-3-HYDROXY-4,4,4-TRIFLUOROBUTYRATE (FOR RESEARCH & DEVELOPMENT ONLY)

SECTION I: MANUFACTURER

HALOCARBON PRODUCTS CORPORATION    Emergency Number:        (803) 278 3504  
P.O. Box 661                                    Customer Service & Sales: (201) 262 8899  
River Edge, N.J. 07661

Prepared by: MSDS Coordinator

SECTION II: CHEMICAL IDENTITY

Hazardous Components	CAS No.	OSHA PEL	ACGIH TLV	Other Limits
Ethyl-3-hydroxy-4,4,4-trifluorobutyrate	372-30-5	None	None	None

OSHA HAZARD RATING:

This product contains the following toxic chemical(s) subject to Section 313 Title III reporting requirements (40 CFR Part 372).

None

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point : 90-91C at 50mm Hg                                    Vapor Pressure: Not available  
Melting Point : Not available    Vapor Density(Air=1): >1  
Specific Gravity(H2O=1): 1.26g/cc                                        Solubility in Water : Insoluble

Appearance and Odor: clear combustible liquid, lachrymator.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point/Method: 86C, closed cup                                    Autoignition Temp: Not determined  
Flammability Limits in Air - LEL: Not available                                    UEL: Not available

Extinguishing Media: In case of small fires, use alcohol foam, dry chemical or carbon dioxide. For large fires, apply water from as far as possible. Solid stream of water may be ineffective. Apply in the form of mist or spray. Cool all affected containers with flooding quantities of water.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin or eyes. Material is irritant and lachrymator.

Unusual Fire and Explosion Hazards: Thermal decomposition products may be corrosive and toxic. Combustible liquid.

SECTION V - REACTIVITY DATA

Unstable    [ ]    Conditions to Avoid: Keep away from heat, sparks and open flames. Store in a cool, dry place.  
Stable        [X]

Incompatibility (Materials to Avoid): Strong oxidizing agents, strong bases.

Hazardous Combustion or Decomposition Products: Toxic fumes of carbon dioxide, carbon monoxide, hydrogen fluoride.

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Hazardous Polymerization  May Occur  Will Not Occur  
Conditions To Avoid: N/A

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SECTION VI - HEALTH HAZARD DATA

May be harmful if swallowed, inhaled or absorbed on skin. May be destructive to tissues of the mucous membrane, upper respiratory tract, eyes and skin. To the best of our knowledge the chemical, physical and toxicological properties have not been thoroughly investigated.

Primary routes of entry:  Inhalation  Skin  Eyes  Oral

Chronic Effects of overexposure: Unknown

Carcinogenicity listing:  NTP  IARC  OSHA  
 Other

First Aid

Inhalation: Remove to fresh air and give artificial respiration if necessary. Seek medical help.

Skin: Wash affected area immediately for 15 minutes. Remove contaminated clothing and shoes. Seek medical help if needed.

Eye: Flush eyes with plenty of water for at least 15 minutes. Get immediate medical help.

Oral: Wash out mouth with water provided person is conscious. Get medical attention.

Medical Conditions Generally Aggravated by Exposure: No information available.

Other Health Hazards: No information available.

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SECTION VII - PROTECTION INFORMATION

Respiratory: Wear appropriate respirator. Do not breathe vapor. Self-contained breathing apparatus for emergency use.

Ventilation: Mechanical exhaust required. Use in chemical fume hood.

Eye and Face: Safety glasses or goggles.

Gloves: Wear appropriate chemical resistant gloves.

Other equipment: Safety shower and eye bath.

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SECTION VIII - SPILL, LEAK AND DISPOSAL PROCEDURES

Spill, Leak, or Release: Wear self-contained breathing apparatus, impervious gloves and heavy rubber boots. Evacuate area, shut off all sources of ignition. Cover with dry lime or soda ash. Place in closed container. Ventilate area and wash spill site after material has been picked up.

Waste Disposal: Burn in a chemical incinerator equipped with an afterburner and scrubber. Use care in igniting this material as it is highly flammable. Observe all federal, state and local regulations.

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SECTION IX - OTHER INFORMATION

1. Hazardous Materials/Dangerous Goods Shipping Regulations

U.S. (49 CFR): Proper Shipping Name: Combustible liquid, N.O.S. (Ethyl-3-hydroxy-4,4,4-trifluorobutyrate)  
Hazard Class: Combustible Liquid ID No.: NA 1993  
Packaging Group: III

IATA: Proper Shipping Name: Non-Hazardous for Air Transport

IMDG: Proper Shipping Name: Non-Hazardous for Ocean Transport

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SEPTEMBER 8, 2006