

Safety Data Sheet



1. Identification of the Substance/Mixture and the Supplier

Supplier : National Institute of Advanced Industrial Science and Technology (AIST)

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Identification of the Material : Certified Reference Material NMIJ CRM 4036-a
Dibromochloromethane

Recommended Use : This reference material can be used for calibration of analysis equipment as well as quality control of equipment and validation of analysis method/equipment. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS classification : Acute toxicity (Oral) : Class 4
Water environment toxicity : Class 3
(Acute)

GHS label element:



Signal word : Warning

Hazard and toxicity : Toxic if swallowed (Oral)
Toxic to aquatic organisms

Other hazard and toxicity information : Moderate poisoning by inhalation or dermal absorption. Adverse effects on liver, kidney, kidney epithelium and nervous system.
Exposure to the vapor causes headache, feeling of fatigue, nausea, vomiting, dizziness, and visual disorder, etc.
May develop some of the symptoms (liver, kidney, etc) in few hours or a few days later. Carcinogenic risk to humans unclassifiable.

Precautionary statement : [Preventive measures]
Avoid discharging to the environment
No eating, drinking or smoking when handling
Wash hands well after handling

[Response]

If swallowed : If feeling unwell, seek medical advice

Rinse the mouth well.

[Storage]

In a clean place protected from light, at the temperature of about -20 °C

[Disposal]

This material and its content should be disposed of in compliance with the laws and regulations of the national and local governments.

Hazardous and toxic properties not specified in the above are neither the object of the classification nor classifiable.

3. Composition/Information on Ingredients

Substance or mixture	: Single product
Chemical name	: Dibromochloromethane
Other name	: Chlorodibromomethane
Content	: Over 99.97 %
Chemical formula or structural formula	: ClCHBr_2
Molecular weight	: 208.28
Reference Number in Gazetted List in Japan	: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. : - Industrial Safety and Health Act : -
CAS number	: 124-48-1
Hazardous component	: Dibromochloromethane Stabilizer : 2-Methyl-2-Butene contained

4. First-aid Measures

If in eye	: Rinse with plenty of clean water. Seek medical advice
If on skin	: Rinse with plenty of clean water. Take off all the contaminated clothing and shoes, etc. Seek medical advice.
If inhaled	: Move to a fresh air, rest, keep warm. Seek medical advice
If swallowed	: Wash the mouth well with water. Drink saline water and induce vomiting. Keep warm and rest. Seek medical advice immediately
Anticipated acute and delayed symptoms	: Headache, feeling fatigue, nausea, vomiting, dizziness, visual disorder, etc.
Most important characteristics and symptoms	: -
Measures to be taken to protect the person applying emergency first-aid	: Use suitable protective equipment such as protective gloves, breathing apparatus, etc.

5. Fire-fighting Measures

Extinguishing media	: Non flammable at normal condition. Use general extinguishing agent for the surrounding environment
Specific hazards at the time of fire	: May form irritant or toxic fume (or gas) at the time of fire.
Specific extinguishing measures	: Remove any source of ignition from the seat of fire and extinguish using appropriate extinguishing agent. Transfer the movable container to a safe place promptly. If impossible to transfer, use water spray to cool the periphery.
Protecting fire-fighting personnel	: Extinguishing activities on windward side, avoid inhaling toxic gases. Use protective equipment such as air-breathing apparatus, etc.

6. Accidental Release Measures

Personal precautions	: Ready for a fire by keeping an appropriate extinguisher at hand.
Protective equipment and emergency procedure	: If released indoor, ventilate well until the treatment is completed. Use suitable protective equipment to protect the skin from the airborne droplets and avoid inhaling dust and gas.
Environmental precaution	: To prevent causing environmental impact, do not release the spilled material into rivers, etc. directly. Treat the contaminated waste water appropriately before discharging to the environment.
Recovery, neutralization	: Adsorb the spilled liquid to waste cloth or sand and soil, etc. and collect them in an empty airtight container.
Measures to prevent secondary accident	: Rope-off the leaked area and restrict access to the area to the authorized personnel only. Evacuate the people on the leeward and work on the windward side.

7. Handling and Storage

Handling	
Technological counter measures	: -
Local ventilation/general ventilation	: Use local exhaust ventilation system when handling indoor
Precautions for safe handling	: Do not treat the container roughly, no dropping, knocking down or dragging Prevent leakage, spillage or overflow that causes the fume to form. Keep the container airtight after using. Wash hands and face, etc. well and gargle after handling Do not enter sitting area, lounge or cafeteria with the contaminated gloves, and other protective equipment on Entering the handling area by the authorized persons only. Use suitable protective equipment to avoid inhaling, contact with

eyes, skin and the clothing

Storage

Appropriate condition : Store in a clean place protected from light at the temperature of about -20 °C

Material for safe packing : Glass

8. Exposure Controls/Personal Protection

Administrative levels

Not established

Occupational exposure limit

•ACGIH TLV-TWA : Not established

•Japan Society for : Not established

Occupational Health

Recommended

Reference Value

•OSHA PEL TWA : Not established

Facility engineering

Ventilation, exhaust : Local exhaust ventilation system or general ventilation system

Safety management, gas detection : Measuring instrument, detector

Storage precaution : Ventilate along the floor surface. Keep the container sealed. Keep away from combustible substance and reducing agent, strong oxidizers.

Protective equipment

Respiratory organ : Chemical cartridge respirator for organic gas

Hand : Impermeable protective gloves

Eyes : Safety goggles

Skin and body : Long sleeved protective clothing

9. Physical and Chemical Properties

•Appearance, etc. : Liquid

•Color : Clear and colorless

•Odor : Peculiar odor

•pH : No data

•Melting point : -22 °C

•Boiling point : Approximately 120 °C

•Flashing point : No data

•Explosive range : No data

•Vapor pressure : No data

•Relative vapor density(Air=1) : No data

•Specific gravity or bulk specific gravity : 2.40 g/ml (20 °C)

•Solubility : Miscible in ethanol and acetone, non soluble in water

- *n*-Octanol/water partition coefficient (Log Po/w) : 2.09
- Auto-ignition temperature : No data

10. Stability and Reactivity

◇Stability

- Light or humidity induces alteration of this material

◇Reactivity

- Decomposes when heated and forms toxic gases such as Cl⁻, Br⁻ etc.

◇Conditions to avoid

- Sunlight, heat, humidity

◇Hazardous decomposition product

- Carbon monoxide, halides

11. Toxicological Information

Acute toxicity	Oral rats	LD50 : 370 mg/kg (RTECS)
	Oral mice	LD50 : 800 mg/kg (RTECS)
Carcinogenicity	EPA Group C (Possible human carcinogen)	
	Group 3 (Unclassifiable as a human carcinogen) (IARC)。	

12. Ecological Information

Degradability, concentration

- No data available

Bioaccumulation

- No data available

Ecotoxicity

- Red killifish LC50 : 79 mg/L/96hr

13. Disposal Considerations

- Incinerate in an incinerator equipped with afterburner and scrubber.

14. Transport Information

UN number	: 2810
UN classification	: Class 6.1
Material name	: Other toxic substances, organic matter, liquid
Container grade	: PG III
ICAO/IATA	: Class 6.1 Grade III
Marine pollutant	: Applicable
Precautions	: Transfer with caution by avoiding direct sunlight and fire source at the

temperature about $-20\text{ }^{\circ}\text{C}$. Protect from leakage or spill due to fall or drop.

15. Regulatory Information

- ◇ Ship Safety Act
 - Other toxic substance
 - ◇ Law Relating to the Prevention of Marine Pollution and Maritime Disaster
 - Toxic liquid substance Category D substance, etc.
 - ◇ Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
 - Designated Class 1 specified chemical substance No.209
- ◎ **This SDS is originally prepared for the use of the material in Japan, thus the stated laws and regulations are stipulated and carried out in Japan. The use of the material in other countries should be referred to and by application of the relevant laws and regulations of the country in which the material will be used.**

16. Other Information

Others

The information in this document is not intended to be exhaustive and is based on currently available information and data. The measures given in this document are applicable only to normal handling conditions. When handling this reference material under special conditions etc., it is recommended to take safety measures appropriate to each specific application and context of use. This document is intended to provide information and not intended to guarantee anything in handling this reference material.
