CONTACT : LEONID CHEMICALS
Leonid Chemicals Pvt Ltd
62/A-2 1st Stage,Yeshwanthpur Industrial Suburb
Ashokpuram School Road
Bangalore-560 022, Karnataka, INDIA
Ph: +91-80-2337 8354, Fax: +91-80-2357 4827

1 Identification of substance:

- **Product details:**
- **Product name:** Ethyl heptafluorobutyrate
- **Stock number:** 373

Manufacturer/Supplier:
LEONID CHEMICALS
62/A-2 2nd Stage, Industrial Suburb
Yeshwanthpur, Bangalore -22, INDIA
Ph- +91-80-23378354.

2 Composition/Data on components:

- **Chemical characterization:**
  Description: (CAS#)
  Ethyl heptafluorobutyrate (CAS# 356-27-4): 100%
- **Identification number(s):**
- **EINECS Number:** 206-602-1

3 Hazards identification

- **Hazard description:** F Highly flammable
- **Information pertaining to particular dangers for man and environment**
  R 11 Highly flammable.
- **Classification system**
- **HMIS ratings (scale 0-4)**

  (Hazardous Materials Identification System)
  Health (acute effects) = 1
  Flammability = 3
  Reactivity = 1

4 First aid measures

- **After inhalation**
  Supply fresh air. If required, provide artificial respiration. Keep patient warm.
  Seek immediate medical advice.

- **After skin contact**
  Immediately wash with water and soap and rinse thoroughly.
  Seek immediate medical advice.
- **After eye contact**
  Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing** Seek immediate medical advice.

5 Fire fighting measures

- **Suitable extinguishing agents**
  In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
- **For safety reasons unsuitable extinguishing agents** Water
- **Special hazards caused by the material, its products of combustion or resulting gases:**
  In case of fire, the following can be released:
  Carbon monoxide and carbon dioxide
  Hydrogen fluoride (HF)
- **Protective equipment:**
  Wear self-contained respirator.
  Wear fully protective impervious suit.

6 Accidental release measures

- **Person-related safety precautions:**
  Wear protective equipment. Keep unprotected persons away.
  Ensure adequate ventilation
  Keep away from ignition sources
- **Measures for environmental protection:**
  Do not allow material to be released to the environment without proper governmental permits.
- **Measures for cleaning/collecting:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Ensure adequate ventilation.
  Do not flush with water or aqueous cleansing agents
  Keep away from ignition sources.
- **Additional information:**
  See Section 7 for information on safe handling
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Information for safe handling:**
  Keep container tightly sealed.

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Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

- **Information about protection against explosions and fires:**
Keep ignition sources away.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
- **Information about storage in one common storage facility:**
Store away from oxidizing agents.
Protect from heat.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:
Not required.

- **Additional information:** No data

- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
Use suitable respirator when high concentrations are present.
- **Protection of hands:**
Impervious gloves
Check protective gloves prior to each use for their proper condition.
- **Material of gloves**
The selection of suitable gloves not only depends on the material, but also on quality.
Quality will vary from manufacturer to manufacturer.
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

9 Physical and chemical properties:

- **General Information**

- **Form:** Liquid

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- **Color:** Colorless
- **Odor:** Not determined
- **Value/Range Unit Method**
- **Change in condition**
- **Melting point/Melting range:** Not determined
- **Boiling point/Boiling range:** 95-98 ° C
- **Sublimation temperature / start:** Not determined

- **Flash point:** 14 ° C

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined

- **Danger of explosion:**
  Product is not explosive. However, formation of explosive air/vapor mixtures is possible.

- **Explosion limits:**
- **Lower:** Not determined
- **Upper:** Not determined

- **Vapor pressure:** Not determined

- **Density:** at 20 ° C 1.396 g/cm³

- **Solubility in / Miscibility with**
- **Water:** Slightly soluble

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
  Decomposition will not occur if used and stored according to specifications.
- **Materials to be avoided:**
  Oxidizing agents
  Heat
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:**
  Carbon monoxide and carbon dioxide
  Hydrogen fluoride

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:**

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- **Subacute to chronic toxicity:**
  The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
  Behavioral - convulsions or effect on seizure threshold.
  Lungs, Thorax, or Respiration - dyspnea.
  Lungs, Thorax, or Respiration - cyanosis.
- **Additional toxicological information:**
  To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
  No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

- **General notes:**
  Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

- **Product:**
- **Recommendation**
  Consult state, local or national regulations to ensure proper disposal.

- **Uncleaned packagings:**
- **Recommendation:**
  Disposal must be made according to official regulations.

14 Transport information

- **DOT regulations:**
- **Hazard class:** 3
- **Identification number:** UN3272
- **Packing group:** II
- **Proper shipping name (technical name):**
  ESTERS, N.O.S. (Ethyl heptafluorobutyrate)
- **Label** 3

- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** 3 Flammable liquids
- **Danger code (Kemler):** 33
- **UN-Number:** 3272
- **Packaging group:** II
- **Description of goods:** 3272 ESTERS, N.O.S. (Ethyl heptafluorobutyrate)

- **Maritime transport IMDG:**

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- **IMDG Class:** 3
- **UN Number:** 3272
- **Label** 3
- **Packaging group:** II
- **Proper shipping name:** ESTERS, N.O.S. (Ethyl heptafluorobutyrate)

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 3
- **UN/ID Number:** 3272
- **Label** 3
- **Packaging group:** II
- **Proper shipping name:** ESTERS, N.O.S. (Ethyl heptafluorobutyrate)

15 Regulations

- **Product related hazard informations:**

- **Hazard symbols:** F Highly flammable

- **Risk phrases:** 11 Highly flammable.

- **Safety phrases:**
  7 Keep container tightly closed.
  33 Take precautionary measures against static discharges.
  43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
  60 This material and its container must be disposed of as hazardous waste.

- **National regulations**
  All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
  Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

- **Information about limitation of use:**
  For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

- **Department issuing MSDS:** Health, Safety and Environmental Department.
- **Contact:** Darrell R. Sanders

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