

SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-M-03702
Product Name	2,2-Dichloro-1,1,1-trifluoroethane
CAS No.	306-83-2
Category	Building Blocks
Synonyms	Not available
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email sales@clearsynth.com for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Not available

2.2 Label Elements

Signal Word: Warning

Not available

Hazard Statement(s)

Code	Statement
H336	Not available
H371	Not available
H373	Not available
H420	Not available
H320	Not available
H370	Not available
H372	Not available

H402	Not available
H412	Not available
H351	Not available
H362	Not available

Precautionary Statement(s)

Code	Statement
P260	Not available
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P316	Not available
P319	Get medical help if you feel unwell.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation
P502	Not available
P264+P265	Not available
P273	Not available
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present
P321	Specific treatment (see ... on this label).
P337+P317	If eye irritation persists: Get medical help.
P203	Not available
P263	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P318	Not available

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : 2,2-Dichloro-1,1,1-trifluoroethane
 CAS Number : 306-83-2
 Molecular Formula : Not available
 Molecular Weight : Not available
 Parent Chemical : Not available
 Synonyms : Not available
 Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures

- General advice: Remove person from exposure. Show this safety data sheet to the doctor in attendance.
- Inhalation: Move to fresh air. Keep at rest. If breathing is difficult, seek medical attention.
- Skin contact: Remove contaminated clothing and shoes. Wash skin with soap and water.
- Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.
- Ingestion: Rinse mouth. Do not induce vomiting. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Not available.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically. No data available.

SECTION 5: Firefighting measures

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

- Suitable extinguishing media: Use extinguishing measures appropriate to surrounding fire.
- Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture

- Thermal decomposition may produce hazardous fumes/gases.
- Specific hazardous combustion products: Not available.

5.3 Advice for firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Cool containers with water spray if exposed to fire.
- Prevent fire-fighting water from entering drains or waterways.

SECTION 6: Accidental release measures

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6.1 Personal precautions, protective equipment and emergency procedures

- Evacuate unnecessary personnel.
- Ensure adequate ventilation.

- Avoid breathing vapors/mist.
- Use appropriate personal protective equipment (see Section 8).

6.2 Environmental precautions

- Prevent further leakage or spillage if safe to do so.
- Avoid release to the environment. Prevent entry into drains, surface water, or soil.

6.3 Methods and material for containment and cleaning up

- Contain spill. Absorb with inert material (e.g., sand, earth, vermiculite).
- Collect in suitable, labeled containers for disposal.
- Clean contaminated area thoroughly.

6.4 Reference to other sections

- See Section 8 for personal protective equipment and Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Handle in accordance with good industrial hygiene and safety practice.
- Avoid breathing vapors/mist.
- Avoid contact with skin and eyes.
- Use only with adequate ventilation.
- Keep container tightly closed when not in use.

7.2 Conditions for safe storage, including any incompatibilities

- Store in a cool, well-ventilated place.
- Keep away from heat, sparks, open flames, and other ignition sources.
- Store in tightly closed, properly labeled container.
- Incompatible materials: Not available.

7.3 Specific end use(s)

- Building block / laboratory and industrial use. No data available for specific end uses.

SECTION 8: Exposure controls / personal protection

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- Occupational exposure limits: Not available.
- Biological limit values: Not available.

8.2 Exposure controls

- Appropriate engineering controls: Provide local exhaust ventilation or general dilution ventilation to maintain exposure below applicable limits.
- Personal protective equipment (PPE):
 - Eye/face protection: Safety glasses with side shields or chemical splash goggles.
 - Skin protection: Chemical-resistant gloves; protective clothing as appropriate.
 - Respiratory protection: If ventilation is inadequate, use appropriate respiratory protection.
- Hygiene measures: Wash hands after handling. Remove contaminated clothing and wash before reuse.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

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10.1 Reactivity

- No data available.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No data available.

10.4 Conditions to avoid

- Heat, flames, sparks, and other ignition sources. Other conditions: Not available.

10.5 Incompatible materials

- Not available.

10.6 Hazardous decomposition products

- Hazardous decomposition products: Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Acute toxicity: IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm(31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors. LC50 (rat) = 32,000 ppm/4h

- Skin corrosion/irritation: /LABORATORY ANIMALS: Acute Exposure/ Minimal dermal irritation with HCFC 123 was observed in rabbits. HCFC 123 (purity 99%) produced no skin irritation when 0.5 mL/6 sq cm was applied to the

clipped intact skin of four male and two female New Zealand rabbits for 4 hr.

- Serious eye damage/eye irritation: HCFC-123 is not a skin irritant It can cause eye irritation in liquid form.

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- Respiratory or skin sensitization: IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm(31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that

cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors. /LABORATORY ANIMALS: Acute Exposure/ In screening studies in beagle dogs exposed to high inhaled concentrations of hydrochlorofluorocarbon 123 followed by injection of a large dose of adrenalin, this fluorocarbon was capable of inducing cardiac sensitization. ...

- Germ cell mutagenicity: No data available.

- Carcinogenicity: IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm(31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors.

- Reproductive toxicity: IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm(31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea

pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors.

- STOT-single exposure: IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm(31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors.

- STOT-repeated exposure: IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high

cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm (31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors. /HUMAN EXPOSURE STUDIES/ Acute liver dysfunction has been reported among workers repeatedly exposed to 2,2-dichloro-1,1,1-trifluoroethane (HCFC-123), a substitute for trichlorofluoromethane. Causality between occupational exposure to 2,2-dichloro-1,1,1-trifluoroethane and liver dysfunction was examined. Levels of exposure to 2,2-dichloro-1,1,1-trifluoroethane were estimated retrospectively by reproducing working conditions and by a job record survey. Health surveillance, including liver function and subjective symptoms, was done when two workers first complained of ill health. The mean 2,2-dichloro-1,1,1-trifluoroethane concentration in air was more than 200 ppm with a peak concentration of about 1,000 ppm in a processing area where 2,2-dichloro-1,1,1-trifluoroethane was used. 2,2-dichloro-1,1,1-trifluoroethane of 1824 ppm was detected in the adjunct areas where 2,2-dichloro-1,1,1-trifluoroethane vapor was not generated. Workers (n=14) were then classified into high (n=5) and low (n=9) exposure groups according to the estimated exposure level, which was confirmed by determination of urinary trifluoroacetic acid. Mean serum AST and ALT levels were 236 IU/l and 476 IU/l among the high-exposed workers, and exceeded 500 IU/l in three workers. Various types of symptoms involving the central nervous system and digestive organs, and irritation of the mucous membrane, were also experienced. The degree and prevalence of these health effects were higher in the high exposure group, which indicates the exposure-effect and exposure-response relationships. The consistency and temporality of the relationship between 2,2-dichloro-1,1,1-trifluoroethane exposure and the observed health effects were also confirmed. We conclude that repeated exposure to high concentrations of 2,2-dichloro-1,1,1-trifluoroethane for no more than five weeks causes acute severe liver dysfunction with various symptoms in humans. Biological plausibility must be clarified to confirm the causality.

- Aspiration hazard: No data available.

Likely routes of exposure

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ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm (31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors.

Symptoms related to the physical, chemical and toxicological characteristics

- IDENTIFICATION: HCFC-123 is a synthetic, non-combustible, volatile liquid that is used as a refrigerant in commercial and industrial air conditioning installations, in gaseous fire extinguishants, as a foam blowing agent, and in metal and electronics cleaning. HUMAN EXPOSURE: Exposure to the general public to HCFC-123 is expected to be minimal. There is however, the potential for exposure during the manufacture of HCFC-123 and the manufacture and use of products containing this chemical. Limited information is available on the effects of HCFC-123 on humans. Cases of dizziness, headache and nausea have been reported following a single exposure to an unknown level of airborne HCFC-123, as well as cases of manifest or subclinical liver disease associated with repeated occupational exposures to HCFC-123 vapors at 5-1125 ppm (31.3-7030 mg/cu m) for 1-4 months. There was some evidence of clastogenic activity in human lymphocytes exposed to HCFC-123 at high cytotoxic concn in vitro. The most relevant critical effects for a single, brief exposure to this chemical are CNS depression and incr likelihood of ephinephrine induced cardiac arrhythmia. Liver lesions were noted in workers exposed to HCFC-123 levels above 5 ppm (31.3 mg/cu m) for 1-4 mo. ANIMAL STUDIES: The acute toxicity of HCFC-123 in laboratory animals is low. Inhalation for a few minutes to a few hours causes liver lesions in guinea pigs at 1000 ppm (6.25 g/cu m) and central nervous system (CNS) depression in all species examined at 5000 ppm (31.3 g/cu m) and ephinephrine induced cardiac arrhythmia in dogs at 20,000 ppm (125 g/cu m). In the rat and hamster, inhalation of more than 30,000 ppm (188 mg/cu m) for 4 hr causes severe CNS depression and death. HCFC-123 is not a skin irritant or sensitizer. It can cause eye irritation in liquid form. In repeated exposure inhalation toxicity studies lasting 2-39 wk in rats, guinea pigs, dogs and monkeys, the main target organs were the liver, the hypothalamic pituitary gonadal endocrine system, and the CNS. There was no evidence that HCFC-123 is teratogenic in laboratory animals or induces reproductive or fetal toxicity at levels of exposure lower than those that cause other systemic effects. Growth was retarded in neonatal rats and monkeys reared by dams exposed to HCFC-123. The main metabolite of HCFC-123, trifluoroacetic acid, was found in the milk of dams. In vitro and in vivo tests for genetic toxicity were negative. In a 2 year inhalation study in rats, there was an incr incidence of precancerous lesions and benign tumors in the liver, pancreas and testes, but no exposure related incr of malignant tumors.

SECTION 12: Ecological information

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12.1 Toxicity

- No data available.

12.2 Persistence and degradability

- No data available.

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in soil

- No data available.

12.5 Results of PBT and vPvB assessment

- Not available.

12.6 Endocrine disrupting properties

- No data available.

12.7 Other adverse effects

- No data available.

SECTION 13: Disposal considerations

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Do not discharge to drains or the environment.
- Contaminated packaging: Dispose of as unused product or according to local regulations.
- Waste code: Not available.

SECTION 14: Transport information

SECTION 14: Transport information

- UN number: Not available.
- UN proper shipping name: Not available.
- Transport hazard class(es): Not available.
- Packing group: Not available.
- Environmental hazards: Not available.
- Special precautions for user: Not available.
- Transport in bulk according to IMO instruments: Not available.

SECTION 15: Regulatory information

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- Not available.

15.2 Chemical safety assessment

- No data available.

SECTION 16: Other information

SECTION 16: Other information

- Product name: 2,2-Dichloro-1,1,1-trifluoroethane
- Catalog No.: CS-M-03702
- CAS No.: 306-83-2
- Supplier: Clearsynth Labs Ltd., Mumbai, India
- Emergency phone: +91-22-245045900

Disclaimer

- The information provided is believed to be accurate as of the date of preparation; however, no warranty is expressed or implied regarding its accuracy or completeness. The user is responsible for determining suitability for a particular purpose and for compliance with applicable laws and regulations.

Revision information

- Revision date: Not available.
- Version: Not available.

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