



SAFETY DATA SHEET

SECTION 01 - IDENTIFICATION

Product Identifier	1,4-DIOXANE, 99.8% ANHYDROUS, <=25PPM BHT STABILIZER
Other identification (Chemical name, Commercial name, Synonymous)	1,4-DIETHYLENE DIOXIDE; DIETHYLENE ETHER; DIOXANE; DIOXANNE; Dioxanne-1,4; 1,4-Dioxane; P-DIOXANE; PARA-DIOXANE; ETHER DE DI(OXYETHYLENE)
Product code	DA-0106
Chemical formula	$C_4H_8O_2$
Molar weight	88.11
Recommended use and Restrictions on use	For laboratory, school, commercial or industrial use. Not for medical or household use. Do not use for medical, food or household purposes.
Supplier	LABORATOIRE MAT 610, rue Adanac Québec Québec G1C 7B7 418-660-8666 Mon-Fri 8h-16h www.labmat.com labmat@labmat.com
Emergency phone	418-660-8666 Mon-Fri 8h-16h CENTRE ANTI-POISON DU QUÉBEC 800-463-5060
Date SDS	2025-10-15

SECTION 02 - HAZARDS IDENTIFICATION

WHIMS CANADA

- Flammable liquids - category 2
- Serious eye damage/eye irritation - Eye irritation - category 2
- Specific target organ toxicity - Single exposure - category 3
- Carcinogenicity - category 2

PICTOGRAMS



Signal Word

DANGER

Hazards statements (H)

- Highly flammable liquid and vapour
- Causes serious eye irritation
- May cause respiratory irritation
- May cause cancer by inhalation

Precautionary statements (P)

- Keep away from heat, sparks, open flames, hot surfaces. — No smoking.
- Keep container tightly closed.
- Ground and bond container and receiving equipment.
- Use explosion-proof equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Wear protective gloves (Viton®, nitrile, butyl), protective clothing and eye and face protection.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse with water.
- In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
- Store in a well-ventilated place. Keep cool.
- Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If eye irritation persists get medical attention.
- Avoid breathing mists, gases, vapors and other fumes, or the product itself.
- Use only outdoors or in a well-ventilated area.
- IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or a doctor or if you feel unwell.
- Store in a well ventilated place. Keep container tightly closed.
- Store locked up.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- IF exposed or if you feel unwell: Call a POISON CENTER or a physician.

Other dangers

NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Significant; 4=Extreme)

Health 2
Fire 4
Reactivity 1
Special danger

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Component	No. CAS	% Weight
1,4-Dioxane	123-91-1	<=100

SECTION 04 - FIRST AID MEASURE

Eye contact	Wash eyes with large amounts of water for at least 15 minutes while holding eyelids apart to rinse eyes. If irritation persists, seek medical attention.
Skin contact	Wash skin with plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation persists, seek medical attention.
Inhalation	Move the unwell person to the fresh air. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	If the person is conscious, give water to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms and effects (acute and delayed)	Main symptoms of high exposure: Skin rash. Skin, eye and respiratory system irritation. Kidney damage. Liver damage. Breathing difficulties. Chemical burns of the skin, eyes and respiratory and digestive mucous membranes. Effects may be delayed. Ref. section 11.
Immediate medical attention and special treatment, if necessary	Treat according to symptoms. Show this sheet to the attending physician.

SECTION 05 - FIREFIGHTING MEASURES

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Combustion products	Hazardous combustion products formed under fire conditions: Carbon oxides.
Specific hazards of the dangerous product	Highly concentrated vapors in the air can ignite or even explode if exposed to an intense ignition source. Vapours can travel up to the ignition source and cause a backfire. Keep the product and empty containers away from heat and ignition sources. May react violently with incompatible products (Ref Section 10).
Special protective equipment and precautions for firefighters	Discard incompatible substances if this can be done without risk. Firefighters should be equipped with standard protective equipment, fireproof clothing, face mask, gloves, protective boots and, where appropriate, self-contained breathing apparatus.

SECTION 06 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency measures	Evacuate personnel to safe areas. Cut off all sources of ignition. Use anti-spark tools and anti-explosion equipment. Avoid the accumulation of charges electrostatic. When handling, wear appropriate safety equipment (reference Section 8 for protective equipment to be used). Ensure a good ventilation. Use NIOSH cartridge respiratory protection if necessary or for larger spills. Beware of vapors accumulating to form explosive concentrations.
Methods and materials for containment and cleaning up	Absorb the product with sand or vermiculite. Dilute residues with water, clean and rinse. Dispose of residues in a container for disposal of hazardous materials. Discharge into the environment must be avoided.

SECTION 07 - HANDLING AND STORAGE

Conditions for safe storage	Keep container tightly closed in a dry, well-ventilated place. Keep container tightly closed and store away from heat, moisture, and incompatible products (ref. section 10). Keep away from sources of ignition - No smoking. Take measures to prevent the accumulation of electrostatic charges. Protect from light and sunlight.
Methods of handling	Avoid contact with eyes, skin and clothing. Avoid ingestion and inhalation. Wear personal protective equipment (ref. section 8) when handling. Always ensure good ventilation. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Apply the usual standard hygiene rules: Wash your hands after use. Do not eat or drink during use.

SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

WORKPLACE CONTROL PARAMETERS

Components	CAS-No.	Control parameters	Value	Basis
		TWA	20ppm 72mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Substance may be readily absorbed through intact skin			
		TWA	20ppm 72mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	20ppm	Canada. British Columbia OEL
			20ppm	USA. ACGIH Threshold Limit Values (TLV)

Data origin	Sigma-Aldrich (Millipore Sigma)
Respiratory	If permitted levels are exceeded, use NIOSH cartridge respiratory protection, or an air-supplied respirator.
Gloves	Handle with protective gloves. Suggested material: Nitrile. Butyl. Viton® (Fluoroelastomer). Laminated material (PE/EVOH) The type, thickness and length of the glove must be chosen according to the use, the concentration of the product, as well as the duration of use. Replace gloves regularly for better protection.
Eyes	Safety goggles with safety shutters.
Shoes	Use safety shoes.
Clothes	Labcoat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Engineering control	Use fan. Have safety showers and eyewash stations in the workplace in case of an emergency and a ventilation system to maintain the level of concentrations in the air below the exposure limit values.

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Color	Colorless
Odour	No data
Odour threshold	Data not available
Melting point and freezing point	10 - 12 °C
Boiling point	100 - 102 °C
Flammability	Yes
Lower flammable / Explosive limit	2%V/V
Upper flammable / Explosive limit	22%V/V
Flash point	12 °C (54 °F) - closed cup
Auto-ignition temperature	190.55 °C (
Decomposition temperature	No data available
pH	6.0 - 8 at 500 g/l @ 20 °C
Kinematic viscosity	No data available
Solubility	Sol in water
Partition coefficient water/n-octanol	log Pow: -0.27
Vapour pressure	36 hPa (27 mmHg) @ 20 °C
Relative density	1.034 g/cm ³ at 25 °C
Vapour density	3.04 - (Air = 1.0)
Particle characteristics	Not applicable

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	Flammable product, may ignite with source of ignition, if temperature above flash point. May react violently with incompatible substances. May ignite on contact with oxidants if heat and oxygen are present in sufficient quantities. Possibility of peroxide formation.
Chemical stability	Sensitive to heat. Light sensitive. Contains the following stabilizer: BHT (Butylated hydroxytoluene). Unstable after the exhaustion of the inhibiting agent. Forms peroxides over time. Test for peroxide formation before distillation or evaporation.
Possibility of hazardous reactions	Flammable liquid and vapours. Vapours can form explosive mixtures with air when heated. May react violently with incompatible substances.
Conditions to avoid	Avoid the build-up of static electricity. Avoid contact with incompatible materials. Heat, flames and sparks. Exposure to light.
Incompatible materials	Oxydants. Strong acids. Halogens. Reducing agents.
Hazardous decomposition products	Carbon monoxide (CO), Carbon dioxide (CO ₂).

SECTION 11 - TOXICOLOGICAL INFORMATION

1,4-DIOXANE, 99.8% ANHYDROUS, <=25PPM BHT STABILIZER

Routes of exposure	Ingestion, inhalation, skin and eye contact.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	May cause severe eye irritation.
- Skin	May cause skin irritation.
- Inhalation	Headaches. Nausea and vomiting. Dizziness. Narcosis. Can lead to death.
Acute toxicity (Ingestion)	Headaches. Nausea and vomiting. Dizziness. Anesthesia. Possible death.
Chronic exposure effects / symptoms	Liver damage. Kidney damage. Is recognized as a possible carcinogen for humans (class 2B) by IARC. Nervous system damage. Dermatitis. Loss of appetite. Nausea. Abdominal pain.
DL50 (specify species and route of entry)	LD50 Oral - Rat - >5000mg/kg. LD50 Dermal - Rabbit - >5000mg/kg.
CL50 (specify species and route of entry)	LC50 Inhalation - Rat - 2 h - 46 000 mg/m3.

SECTION 12 - ECOLOGICAL INFORMATION

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Ecotoxicity	Toxicity to fish: LC50 - Pimephales promelas (Bighead Minnow) - 985 mg/l - 96 h. Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 8 450 mg/l - 24 h. Toxicity to algae: EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - > 500 mg/l - 72 h.
Persistence and degradability	Data not available.
Bioaccumulative potential	Accumulation is not expected.
Mobility in soil	Data not available.
Other adverse effects	Forms toxic mixtures in water, dilution measures notwithstanding. Avoid release to the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Method	Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company.
Contaminated Packaging	Dispose of as unused product.

SECTION 14 - TRANSPORT INFORMATION

UN Number	UN1165
UN Proper shipping name	DIOXANNE
Transport hazard class(es)	Liquides inflammables 3
Packing group	II
Limited quantity index	1 L
ERAP Index	-
Special precautions	-

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA

- Flammable liquids - category 2
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- Carcinogenicity - category 2

SECTION 16 - OTHER INFORMATION

CNESST: Commission des normes, de l'équité et de la santé et sécurité au travail

NIH: National institute of health (U.S. National Library of Medicine)

ECHA: Agence Européenne de Chimie

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

VECD: Valeur d'exposition courte durée

VEMP: Valeur d'exposition moyenne pondérée

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TLV : Threshold limit value

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

RSST: Règlement sur la santé et sécurité au travail (Québec)

INRS: l'Institut national de recherche et de sécurité pour la prévention des accidents du travail et des maladies professionnelles (France)

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. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. Laboratoire MAT Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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