

# SAFETY DATA SHEET

## OCCUPATIONAL SAFETY AND HEALTH(Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Version 1  
Product Name trifluoromethane

Issue Date 19-Oct-2015  
Revision date 19-Apr-2024

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### Product identifier

Product Name trifluoromethane  
Other Name R23

#### Other means of identification

Cas No. 75-46-7

#### Recommended use of the chemical and restrictions on use

Recommended Use For low temperature refrigerant and as raw materials for the fire extinguishing agent and manufacturing of tetrafluoroethylene  
Uses advised against No information available

#### Details of the supplier of the safety data sheet

Supplier SHANDONG SINOFLUORINE NEW MATERIAL CO.,LTD  
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Phone +86-531-67753001  
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**Emergency telephone number**  
+86-531-67753001

### 2. HAZARDS IDENTIFICATION

#### GHS Classification

Gases under pressure Liquefied gas

#### Label elements

Symbols/Pictograms



Signal word Warning  
Hazard Statements Contains gas under pressure; may explode if heated

Precautionary Statements  
Prevention None  
Response None  
Storage Protect from sunlight. Store in a well-ventilated place  
Disposal None

#### Hazards not otherwise classified (HNOC)

No information available

**Unknown acute toxicity**

No information available

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical nature**

Substance

Chemical Name	CAS No	Weight-%
Trifluoromethane	75-46-7	≥99

**4. FIRST AID MEASURES****Description of first aid measures**

General advice	In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Never give anything by mouth to an unconscious person.
Inhalation	Remove from exposure, lie down. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Artificial respiration and/or oxygen may be necessary. Call a physician or poison control center immediately.
Skin Contact	Take off contaminated clothing. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. If symptoms persist, call a physician.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Ingestion	Not an expected route of exposure.

**Most important symptoms and effects, both acute and delayed**

Unconsciousness. Symptoms may include tightness in the chest, flushing, headache, nausea, vomiting, respiratory depression, weakness, irregular heartbeat, abdominal pain, convulsions, and shock. Dizziness. Drowsiness.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****Extinguishing media**

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Alcohol resistant foam. Dry chemical, CO <sub>2</sub> , alcohol-resistant foam or water spray.
Unsuitable extinguishing media	No information available.

**Specific hazards arising from the chemical**

Sealed containers may rupture when heated  
Fluorides  
Carbon oxides (CO<sub>x</sub>)  
Thermal decomposition can lead to release of irritating and toxic gases and vapors  
Contains gas under pressure; may explode if heated

**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. Evacuate personnel to safe areas.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

Evacuate personnel to safe areas. Remove all sources of ignition. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Do not touch or walk through spilled material. Ensure adequate ventilation, especially in confined areas. Use personal protection recommended in Section 8. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up**

Prevent further leakage or spillage if safe to do so.

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment.

**Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Protect from direct sunlight. Keep/store only in original container.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH	Denmark	European Union
Trifluoromethane (CAS #: 75-46-7)	TWA: 2.5 mg/m <sup>3</sup> F	-	-	TWA: 2.5 mg/m <sup>3</sup>	-

Chemical Name	Latvia	France	Finland	Germany	Italy
Trifluoromethane (CAS #: 75-46-7)	TWA: 2 ppm TWA: 20 mg/m <sup>3</sup>	-	-	TWA: 1 mg/m <sup>3</sup> Skin	-

Chemical Name	Norway	United Kingdom	Australia	Austria	Belgium
Trifluoromethane (CAS #: 75-46-7)	-	-	2.5 mg/m <sup>3</sup>	-	-

**Appropriate engineering controls**

Ensure adequate ventilation, especially in confined areas  
Use with local exhaust ventilation

**Individual protection measures, such as personal protective equipment**

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.
Hand Protection	Wear protective gloves. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.
Eye/face protection	Wear safety glasses with side shields (or goggles). Face protection shield.
Skin and body protection	Wear suitable protective clothing.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

Appearance	Gas
Color	colorless
Odor	No
Odor Threshold	Not determined
pH	Not determined
Melting point/freezing point	-155 °C

Boiling point / boiling range	-84
Flash point	Not determined
Evaporation rate	Not determined
Flammability (solid, gas)	Not flammable
Flammability Limit in Air	Not determined
Vapor Pressure	2504(20°C)
Vapor density	2.43
Density	1.52 g/cm3
Relative density	1.52 (-80°C)
Bulk density	Not determined
Specific gravity	Not determined
Water solubility	838 mg/L, 25 °C, pH=7, 1 bar (abs)
Partition coefficient (LogPow)	0.84, 25 °C
Autoignition temperature	Not determined
Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic viscosity	Not determined
Explosive properties	Not an explosive
Oxidizing properties	Not determined

**Other information**

No information available

**10. STABILITY AND REACTIVITY****Reactivity**

No known effects under normal use conditions.

**Chemical stability**

Stable under recommended storage and handling conditions (see SECTION 7, handling and storage).

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

Heat, flames and sparks. Extremes of temperature and direct sunlight. Humid

**Incompatible materials**

Alkali metal alloys. Finely powdered metals.

**Hazardous Decomposition Products**

Halogenated hydrogen, carbon dioxide, carbon monoxide, fluorocarbon compounds, acyl halide.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Product Information**

Inhalation	No known effect based on information supplied.
Eye contact	No known effect based on information supplied.
Skin Contact	No known effect based on information supplied.
Ingestion	No known effect based on information supplied.

**Information on toxicological effects****Acute toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
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Trifluoromethane (CAS #: 75-46-7)	-	-	≥663,000mg/L
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**Skin corrosion/irritation**

Non-irritating to the skin

**Serious eye damage/eye irritation**

No eye irritation

**Sensitization**

No information available.

**Germ cell mutagenicity**

negative

**Carcinogenicity**

No information available

**Reproductive toxicity**

Not classified

**STOT - single exposure**

No information available

**STOT - repeated exposure**

No information available

**Aspiration hazard**

No information available

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants EC50	Fish LC50	Crustacea EC50
Trifluoromethane (CAS #: 75-46-7)	154.54mg/L :96 h Green Algae	633.26mg/L :96 h Pimephales promelas	323.05mg/L :48 h Daphnia magna

**Persistence and degradability**

biodegradable, but not ready biodegradable

**Bioaccumulative potential**

Material does not bioaccumulate

**Mobility in soil**

No information available

**Other adverse effects**

No information available

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations Empty containers should be taken for local recycling, recovery or waste disposal.

US EPA Waste Number

No information available

**California Hazardous Waste Codes**

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

**14. TRANSPORT INFORMATION****DOT**

UN/ID No. 1984  
Proper shipping name Trifluoromethane or Refrigerant gas R 23  
Hazard Class 2.2  
Packing Group none  
Special precautions No information available  
Marine pollutant Not applicable

**15. REGULATORY INFORMATION****International Inventories**

Component	AICS	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	TSCA
Trifluoromethane 75-46-7	X	X	X	X	X	X	X	X

"- " Not Listed

"X" Listed

**US Federal Regulations****SARA 313**

Not applicable

**SARA 311/312 Hazard Categories**

Not applicable

**CWA (Clean Water Act)**

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Trifluoromethane 75-46-7	-	X	-	-

**CERCLA**

Not applicable

**US State Regulations****California Proposition 65**

Not applicable

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Trifluoromethane 75-46-7	X	-	-

**16. OTHER INFORMATION**

**Revision Note**

Issue Date	19-Oct-2015
Revision date	19-Apr-2024
Revision Note	Not applicable

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**TWA** - TWA (time-weighted average)

**STEL** - STEL (Short Term Exposure Limit)

**Ceiling** - Maximum limit value

**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

**AICS** - Australian Inventory of Chemical Substances

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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