ionz

SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : HCFC-141b
Catalog Number : io-2447
CAS Number : 1717-00-6
Identified uses : Laboratory chemicals, manufacture of chemical compounds
Company : Ionz

>> R&D Use only

2. Hazards Identification

GHS Classification:

Flammable liquid (category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

Pictogram(s)

>> Warning

GHS Hazard Statements

>> H412 (100%): Harmful to aquatic life with long lasting effects [Hazardous to the aquatic environment, long-term hazard]

>> H420 (52.2%): Harms public health and the environment by destroying ozone in the upper atmosphere [Warning Hazardous to the ozone layer]

Precautionary Statement Codes

>> P273, P501, and P502

>> Gives off irritating or toxic fumes (or gases) in a fire.

3. Composition/Information On Ingredients

Chemical name : HCFC-141b
CAS Number : 1717-00-6
Molecular Formula : C2H3Cl2F
Molecular Weight : 116.9500 g/mol

4. First Aid Measures

First Aid Measures

Inhalation First Aid

>> Fresh air, rest. Refer for medical attention.

Skin First Aid

>> Rinse and then wash skin with water and soap.

Eye First Aid

>> Rinse with plenty of water (remove contact lenses if easily possible).

Ingestion First Aid

>> Do NOT induce vomiting.

5. Fire Fighting Measures

>> Use water spray, foam, powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

6. Accidental Release Measures

Spillage Disposal:

Methods for containment and safety measures to protect workers dealing with a spillage of this chemical.

>> Personal protection: self-contained breathing apparatus. Do NOT let this chemical enter the environment. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Carefully collect remainder. Then store and dispose of according to local regulations.

7. Handling And Storage

Safe Storage:

>> Separated from strong acids. Cool. Keep in a well-ventilated room. Store in an area without drain or sewer access.

8. Exposure Control/ Personal Protection

Inhalation Risk:

>> On loss of containment this substance can cause serious risk of suffocation when in confined areas.

Effects of Short Term Exposure:

>> The substance is mildly irritating to the eyes. The substance may cause effects on the central nervous system and cardiovascular system. This may result in lowering of consciousness and cardiac disorders. Suffocation.

Fire Prevention

>> NO contact with hot surfaces.

Inhalation Prevention

>> Use closed system or ventilation.

Skin Prevention

>> Protective gloves.

Eye Prevention

>> Wear safety goggles.

9. Physical And Chemical Properties

Molecular Weight:

>> 116.95

Exact Mass:

>> 115.9595836

Physical Description:

>> 1,1-dichloro-1-fluoroethane is a colorless liquid at ambient conditions.

>> COLOURLESS LIQUID WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Colorless liquid

Odor:

>> Weak ethereal odor

Boiling Point:

>> 32 °C

>> 32 °C

Melting Point:

>> -103.5 °C

>> -103.5 °C

Solubility:

>> In water, 420 mg/l @ 25 °C

>> Solubility in water, g/100ml at 20 °C: 0.4

Density:

>> 1.250 g/cu cm @ 10 °C

>> 1.24 g/cm³

Vapor Density:

>> Relative vapor density (air = 1): 4.0

Vapor Pressure:

>> 600.0 [mmHg]

>> Vapor pressure, kPa at 25 °C: 76.3

LogP:

>> log Kow = 2.3

>> 2.3

Autoignition Temperature:

>> 530-550 °C

Decomposition:

>> UNDER CERTAIN CONDITIONS, FLUOROCARBON VAPORS MAY DECOMPOSE ON CONTACT WITH FLAMES OR HOT SURFACES, CREATING THE POTENTIAL HAZARD OF INHALATION OF TOXIC DECOMPOSITION PRODUCTS. /FLUOROCARBONS/

Viscosity:

>> 0.409 cP at 25 °C (liquid)

>> 0.33 mm²/s at 25 °C

Heat of Vaporization:

>> 223.15 kJ/kg

Refractive Index:

>> Index of refraction= 1.3600 @ 10 °C/D

10. Stability And Reactivity

>> No rapid reaction with air. No rapid reaction with water.

11. Toxicological Information

Exposure Routes:

>> The substance can be absorbed into the body by inhalation.

Inhalation Exposure

>> Drowsiness. Confusion. Unconsciousness.

Skin Exposure

>> Redness. Pain.

Eye Exposure

>> Redness. Pain.

Adverse Effects:

An adverse effect is an undesired harmful effect resulting from a medical treatment or other intervention.

>> Neurotoxin - Acute solvent syndrome

>> Other Poison - Simple Asphyxiant

Toxicity Data:

>> LC50 (rat) = 56,700 ppm/6hr

Interactions:

>> IF INHALATION OCCURS, EPINEPHRINE OR OTHER SYMPATHOMIMETIC AMINES & ADRENERGIC ACTIVATORS SHOULD NOT BE ADMIN SINCE THEY WILL FURTHER SENSITIZE HEART TO DEVELOPMENT OF ARRHYTHMIAS. /FLUOROCARBONS/

Antidote and Emergency Treatment:

>> ... Emergency treatment is supportive & includes decontamination, oxygen, & any specific therapy required in a particular case such as antiarrhythmics or anticonvulsants. A few patients may require intermittent positive-pressure ventilation, dialysis, or treatment for hepatic failure. /Solvent abuse/

Human Toxicity Excerpts:

>> No adverse effects in man have been reported.

Non-Human Toxicity Excerpts:

>> 1,1-Dichloro-1-fluoroethane has been subjected to skin & eye irritation studies, acute studies including cardiac sensitization studies, developmental toxicity studies & subchronic toxicity evaluations. The results indicate that 1,1-dichloro-1-fluoroethane is a very slight skin & eye irritant in rabbits. It did not produce delayed dermal contact sensitization in a Magnusson Kligman guinea pig assay. The 4 hr acute inhalation LC50 was found to be over 62,000 ppm. Above 30,000 ppm toxic signs were typical of CNS depression & were rapidly reversible upon termination of exposure. Acute studies to assess the potential to cause epinephrine-induced cardiac arrhythmias in the dog indicated a threshold of about 10,000 ppm. Maternal toxicity was noted in rats exposed to 20,000 ppm on days 6-16 of gestation. This was associated with fetal toxicity as evidenced by increased post implantation loss & reduced litter & fetal weights. There was no evidence of a teratological effect at 20,000 ppm. In rabbits, maternal toxicity was seen at 12,600 ppm. Gross exams at cesarean section & detailed fetal examinations did not indicate any effects of treatment. Exposure of male & female rats to 20,000 ppm, for up to 13 wk caused minor reductions in body weight increments. Minor plasma biochemical alterations were noted at 20,000 ppm involving some lipid parameters & calcium & phosphorous after 2 & 4 wk. After 13 wk, only cholesterol remained elevated. There were no effects on organ weights or macroscopic pathology in the 2, 4 or 13 wk studies. An unequivocal no effect level was 8,000 ppm. 1,1-Dichloro-1-fluoroethane is about to begin a battery of mutagenicity studies, a combined chronic toxicity & oncogenicity bioassay in rats & ecotoxicity studies.

Non-Human Toxicity Values:

>> LD50 Rat oral > 5000 mg/kg

12. Ecological Information

ICSC Environmental Data:

>> The substance is harmful to aquatic organisms. Avoid release to the environment because of its impact on the ozone layer.

13. Disposal Considerations

Spillage Disposal

>> Personal protection: self-contained breathing apparatus. Do NOT let this chemical enter the environment. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Carefully collect remainder. Then store and dispose of according to local regulations.

Disposal Methods

>> SRP: At the time of review, criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.

14. Transport Information

DOT

HCFC-141b

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15. Regulatory Information

TSCA Requirements:

This section provides information on requirements concerning this chemical under the Toxic Substances Control Act (TSCA) of 1976. TSCA provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides.

>> Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. 1,1-Dichloro-1-fluoroethane is included on this list.

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Ethane, 1,1-dichloro-1-fluoro

REACH Registered Substance

>> Status: Active Update: 22-04-2022 https://echa.europa.eu/registration-dossier/-/registered-dossier/14668

New Zealand EPA Inventory of Chemical Status

>> 1,1-Dichloro-1-fluoroethane: Does not have an individual approval but may be used under an appropriate group standard

16. Other Information

Toxic Combustion Products:

Toxic products (e.g., gases and vapors) produced from the combustion of this chemical.

>> ALL FLUOROCARBONS WILL UNDERGO THERMAL DECOMPOSITION WHEN EXPOSED TO FLAME OR RED-HOT METAL. DECOMPOSITION PRODUCTS OF THE CHLOROFLUOROCARBONS WILL INCLUDE HYDROFLUORIC & HYDROCHLORIC ACID ALONG WITH SMALLER AMOUNTS OF PHOSGENE & CARBONYL FLUORIDE. THE LAST COMPOUND IS VERY UNSTABLE TO HYDROLYSIS & QUICKLY CHANGES TO HYDROFLUORIC ACID & CARBON DIOXIDE IN THE PRESENCE OF MOISTURE. /FLUOROCARBONS/

"The information provided is believed to be accurate but is not comprehensive and should be used as a reference. It reflects our current knowledge and is intended for safety guidance related to the product. This document does not constitute a warranty of the product's properties. Ionz is not responsible for any damages resulting from handling or contact with the product incorrectly."