SAFETY DATA SHEET

SECTION 01 - IDENTIFICATION

Product Identifier	2-NITROTOLUENE
Other identification (Chemical name, Commercial name, Synonymous)	o-Nitrotoluène; o-Nitrotoluol; ortho-Nitrotoluène; 1-Méthyl-2-nitrobenzène; 2-Méthyl-1-nitrobenzène; 2-Nitrotoluol
Product code	NR-0129
Chemical formula	$C_7H_7NO_2$
Molar weight	137.14
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	2025-11-27

SECTION 02 - HAZARDS IDENTIFICATION

WHIMS CANADA

- Acute toxicity - Oral - category 4
- Carcinogenicity - category 1B
- Germ cell mutagenicity - category 1B
- Reproductive toxicity - category 2

PICTOGRAMS

Signal Word

DANGER

Hazards statements (H)

- Harmful if swallowed
- May cause cancer
- May cause genetic defects
- Suspected of damaging fertility or the unborn child

Precautionary statements (P)

- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- IF SWALLOWED: Call a POISON CENTER or a physician if you feel unwell.
- Rinse mouth.
- Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company.
- Obtain special instructions before use.
- IF exposed or if you feel unwell: Call a POISON CENTER or a physician.
- Store locked up.
- Wear protective gloves (Viton®, nitrile, butyl), protective clothing and eye and face protection.

Other dangers

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

Health	3
Fire	1
Reactivity	1
Special danger	

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Component	No. CAS	% Weight
2-Nitrotulène	88-72-2	<=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: Methemoglobinemia (methemoglobin level too high in the blood). Liver damage. Headaches. Redness. Irritability. Dizziness. Dyspnoea. Cyanosis (blue to black coloring of the skin and nails). Nausea and vomiting. Increased pulse. Convulsions. Anemia. 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.
Unsuitable extinguishing media	No limitations on extinguishing agents.
Combustion products	Hazardous combustion products formed under fire conditions: Carbon oxides. Nitrogen oxides (NOx).
Specific hazards of the dangerous product	Containers exposed to fire or its heat may explode. Vapors are heavier than air and may spread along floors. May undergo explosive decomposition. 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	Cut off all sources of ignition. Avoid the accumulation of charges electrostatic. Vapours can accumulate in low-lying areas. Beware of vapors accumulating to form explosive concentrations. Evacuate personnel to safe areas. 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.
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	Store in a cool, dry, and well-ventilated place. Keep container tightly closed and store away from heat, moisture, and incompatible products (ref. section 10).
Methods of handling	Avoid contact withh eyes, skin and clothing. Avoid ingestion and inhalation. Wear personal protective equipment (ref. section 8) when handling. Always ensure good ventilation. Bottle in the glass only. NOTE: may attack some plastics, rubbers and coatings. 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
2-Nitrotoluène	88-72-2	TWA	2ppm 11mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Substance may be readily absorbed through intact skin			
		TWA	2ppm	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	Skin (percutaneous)			
		TWA	2ppm	Canada. Ontario Reg.833
		TWA	2ppm	Canada. British Columbia OEL
		TWA	2ppm	USA. ACGIH Threshold Limit Values (TLV)

Data origin	Alberta OELs. Ontario Regulation 833. CNESST Worksafebc.com Sigma-Aldrich (Millipore Sigma)
Respiratory	If work under the hood is not possible, or if the permissible levels are exceeded, use NIOSH cartridge respiratory protection, or an air-supplied respirator.
Gloves	Handle with protective gloves. Suggested material: Nitrile. Butyl. Viton® (Fluoroelastomer). 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	Yellow
Odour	Aromatic
Odour threshold	0.05ppm
Melting point and freezing point	-9 - -3°C
Boiling point	220-225°C
Flammability	Combustible
Lower flammable / Explosive limit	1.47% (V)
Upper flammable / Explosive limit	8.8% (V)
Flash point	95 °C - closed cup
Auto-ignition temperature	Data not available
Decomposition temperature	Data not available
pH	6-8
Kinematic viscosity	Data not available
Solubility	Slightly soluble in water (~0.65 g/l @20 °C)
Partition coefficient water/n-octanol	eau/ huile 0.005
Vapour pressure	0.1 hPa @ 20 °C
Relative density	1.163 g/ml @25°C
Vapour density	4.73 (air=1)
Particle characteristics	Not applicable

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	May form explosive mixtures with air on intense heating. May react violently with incompatible substances.
Chemical stability	Stable under recommended storage conditions. Sensitive to heat. At low temperature, this product is solid and crystallizes in two forms; the alpha form (T < -9.55 °C) and the beta form (T < -3.85 °C).
Possibility of hazardous reactions	May react violently with incompatible substances. Vapours can form explosive mixtures with air when heated.
Conditions to avoid	Avoid freezing. Avoid contact with incompatible materials and extreme temperatures. Heat, flames and sparks.
Incompatible materials	Strong oxidizers. Reducing agents. Strong bases. Strong acids. Alkali metals. Hydrogene. Tetranitromethane. Can form an explosive mixture with: Sulfuric acid.
Hazardous decomposition products	Carbon monoxide (CO), Carbon dioxide (CO2). Nitrogen oxides (NOx).

SECTION 11 - TOXICOLOGICAL INFORMATION

2-NITROTOLUENE

Routes of exposure	Ingestion, inhalation and skin contact.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	To our knowledge, the chemical, physical and toxicological properties have not been fully investigated.
- Skin	Redness. To our knowledge, the chemical, physical and toxicological properties have not been fully investigated.
- Inhalation	Headaches. Redness. Nausea and vomiting. To our knowledge, the chemical, physical and toxicological properties have not been fully investigated.
Acute toxicity (Ingestion)	Headaches. Disturbance of heart rhythm. Damage to the spleen. Damage to the liver. Damage to the kidneys. Nausea and vomiting. Redness. To our knowledge, the chemical, physical and toxicological properties have not been fully investigated.
Chronic exposure effects / symptoms	Methemoglobinemia (methemoglobin level too high in the blood). Target organs: Blood. Anemia. Is recognized as probably carcinogenic agent for humans (class 2A IARC) - Group 2A. Cyanosis (blue to black coloring of the skin and nails). Kidney damage. Spleen damages. Liver damage. Cardiovascular disorders. Confusion. Muscle weakness. Redness. Dyspnoea. Headache. Anoxia (insufficient oxygen supply to living organs and tissues). To our knowledge, the chemical, physical and toxicological properties have not been fully investigated.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 890mg/kg. LD50 Dermal - Rabbit - >5000mg/kg.
CL50 (specify species and route of entry)	LC50 Inhalation - Rat - 4 h - >1.5mg/L.

SECTION 12 - ECOLOGICAL INFORMATION

2-NITROTOLUENE

Ecotoxicity	Toxicity to fish: LC50 - Poecilia reticulata (guppy) - 30mg/L - 96h. Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 5.4 mg/l - 48 h.
Persistence and degradability	Data not available.
Bioaccumulative potential	Data not available.
Mobility in soil	Data not available.
Other adverse effects	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	1664
UN Proper shipping name	NITROTOLUÈNES LIQUIDES
Transport hazard class(es)	Matières toxiques 6.1
Packing group	II
Limited quantity index	0.1 L
ERAP Index	-
Special precautions	-

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA

- Acute toxicity - Oral - category 4
- Carcinogenicity - category 1B
- Germ cell mutagenicity - category 1B
- Reproductive toxicity - 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. Naltional Library of Medecine)
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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