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SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.2
Creation Date: July 15, 2019
Revision Date: August 08, 2025

SECTION 1: Identification

1.1 GHS Product identifier

Product name Nitrobenzene-d5

1.2 Other means of identification

Product number LCEM500645
Other names -

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.
Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou
Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175
Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Carcinogenicity, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Warning
Hazard statement(s) H351 Suspected of causing cancer
Precautionary statement(s)
Prevention P203 Obtain, read and follow all safety instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
Response P318 IF exposed or concerned, get medical advice.
Storage P405 Store locked up.
Disposal P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Dichloromethane	Dichloromethane	75-09-2	200-838-9	100%
Nitrobenzene-d5	-	4165-60-0	-	2000.0 ppm

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer immediately for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

INHALATION: anesthetic effects, nausea and drunkenness. CONTACT WITH SKIN AND EYES: skin irritation, irritation of eyes and nose. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Chlorinated fluorocarbons (CFCs) and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use dry chemical, carbon dioxide, foam, or water spray. Use water spray to keep fire-exposed containers cool.

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Dissociation products generated in a fire may be irritating or toxic. (USCG, 1999)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: self-contained breathing apparatus. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO contact with incompatible substances. See Chemical Dangers. See Notes. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, strong bases, metals and food and feedstuffs. See Chemical Dangers. Cool. Well closed. Ventilation along the floor.Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Heat sensitive. Store under inert gas.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 50 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans); (skin).MAK: 180 mg/m3, 50 ppm; peak limitation category: II(2); skin absorption (H); carcinogen category: 5; pregnancy risk group: B.EU-OEL: 353 mg/m3, 100 ppm as TWA; 706 mg/m3, 200 ppm as STEL; (skin)

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Dichloromethane is a colorless liquid with a sweet, penetrating, ether-like odor. Noncombustible by if exposed to high temperatures may emit toxic chloride fumes. Vapors are narcotic in high concentrations. Used as a solvent and paint remover.
Colour	Colorless liquid [Note: A gas above 104 degrees F]
Odour	Sweet, pleasant odor, like chloroform
Melting point/freezing point	-97°C
Boiling point or initial boiling point and boiling range	39.8-40°C(lit.)
Flammability	Combustible Liquid
Lower and upper explosion limit/flammability limit	Lower flammable limit: 13% by volume; Upper flammable limit: 23% by volume
Flash point	39-40°C
Auto-ignition temperature	1223°F
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.437 mPa.s at 20 deg C
Solubility	10 to 50 mg/mL at 70° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 1.25
Vapour pressure	24.45 psi (55 °C)
Density and/or relative density	1.325g/mLat 25°C(lit.)
Relative vapour density	2.9 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

NIOSH considers methylene chloride a potential occupational carcinogen. [2300 ppm]
Decomposes on heating or on burning and on contact with hot surfaces. This produces toxic and corrosive fumes including hydrogen chloride (see ICSC 0163), phosgene (see ICSC 0007) and carbon monoxide (see ICSC 0023). Reacts violently with strong oxidants, strong bases and metals such as aluminium powder and magnesium powder. This generates fire and explosion hazard. Attacks some forms of plastic, rubber and coatings.

10.2 Chemical stability

In the absence of moisture at ordinary temp, dichloromethane is relatively stable when compared with its congeners, chloroform and carbon tetrachloride.

10.3 Possibility of hazardous reactions

It is flammable in the range of 12-19% in air but ignition is difficult.The vapour is heavier than air. As a result of flow, agitation, etc., electrostatic charges can be generated.DICHLOROMETHANE reacts vigorously with active metals such as lithium, sodium and potassium, and with strong bases such as potassium tert-butoxide. It is incompatible with strong oxidizers, strong caustics and chemically active metals such as aluminum or magnesium powders. The liquid will attack some forms of plastic, rubber and coatings. This compound reacts with sodium-potassium alloy, (potassium hydrogen + N-methyl-N-nitrosurea), nitrogen tetraoxide and liquid oxygen. It also reacts with titanium. On contact with water it corrodes iron, some stainless steels, copper and nickel. It is incompatible with alkali metals. It is incompatible with amines, zinc and alloys of aluminum, magnesium and zinc. This compound is liable to explode when mixed with dinitrogen pentaoxide or nitric acid. Mixtures of this compound in air with methanol vapor are flammable. (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Mixtures of /dinitrogen/ tetraoxide with ... dichloromethane ... are explosive when subjected to shock of 25 g TNT equiv or less.

10.6 Hazardous decomposition products

It can be decomposed by contact with hot surfaces and open flame, and then yield toxic fumes that are irritating and give warning of their presence. When heated to decomposition it emits highly toxic fumes of phosgene and /hydrogen chloride/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 1600 mg/kg
- Inhalation: LC50 Mouse inhalation 16000 ppm/7 hr plus 1 hr observation
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

NTP: Reasonably anticipated to be a human carcinogen

Reproductive toxicity

No studies were located regarding developmental or reproductive effects in humans from inhalation or oral exposure. Animal studies have demonstrated that methylene chloride crosses the placental barrier, and minor skeletal variations and lowered fetal body weights have been noted.

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. If swallowed the substance may cause vomiting and could result in aspiration pneumonitis. The substance may cause effects on the central nervous system, blood, liver, heart and lungs. Exposure could cause carbon monoxide poisoning. This may result in impaired functions. Exposure at high concentrations could cause lowering of consciousness and death. The effects may be delayed.

STOT-repeated exposure

The substance may have effects on the central nervous system. This substance is probably carcinogenic to humans.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Danio rerio (Zebra danio); Conditions: freshwater, flow through, 23 deg C, pH 8.15; Concentration: 254000 ug/L for 48 hr /formulation
- Toxicity to daphnia and other aquatic invertebrates: LC50; Species: Daphnia magna (Water flea) age < or =24 hr; Conditions: freshwater, static, 22 deg C, pH 7.4-9.4, dissolved oxygen 6.5-9.1 mg/L; Concentration: 310000 ug/L for 24 hr (95% confidence interval: 280000-340000 ug/L) /> or =80% purity
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Dichloromethane is reported to completely biodegrade under aerobic conditions with sewage seed or activated sludge between 6 hours to 7 days(1-5). Dichloromethane, present at 100 mg/L, reached 13% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test (OECD 301C Method)(6). Using a respirometer test method, 49% of initial dichloromethane (10 mg/L) biodegraded using an adapted activated sludge inoculum(7). Using a Sapromat respirometer test method, nearly 100% of initial dichloromethane (660 mg/L) biodegraded using an adapted sewage inoculum(7). Dichloromethane was degraded at a concentration of 3.3 mg/L in the aqueous phase of natural sediment with a corresponding half-life of 10.9 days(8). Dichloromethane, at 50 mg/L, had 0% degradation in a Manometric respirometry test over a 28-day incubation period(9).

12.3 Bioaccumulative potential

Using carp (Cyprinus carpio) which were exposed over a 6-week period, a BCF range of 2.0-40 was determined for dichloromethane at initial concentrations of 25 and 250 ug/L(1). According to a classification scheme(2), this BCF range suggests bioconcentration in aquatic organisms is low to moderate(SRC).

12.4 Mobility in soil

Dichloromethane has reported experimentally derived Koc values of 28(1), 36(2), 48 and 8(3). According to a classification scheme(4), these Koc values suggest that dichloromethane is expected to have very high mobility in soil. Dichloromethane is adsorbed strongly to peat moss, less strongly to clay, only slightly to dolomite limestone, and not at all to sand(5).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1593 (For reference only, please check.) IMDG: UN1593 (For reference only, please check.) IATA: UN1593 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: DICHLOROMETHANE (For reference only, please check.) IMDG: DICHLOROMETHANE (For reference only, please check.) IATA: DICHLOROMETHANE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.) IMDG: III (For reference only, please check.) IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Dichloromethane	Dichloromethane	75-09-2	200-838-9
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	August 08, 2025

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Do NOT use in the vicinity of a fire or a hot surface, or during welding.The odour warning when the exposure limit value is exceeded is insufficient.Depending on the degree of exposure, periodic medical examination is suggested.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.