

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Catalog No.
L16454

Product Name: **1,1-Dichloro-1-fluoroethane, 97%**
Synonyms: HCFC-141b

Manufacturer/Supplier Name: Alfa Aesar - A Johnson Matthey Company
Address: 30 Bond St.
Ward Hill, MA 01835

Business Phone: 978-521-6300
Business Fax: 978-521-6350

For information
in North America, call: 978-521-6300

CHEMTREC Numbers:**For emergencies in the US, call CHEMTREC: 800-424-9300****For emergencies outside US, call INTERNATIONAL: (703)527-3887****For Nonemergency, call: (800)262-8200**[To Top of page](#)

SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS

Catalog No. L16454

Chemical Name 1,1-Dichloro-1-fluoroethane
CAS# 1717-00-6
% Weight (Typical) 97

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SECTION 3 : HAZARDS IDENTIFICATION

Catalog No. L16454

Emergency Overview: Reproductive effects. Mutation data. Environmental Hazard.

1,1-Dichloro-1-fluoroethane:

Potential Health Effects:

Eye Contact: No data
Skin Contact: No data
Inhalation: No data
Ingestion: No data
Target Organs: Liver. Reproductive System.

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SECTION 4 : FIRST AID MEASURES

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Eye Contact:	Immediately flush eyes with plenty of water for at least 20 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention if irritation persists, or symptoms of overexposure become apparent.
Skin Contact:	Immediately wash skin with plenty of water for at least 20 minutes, while removing contaminated clothing and shoes. Get medical attention especially, if irritation develops, persists, or symptoms of overexposure become apparent.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Keep warm. Get immediate medical attention.
Ingestion:	If swallowed, call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting unless instructed by medical personnel. Get medical attention.

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SECTION 5 : FIRE FIGHTING MEASURES

Catalog No. L16454

Flash Point:	No data
Extinguishing Media:	Use dry powder or carbon dioxide when fighting a fire involving this material.
Unsuitable Media:	Water extinguishers are not recommended.
Protective Equipment:	As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.

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SECTION 6 : ACCIDENTAL RELEASE MEASURES

Catalog No. L16454

Personal Precautions:	Use proper personal protective equipment as listed in section 8.
Spill Cleanup Measures:	Absorb spill with dry inert material such as dry sand, earth, or vermiculite, then place in suitable container. Refer to section 13 for proper disposal.
Environmental Precautions:	Do not allow material to enter drains or streams.

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SECTION 7 : HANDLING and STORAGE

Catalog No. L16454

Handling:	This product should be handled only by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals, who should take into account the fire, health and chemical hazard data. It should always be handled in an efficient fume hood or equivalent system. The user should consider that the toxicological and physiological properties of many compounds are not yet well determined and that new hazardous products may arise from reactions between chemicals. Care should be taken to prevent any chemical from coming into contact with the skin or eyes and from contaminating personal clothing.
Storage:	Store in a cold, below 5 degrees celcius, dry, well ventilated area away from sources of heat and incompatible substances. Keep container tightly closed and cold when not in use.
Hygiene Practices:	Wash thoroughly after handling. Avoid contact with eyes and skin. Avoid inhaling vapor or mist.

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SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTIONCatalog No. L16454

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Skin Protection Description:	Wear suitable protective clothing to prevent contact with skin.
Hand Protection Description:	Wear appropriate protective gloves. Consult glove manufacturers for glove permeability data.
Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited to airborne concentrations that are typically within 10 times the exposure limit. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIESCatalog No. L16454

Physical State/Appearance:	Liquid
Color:	Colorless
Vapor Pressure:	542 mbar @ 25°C (77°F)
Flash Point:	No data
Boiling Point:	32°C (89.6°F)
Melting Point:	-103°C (-153.4°F)
n-Octanol/water partition coefficient:	+2.04
Solubility in Water:	2.6 g/L @ 25°C (77°F)
Density:	1.228
Molecular Formula:	C ₂ H ₃ Cl ₂ F
Molecular Weight:	116.95

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SECTION 10 : STABILITY and REACTIVITYCatalog No. L16454

Conditions to Avoid:	High temperatures, flames and sparks.
Incompatibilities with Other Materials:	Oxidizing agents. Strong reducing agents. Strong bases. Alkali metals and other reactive metals.
Possible Decomposition Product:	Carbon monoxide. Phosgene. Hydrogen chloride. Hydrogen fluoride.

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SECTION 11 : TOXICOLOGICAL INFORMATIONCatalog No. L16454

1,1-Dichloro-1-fluoroethane :

RTECS Number:	KI0997000
Eye Effect:	No data reported in the cited references as of the revision date.
Skin Effects:	Skin - rabbit LD50: >2 gm/kg (RTECS). Skin - rat LD50: >2 gm/kg [Liver - other changes] (RTECS)
Ingestion Effects:	Oral - rat LD50: >5 gm/kg (RTECS)
Inhalation Effects:	Inhalation - rat LC50: 56700 ppm/6H [Behavioral - tremor Behavioral - ataxia] (RTECS); Inhalation -mouse LC50: 151 gm/m3/2H [Behavioral - general anesthetic Behavioral - ataxia Lungs, Thorax, or Respiration - cyanosis] (RTECS)
Chronic Inhalation Effects:	Inhalation - Human TCLo: 1200 mg/m3/4H/9D-I Kidney, Ureter, Bladder - other changes in urine composition (RTECS); Inhalation -rat TCLo: 50 gm/m3/4H/4W-I Endocrine - evidence of thyroid hypofunction; Inhalation -rat TCLo: 20000 ppm/6H/28D-I Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol); Inhalation -rat TCLo: 18200 mg/m3/4H/26W-I Vascular - BP lowering not characterized in autonomic section Kidney, Ureter, Bladder - proteinuria Biochemical - Enzyme inhibition, induction, or change in blood or tissue levels - phosphatases (RTECS); Inhalation -guinea pig TCLo: 18200 mg/m3/4H/26W-I Blood - changes in leukocyte (WBC) count (RTECS)
Carcinogenicity:	Tumorigenic - neoplastic by RTECS criteria.
Mutagenicity:	Mutation data reported. (RTECS).
Teratogenicity:	Teratogenic effects. (RTECS)

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SECTION 12 : ECOLOGICAL INFORMATIONCatalog No. L16454

Ecotoxicity:	No data available. EU classification: Harmful to aquatic organisms.
Bioaccumulation:	Not expected to bioaccumulate and/or bioconcentrate significantly in aquatic organisms. Estimated BCF 7-21 (HSDB).
Biodegradation:	No data available on biodegradability in soil and water. Vapor is slow to photodegrade in the atmosphere, estimated half-life 1000 days (HSDB). EU classification: Dangerous for the ozone layer.
Environmental Stability:	EU classification: Avoid release to the environment.

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SECTION 13 : DISPOSAL CONSIDERATIONSCatalog No. L16454

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines, by a licensed disposal company.
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SECTION 14 : TRANSPORT INFORMATIONCatalog No. L16454

DOT Shipping Name:	Environmentally hazardous substances, liquid, n.o.s. (1,1-Dichloro-1-fluoroethane)
DOT Hazard Class:	9
DOT Identification Number:	UN3082
DOT Packing Group:	III
DOT Subpart E Labeling Requirement:	9

SECTION 15 : REGULATORY INFORMATION

Catalog No. L16454

1,1-Dichloro-1-fluoroethane :

TSCA 8(b): Inventory Status: Listed on the TSCA inventory.

Risk Phrases: R52/53 Harmful to aquatic organisms, may cause long term adverse effects in the environment.
R59 Dangerous for the ozone layer.

Safety Phrase: S59 Refer to manufacturer/supplier for information on recovery/recycling.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

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SECTION 16 : ADDITIONAL INFORMATION

Catalog No. L16454

MSDS Preparation Date: January 1, 2002, Version 1

MSDS Revision Date: April 14, 2003.

MSDS Author: Actio Corporation.

Disclaimer:

This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. We shall ensure, so far as is reasonably practicable, that any revision of this Data Sheet is sent to all customers to whom we have directly supplied this substance, but must point out that it is the responsibility of any intermediate supplier to ensure that such revision is passed to the ultimate user. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment. Should further information be required, this can be obtained through the sales office whose address is at the top of this data sheet. We welcome any additional information about our products that customers have obtained by personal experience.

References:

1. American Chemical Society, STN Easy Online Database
2. Brethericks Reactive Chemical Hazards Database. Version 2.
3. Gassarett and Doulls Toxicology, The Basic Science of Poisons.
4. Hawleys Condensed Chemical Dictionary, Thirteenth Edition
5. IARC monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, WHO International Research on Cancer.
6. Industrial Hygiene and Toxicology, by F.A. Patty.
7. National Library of Medicine, Department of Health and Human Services, Hazardous Substances Data Bank (HSDB).
8. National Toxicology Program (NTP) Eighth Report on Carcinogens, 1997.
9. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) and Pocket Guide to Chemical Hazards.
10. OSHA Hazard Communication Standard, 1910.1200 and Z Tables.
11. Sax Dangerous Properties of Industrial Materials. Tenth Edition.
12. The Merck Index: An Encyclopedia of Chemicals and Drugs. Merck and Company. Twelfth Edition 1998.
13. Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment and Biological Exposure Indices. TLV Booklet, 2001.