ChemicalBook

Chemical Safety Data Sheet MSDS / SDS

1,1-Dichloro-2,2,2-trifluoroethane

Revision Date:2026-06-27 Revision Number:1

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

Product identifier

Product name	: 1,1-Dichloro-2,2,2-trifluoroethane
CBnumber	: CB5777280
CAS	: 306-83-2
EINECS Number	: 206-190-3
Synonyms	: R123,HCFC-123

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	: For R&D use only. Not for medicinal, household or other use.
Uses advised against	: none

Company Identification

Company	: Chemicalbook
Address	: Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone	: 010-86108875

SECTION 2: Hazards identification

GHS Label elements, including precautionary statements

Symbol(GHS)

Signal word Danger

Precautionary statements

P311 Call a POISON CENTER or doctor/physician.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Hazard statements

H420 Harms public health and the environment by destroying ozone in the upper atmosphere

H370 Causes damage to organs

H225 Highly Flammable liquid and vapour

SECTION 3: Composition/information on ingredients

Substance

Product name	: 1,1-Dichloro-2,2,2-trifluoroethane
Synonyms	: R123,HCFC-123
CAS	: 306-83-2
EC number	: 206-190-3
MF	: C2HCl2F3
MW	: 152.93

SECTION 4: First aid measures

First Aid Measures

General advice

Consult a physician if necessary. Remove to fresh air.

Eye contact

Wash with plenty of water.

Skin Contact

Wash skin with soap and water.

Inhalation

Remove to fresh air If breathing is difficult, give oxygen If not breathing, give artificial respiration

Ingestion

Never give anything by mouth to an unconscious person. Clean mouth with water.

Most important symptoms and effects, both acute and delayed

Symptoms

No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Treat symptomatically.

SECTION 5: Firefighting measures

Suitable Extinguishing Media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical

Thermal decomposition can lead to release of toxic/corrosive gases and vapors. Extremely flammable.

Hazardous combustion products

Carbon oxides. Phosgene. Hydrogen fluoride.

Explosion data

Sensitivity to Mechanical Impact

No information available.

Sensitivity to Static Discharge

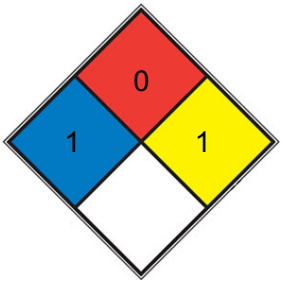
No information available.

Protective equipment and precautions for firefighters

Protective equipment and precautions for firefighters

As in any fire, wear self contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA 704



■	HEALTH	1	Exposure would cause irritation with only minor residual injury (e.g. acetone, sodium bromate, potassium chloride)
■	FIRE	0	Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)
■	REACT	1	Normally stable, but can become unstable at elevated temperatures and pressures (e.g. propene)
□	SPEC. HAZ.		

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions

Use personal protective equipment as required. Remove all sources of ignition.

Environmental precautions

Environmental precautions

See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Soak up with inert absorbent material.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling

Thermal decomposition can lead to release of toxic/corrosive gases and vapors.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Store at 4 °C.

Incompatible materials

None known based on information supplied.

SECTION 8: Exposure controls/personal protection

Control parameters

Exposure Guidelines

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Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Column 1	Column 2	Column 3	Column 4
Methanol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m3 (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m3 (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m3 (vacated) S*	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m3 STEL: 250 ppm STEL: 325 mg/m3

NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls

Showers

Eyewash stations

Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin and Body Protection

Wear protective gloves and protective clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

Physical State	liquid
Appearance	No information available
Odor	No information available
pH	No information available
Melting point/freezing point	No information available
Boiling point	64 °C
Flash point	11 °C CC (closed cup)
Liquid Density	1.5 g/cm3
Evaporation rate	No information available
Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	633.0±0.1 mmHg
Vapor density	No information available
Specific gravity	No information available
Water solubility	2.1g/L at 25℃
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Density and/or relative density	1,475 g/cm^3

SECTION 10: Stability and reactivity

Reactivity

Not applicable

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

No information available.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Strong oxidizing agents.

Hazardous Decomposition Products

Carbon oxides. Phosgene. Hydrogen fluoride.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation

Classified based on available data. For more details, see section 2.

Eye contact

Classified based on available data. For more details, see section 2.

Skin Contact

Classified based on available data. For more details, see section 2.

Ingestion

Classified based on available data. For more details, see section 2.

Information on toxicological effects

Symptoms

Classified based on available data. For more details, see section 2.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity

Classified based on available data. For more details, see section 2. Target Organ Effects Gastrointestinal tract (GI), Central nervous system, Eyes, Respiratory system, Skin.

Numerical measures of toxicity - Product Information

Unknown acute toxicity

Classified based on available data. For more details, see section 2

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

100 mg/kg

ATEmix (dermal)

300 mg/kg

ATEmix (inhalation-dust/mist)

0.5 mg/l

SECTION 12: Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Methanol 67-56-1	-	28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	-	-

0.127% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Methanol

28200: 96 h Pimephales - -

Pimephales promelas mg/L

LC50 static 13500

17600: 96 h Lepomis macrochirus

Oncorhynchus mykiss mg/L

LC50 flow-through 0.127% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability No information available. Bioaccumulation No information available. Mobility No information available.

Methanol

-0.77 67-56-1

SECTION 13: Disposal considerations

Disposal of wastes

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging

Do not reuse container.

US EPA Waste Number

D001

California Hazardous Waste Status

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Methanol 67-56-1	Toxic Ignitable

Methanol

Toxic

SECTION 14: Transport information

DOT

UN/ID no

UN1230

Hazard Class

3

Subsidiary class

6.1

Packing Group

II

Proper shipping name

Methanol Reportable Quantity (RQ) (Methanol: RQ (kg)= 2270.00)

Description

UN1230, Methanol, 3 (6.1), II

Emergency Response Guide Number

131

IMDG

UN/ID no

UN1230

Hazard Class

3

Subsidiary hazard class

6.1

Packing Group

II

Proper shipping name

Methanol

Description

UN1230, Methanol, 3 (6.1), II, (11°C c.c.)

Special Provisions

279

EmS-No

F-E, S-D

IATA

UN/ID no

UN1230

Hazard Class

3

Subsidiary hazard class

6.1

Packing Group

II

Proper shipping name

Methanol

Description

UN1230, Methanol, 3 (6.1), II

ERG Code

3L

SECTION 15: Regulatory information

International Inventories

All of the components in the product are on the following Inventory lists

TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC)

ENCS (Japan): Philippines (PICCS)

X - Listed

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Chemical name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Methanol	X	X	-	X	-	X	X	X	X	X
2,2-Dichloro-1,1,1-trifluoroet hane	X	X	-	X	-	X	X	X	X	X

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard

Yes

Chronic Health Hazard

Yes

Fire hazard

Yes

Sudden release of pressure hazard

No

Reactive hazard

No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name California Proposition 65
Chemical name
Methanol - 67-56-1

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Methanol 67-56-1	X	X	X

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

LD50: Lethal Dose 50%

LC50: Lethal Concentration 50%

EC50: Effective Concentration 50%

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

IMDG: International Maritime Dangerous Goods Code

IATA: International Air Transport Association

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

DOT: US Department of Transportation

NFPA: National Fire Protection Association

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety and Health Administration