

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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Identity of Substance/Mixture : Certified reference material NMIJ CRM 4020-a
 Bromodichloromethane
 Recommended Use of the Chemical and Restriction on Use : This CRM is primarily intended for use in calibrating analytical instruments. It is also intended for quality control of analytical instruments, and validation of analytical techniques and instruments. Do not use this reference material for other purposes than testing/research.

2. Hazards Identification

GHS Classification: Acute Toxicity(Oral) : Hazard Category 4
 Carcinogenicity : Hazard Category 2
 Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure) : Hazard Category 2 (Liver)
 Hazard Category 2 (kidney)
 Hazard Category 2 (thyroid gland)
 Water environment toxicity (Acute) : Hazard Category 3
 Water environment toxicity (Prolonged) : Hazard Category 3

GHS Label Element:



Signal Word: Warning
 Hazards Statement: Harmful if swallowed.
 Suspected of causing cancer
 May cause damage to organs (liver, kidney and thyroid gland) through prolonged or repeated exposure
 Harmful to aquatic life

May cause damage to aquatic life through prolonged or repeated exposure

Other hazard and:
toxicity

Precautionary

Statement:

[Precaution]

Do not handle until all safety precautions have been read and understood.

Avoid release to the environment.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

Use personal protective equipment if necessary.

Avoid breathing vapors.

[First-aid Action]

If swallowed: Rinse mouth. Get medical advice/attention.

If you feel unwell: Get medical advice/attention.

If exposed or concerned: Get medical advice/attention.

[Storage]

This CRM should be kept in locked and keyed.

Store this CRM in dark, cool (about -20 °C), clean and well ventilated place, and seal tightly after use.

[Disposal]

Incinerate contents/containers in an incinerator equipped with scrubber. When the above-mentioned treatments are not possible, entrust disposal of residual waste to a professional waste disposal company licensed by prefectural governor.

The other hazards than the above do not result in classification or are not classifiable.

3. Composition/Information on Ingredients

Substance/Mixture	:	Single substance
Chemical Identity	:	Bromodichloromethane
Synonym	:	-
Content	:	99.93 %
Chemical Formula	:	BrCHCl ₂
Molecular Weight	:	163.83
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	:	75-27-4
Hazardous Ingredient	:	Bromodichloromethane Stabilizer:2-methyl-2-butene

4. First-aid Measures

If in eyes : Rinse cautiously with clean water for several minutes. Remove

	contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If on skin	: Rinse cautiously with clean water. If irritation persists: Get medical advice/attention.
If inhaled	: Remove victim to fresh air and keep at rest and warm. Get medical advice/attention. If necessary, give artificial respiration and oxygen inhalation
If swallowed	: Rise mouth thoroughly with water. Induce vomiting by sticking finger down throat if possible. Get medical advice/attention immediately.
Expected Acute and Delayed Symptom	: -
Most Critical Characteristic and Symptom	: -
Protection of First-Aid Responder	: Use personal protective equipment.

5. Fire-fighting Measures

Extinguishing Media	: This material is incombustible. Use a fire extinguishing agent suitable for surrounding fire.
Fire-Specific Hazards	: In case of fire, may emit irritating or toxic fume (or gas).
Specific Fire-Fighting Method	: Eliminate ignition sources at the origin of a fire and put out fire by using extinguishing media. Remove movable containers promptly to a safe place. In the case of immovable containers, cool their surroundings with sprayed water.
Protection of Fire-Fighters	: Carry out fire-fighting from the windward in order to avoid breathing hazardous gas. Use personal protective equipment such as fireproof clothing, heat-resistant clothing, protective clothing, compressed air open-circuit self-contained breathing apparatus, compressed oxygen closed-circuit self-contained breathing apparatus, rubber gloves and rubber boots.

6. Accidental Release Measures

Personal Precaution Personal Protective	: Remove ignition source in the vicinity immediately. Prepare fire-fighting equipment for the possibility of fires.
Equipment and Emergency Procedures	: Ventilate the affected areas thoroughly, if it is in an indoor environment, until the clean-up operation is completed. Use appropriate personal protective equipment during the operation to avoid skin contact of splash etc. and inhalation of dust and gas.
Environmental Precautions	: Take precautions to prevent spillage from draining into rivers etc. to adversely impact the environment. Make it sure to appropriately treat contaminated wastewater in order to prevent untreated wastewater from being released into the surrounding

- Recovery and Neutralization : environment.
: Collect spillage in empty containers by getting it adsorbed to wiping cloth, rag or earth and sand, etc. Use waste clothes or wiping clothes and wipe off completely.
- Prevention of Secondary Disaster : Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

7. Handling and Storage

Handling

- Engineering Precautions : Store on a floor surface which can prevent permeation into underground.
Do not allow vapor generation.

- Local and General Ventilation : Use local ventilation system in indoor handling areas.

Ventilation

- Precautions for Safe Handling : Avoid rough handling such as turning over, dropping, giving a shock to or dragging containers.
Prevent spill, overflow and scattering, and avoid vapor generation.
Keep container tightly closed after using this reference material.
Wash hands, face etc. thoroughly and gargle after handling this reference material.
Do not bring gloves and other contaminated personal protective equipment into staff room.
Make a place handling this reference material a restricted area to keep out unauthorized people.
Use appropriate personal protective equipment to avoid inhalation and contact with eyes, skin and clothing.

Storage

- Appropriate Storage Conditions : Keep in locked and keyed. Store in a closed container in a clean light-shielded place at temperatures around $-20\text{ }^{\circ}\text{C}$.
Avoid storing together with oxidizers and strongly oxidizing substances.

- Safe Container Packaging Material : Glass

8. Exposure Controls/Personal Protection

Threshold Limit Value

Not specified

Permissible Concentration

- ACGIH TLV-TWA : Not specified
- Value recommended by Japan Society for Occupational Health : Not specified
- OSHA PEL TWA : Not specified

Engineering Controls

Ventilation/Exhaust	: Local ventilation system or General ventilation system
Safety Control/	: Measuring equipment, Detecting tube
Gas Detection	
Storage Precaution	: -
Personal Protective Equipment (PPE)	
Respiratory System	: Protective gas mask for organic vapors, Self-contained compressed air breathing apparatus.
Hands	: Impervious protective gloves
Eyes	: Eye protector with side plates (or Goggle type)
Skin and Body	: Protective clothing with long sleeves, protective face mask etc.
Hygiene Controls	
	Replace adsorbent of masks etc. regularly or before use.

9. Physical and Chemical Properties

• Appearance, etc.	: Liquid
• Color	: Colorless and clear
• Odor	: Specific odor
• pH	: No data
• Melting point	: -51.7 °C
• Boiling point	: About 90 °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	: 1.971(25 °C)
• Solubility	: Slightly soluble in water(0.6735 g/100 ml), Miscible with many organic solvents such as alcohol and ether
• <i>n</i> -Octanol/water partition coefficient (Log Po/w)	: No data
• Auto-ignition temperature	: No data

10. Stability and Reactivity

◇Stability	• Deteriorated by light
◇Reactivity	• No data
◇Conditions to Avoid	• Sunlight, Heat.
◇Hazardous Decomposition Products	• Carbon monoxides、 Halides

11. Toxicological Information

Acute Toxicity	Oral – Rat	LD50 : 430 mg/kg (RTECS)
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	Oral – Mouse	LD50 : 450 mg/kg (RTECS)
	Inhalation – Rat	TCLo : 100 ppm/4H (RTECS)
	Oral – Rat	LD50 : 916 mg/kg(IARC 52, 1992、 NTP TR 321, 1987、 ATSDR, 1989)
		651 mg/kg(IARC 52, 1992)
		430 mg/kg(ATSDR, 1989)
Carcinogenicity		Reasonably anticipated to be human carcinogen (NTP: Group b, IARC: Group 2B, Japan Society for Occupational Health: Group 2B, and EPA: Group B2)
		Classified as Group 2B in IARC (IARC 71 (1999)), Group 2B in Japan Society for Occupational Health (Recommendation of Japan Society for Occupational Health (2005)), Group B2 in EPA in 1993 (IRIS (2006)), and Group R in NTP (NTP RoC 11 th (2005)).
Specific Target Organ Toxicity/Systemic Toxicity (Repeated Exposure)		It is reported that, in the long-term oral administration test using rats and mice, effects on liver including fatty degeneration of hepatocyte as well as effects on kidney including renal tubular degeneration were observed at the doses within the range of the Guidance values for Category 2 (IARC 71 (1999), ATSDR (1989), IRIS (2006), NTP TR 321 (1987) and NTP DB (2006)). It is also reported that, in the oral administration test using mice, hyperplasia of thyroid gland follicular cells was observed at the doses within the range of the Guidance values for Category 2 (NTP TR 321 (1987) and IRIS (2006)).

12. Ecological Information

Degradability, bioaccumulation properties

- No data

Bioaccumulative Potential

- No data

Ecotoxicity

- Algae (Selenastrum): 72 hours ErC50 = 12mg/L (Ministry of Environment “Ecological Effect Test (1995)”)

13. Disposal Considerations

- Incinerate this reference material in an incinerator equipped with afterburner and scrubber.

14. Transport Information

UN Number : 2810
 UN Classification : Class 6.1 (Poisonous material)
 Shipping Name : Bromodichloromethane
 Packing Group : PG III

ICAO/IATA	: Class 6, III
Marine Pollutant	: Not specified
Precautions	: Transport this reference material carefully while keeping it away from direct sunlight and preventing accidental release due to falling, overturning, etc. at about -20 °C

15. Regulatory Information

◇Industrial Safety and Health Act

- Article 57-2 (Enforcement Order: Article 18) Hazardous substance whose name, etc. must be labeled.
- Article 57-2 (Enforcement Order: Article 18-2) Hazardous substance whose name, etc. must be notified No. No.501

◇Ship Safety Law

- Poisonous substance

◇Pollutant Release and Transfer Register (PRTR) Law

- Class 1 Designated Chemical Substance No. 381
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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.
