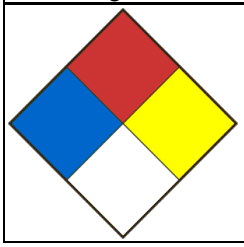
SAFETY DATA SHEET

SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

Product Identifier ETHYLEN GLYCOL MONOBUTYL ETHER		**Product Use** Laboratory use	
Chemical formula $CH_3(CH_2)_3OCH_2CH_2OH$		**Product code** BP-2334; BR-0149; BR-0198	**Molar weight** 118,18
Chemical name / Commercial name / Synonymous 2-BUTOXYÉTHANOL, BUTOXY-2-ÉTHANOL, ÉTHER MONOBUTYLIQUE DE L'ÉTHYLÈNE GLYCOL, BUTYL CELLOSOLVE, BUTOXYÉTHANOL, n-BUTOXYÉTHANOL, 2-BUTOXY-1-ETHANOL, BUTYL GLYCOL, BUTYL OXITOL, GLYCOL BUTYL ETHER, 3-OXA-1-HEPTANOL			
Supplier's name Laboratoire MAT		**Address-Street** 610, Adanac Street	
City Québec		**Province** Québec	
Postal code G1C 7B7	**Internet** www.labmat.com	**Phone number** 418-660-8666 Lun-Ven 8h-16h	
Emergency phone 418-660-8666 Lun-Ven 8h-16h		CENTRE ANTI-POISON DU QUÉBEC 800-463-5060	
Date SDS 11/4/2024	**SDS Prepared by** Laboratoire MAT	**E-Mail** labmat@labmat.com	

SECTION 02 - HAZARDS IDENTIFICATION

Classification WHIMS / GHS	Liquides inflammables category 4 Acute toxicity - Oral category 4 Acute toxicity - Inhalation category 4 Acute toxicity - Dermal category 4 Skin corrosion/irritation - Skin irritation category 2 Serious eye damage/ Eye irritation category 2A
Signal Word	WARNING
Hazards statements (H)	H302 Harmful if swallowed. H312 Harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H227 Combustible liquid.
Precautionary statements (P)	P210 Keep away from heat, sparks, open flames, hot surfaces. — No smoking. P261 Avoid breathing mists, gases, vapors and other fumes, or the product itself. P264 Wash thoroughly after handling. P270 Do no eat, drink or smoke when using this product. P280 Wear protective gloves, protective clothing and eye and face protection. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P321 Specific treatment (see section 4 of the SDS and on this label). P330 Rinse mouth. P332 + P313 If skin irritation occurs: Get medical advice/attention. P337 + P313 If eye irritation persists: Get medical advice/attention. P362 + P364 Take off contaminated clothing and wash it before reuse. P370 + P378 In case of fire: Use water spray or alcohol-resistant foam, or dry powder or carbon dioxide for extinction. P501 Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company. P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P403 Store in a well-ventilated place.
PICTOGRAMS	
Other dangers	NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Signifiant; 4=Extreme)
	**Health** 2 **Fire** 2 **Reactivity** 0 **Special danger**

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingrédients (Dénomination chimique / synonymes)	Numéro CAS et tout identificateur unique	Concentration (%P/P)
2-Butoxyéthanol	111-76-2	<=100

SECTION 04 - FIRST AID MEASURES

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 soiled 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	Do NOT induce vomiting. If the person is conscious, rinse the mouth with water. 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: Eyes irritation. Nose irritation. Headaches. Nausea and vomiting. Dizziness. 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

Flammability	No
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	Do not use a jet of water.
Hazardous combustion products	Hazardous combustion products formed under fire conditions: Carbon oxides. Peroxides. Aldehydes and ketones. Organic acids.
Specific hazards of the dangerous product	Closed containers exposed to fire can explode. Vapors may form explosive mixtures with air. Keep product and empty containers away from heat and sources of ignition. It can explode on contact with strong oxidizing materials. 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

Methods and materials for containment and cleaning up / Personnal precautions, protective equipment	Evacuate personnel to safe areas. Remove all sources of ignition. Absorb the product with sand or vermiculite. Dilute residues with water, clean and rinse. Ensure a good ventilation of the premises. Dispose of residues in a container for disposal of hazardous materials. When handling, wear suitable safety equipment. When handling, wear appropriate safety equipment. Use NIOSH cartridge respiratory protection for larger spills. (Reference Section 8 for protective equipment to be used.) Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 07 - HANDLING AND STORAGE

Conditions for safe storage	Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Reacts with air to form peroxides. Keep away from heat and sources of ignition. Protect from the sun's rays. Do not store in the containers made of aluminum, copper, copper alloys, or galvanized. Keep container tightly closed and store away from incompatible products (ref. section 10), heat, sparks, and open flame.
Methods of handling	Avoid contact with the skin, eyes and clothes. Avoid ingestion and inhalation. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. Do not use tools that produce sparks. Ground fixed equipment and containers used for decanting and equipment to prevent the accumulation of static electricity. DO NOT pressurize, cut, heat or weld containers. Spills of these organic products on hot insulators and eventually cause a spontaneous combustion. Wear personal protective equipment when handling. Always ensure good ventilation. 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-Butoxyethanol	111-76-2	TWA	20.000000 ppm 97.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		TWA	20.000000 ppm	Canada. British Columbia OEL
		TWAEV	20.000000 ppm 97.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	20.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)

Data source	Sigma-Aldrich.
Ventilation	Use fan.
Respiratory	If permitted levels are exceeded, use NIOSH cartridge respiratory protection, or an air-supplied respirator.
Gloves	Handle with gloves. Suggested material: Nitrile. Butyle. 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.
Clothing	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	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.
Appearance	Incolore à jaune clair.
Odour	Ether.
Odour threshold	0.1ppm
pH	Sans objet.
Melting point / Freezing point	-75°C
Initial boiling point	171°C
Boiling range	169-172.5°C
Flash point	67°C
Evaporation rate	0.06%
Flammability	No
Lower flammable / Explosive limit	1.1%
Upper flammable / Explosive limit	10.6%
Vapour pressure	< 1 mmHg à 20 °CmmHg
Vapour density	4.08 - (Air = 1.0)-
Relative density	0.902g/cm³
Solubility	Miscible avec l'eau en toutes proportions. Miscible avec l'huile minérale et la plupart des solvants organiques.
Partition coefficient water/n-octanol	log Pow: 0.81 à 25 °C-
Auto-ignition temperature	230°C
Decomposition temperature	Data not available
Viscosity	3.642 mm2/s à 20 °C.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	May react violently with incompatible substances. May ignite on contact with oxidants.
Chemical stability	Sensitive to light. May form explosive peroxides.
Possibility of hazardous reactions	May react violently with incompatible substances. May explode on contact with strong oxidants.
Conditions to avoid, including static discharge, shock or vibration	Heat, flames and sparks. Sensitive to the air. Light sensitive. Avoid extreme temperature variations. Do not distil until complete evaporation.
Incompatible materials	Oxidizing agents (nitric acid, perchloric acid, peroxides, chlorates and perchlorates), bases, heat and moisture. Metals. Aluminum. 2-Butoxyethanol can attack certain types of plastic, rubber or coatings.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. Toxic vapors of carbon monoxide and dioxide. Peroxides. Organic acids. Aldehydes and ketones

SECTION 11 - TOXICOLOGICAL INFORMATION

ETHYLEN GLYCOL MONOBUTYL ETHER

Routes of exposure	Ingestion, inhalation, skin and eyes.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	Irritation and may cause inflammation of the conjunctiva. May cause severe eye irritation. Can cause corneal damage.
- Skin	Irritation and dermatitis.
- Inhalation	Irritation of the mucous membranes and respiratory tract. Narcotic effects, kidney damage, cough, dyspnea, headache, dizziness, nausea and vomiting, acidosis, haemolysis, hemoglobinuria, hypotension, unconsciousness, coma and can lead to death.
Acute toxicity (Ingestion)	Irritation of the mucous membranes. Narcotic effects, liver and kidney damage, cramps, diarrhea, headache, dizziness, diaphoresis, nausea and vomiting, acidosis, hemolysis, hemoglobinuria, convulsions, hypotension, unconsciousness, coma and may result in death. Harmful if swallowed. Aspiration of the product into the lungs may cause chemical pneumonitis, hemorrhagic pulmonary edema resulting in rapid death from cardiac arrest, respiratory paralysis and asphyxiation.
Chronic exposure effects / symptoms	Group 3: unclassifiable agent for its carcinogenicity (Group 3 IARC). Burning sensation, dermatitis, conjunctivitis, narcotic effects, liver and kidney damage, chest pain, cough, dyspnea, laryngitis, headache, dizziness, asthenia, metallic taste in the mouth, acidosis, haemolysis, hemoglobinuria, loss weight loss and loss of appetite, nausea and vomiting. In humans, any exposure at a rate greater than 200 ppm can be expected to cause narcosis, lesions renal and hepatic, causes abnormal blood profile with erythropenia, reticulocytosis, granulocytosis, leukocytosis and causes fragility of erythrocytes and hematuria. Ingesting 2-butoxy ethanol results in a bitter taste that turns into a burning sensation and is followed by numbness of the tongue indicating paralysis of the sensory nerve endings., Central nervous system depression, Migraine, narcosis. Excessive exposure to ethylene glycol monobutyl ether may cause haemolysis, thereby impairing ability of the blood to carry oxygen. Repeated exposure may cause hemolysis of the blood cells red, possibly leading to kidney and liver damage.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 470 mg/kg. LD50 Dermal - Rabbit - 400 - 2000 mg/kg.
CL50 (specify species and route of entry)	CL50 inhalation - Rat 450 ppm - 4 h.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	EC50 - Daphnia magna (Water flea) - >1000 mg/l - 48 h CE50 - Algae freshwater - 1840 mg/L - 72 h. EC50 - Pseudokirchneriella subcapitata (green algae) - Inhibition of growth - 1840 mg/L - 72 h. LC50 - Oncorhynchus mykiss (rainbow trout) - Static test: 1474 mg/L - 96 h. CL50 - freshwater fish - 1490 - 2950 mg/L - 96 h. LC50 - Lepomis macrochirus - Static test: 1490 mg/L - 96 h. LC50 - Pimephales promelas (fathead minnow) - 2137 mg/L - 96 h.
Persistence and degradability	Biodegradability aerobic Result: 90.4 % - Readily biodegradable Method: OECD Test Guideline 301B Remarks: The 10 day time window criterion is not fulfilled. BOD ratio / DBOthéorique 88%.
Bioaccumulative potential	Data not available.
Mobility in soil	Soluble in water. Probable mobility in the environment due to its solubility in water.
Other adverse effects	Data not available.

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	N/R
UN Proper shipping name	
Transport hazard class(es)	
Packing group	
Limited quantity index	
ERAP Index	
Special precautions	

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA	Liquides inflammables category 4 Acute toxicity - Oral category 4 Acute toxicity - Inhalation category 4 Acute toxicity - Dermal category 4 Skin corrosion/irritation - Skin irritation category 2 Serious eye damage/ Eye irritation category 2A

SECTION 16 - OTHER INFORMATION

Further information

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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