


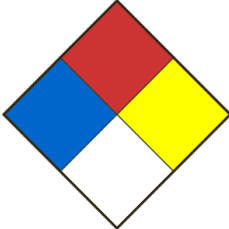


## SAFETY DATA SHEET

### SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

Product Identifier (+,-)-2-BUTANOL		Product Use Laboratory use	
Chemical formula C <sub>2</sub> H <sub>5</sub> CH(OH)CH <sub>3</sub>		Product code BR-0145	Molar weight 74,12
Chemical name / Commercial name / Synonymous ALCOOL BUTYLIQUE SECONDAIRE, SECONDARY BUTYL ALCOHOL, sec-BUTYL ALCOHOL, sec-BUTANOL, BUTANOL SECONDAIRE, BUTAN-2-OL, BUTYLENE HYDRATE, 2-HYDROXYBUTANE, METHYL ETHYL CARBINOL			
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 1/21/2025	SDS Prepared by Laboratoire MAT	E-Mail labmat@labmat.com	

## SECTION 02 - HAZARDS IDENTIFICATION

<b>Classification WHIMS / GHS</b>	Flammable liquids category 3 Serious eye damage/ Eye irritation category 2A Specific target organ toxicity - Single exposure category 3 Serious eye damage/eye irritation - Eye irritation category 2
<b>Signal Word</b>	WARNING
<b>Hazards statements (H)</b>	H226 Flammable liquid and vapor. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.
<b>Precautionary statements (P)</b>	P210 Keep away from heat, sparks, open flames, hot surfaces. — No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P261 Avoid breathing mists, gases, vapors and other fumes, or the product itself. P264 Wash thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves, protective clothing and eye and face protection. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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. P337 + P313 If eye irritation persists: Get medical advice/attention. P370 + P378 In case of fire: Use water spray or alcohol-resistant foam, or dry powder or carbon dioxide for extinction. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P501 Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company.
<b>PICTOGRAMS</b>	
<b>Other dangers</b>	NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Signifiant; 4=Extreme)
	<b>Health</b> 2 <b>Fire</b> 3 <b>Reactivity</b> 0 <b>Special danger</b>

## SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingrédients (Dénomination chimique / synonymes)	Numéro CAS et tout identificateur unique	Concentration (%P/P)
-2-butanol	78-92-2	<=100

## SECTION 04 - FIRST AID MEASURES

<b>Eye contact</b>	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.
<b>Skin contact</b>	Wash skin with plenty of water for at least 15 minutes. Remove soiled clothing. If irritation persists, seek medical attention.
<b>Inhalation</b>	Move the unwell person to the fresh air. If breathing is difficult, give oxygen. Consult a physician.
<b>Ingestion</b>	If the person is conscious, drink water and induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.
<b>Most important symptoms and effects (acute and delayed)</b>	Main symptoms of high exposure: Irritation of the respiratory system. Eyes irritation. Headaches. Vertigo. Drowsiness. Redness. Skin lesions. Ref. section 11.
<b>Immediate medical attention and special treatment, if necessary</b>	Treat according to symptoms. Show this sheet to the attending physician.

## SECTION 05 - FIREFIGHTING MEASURES

<b>Flammability</b>	Yes
<b>Suitable extinguishing media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable extinguishing media</b>	Data not available.
<b>Hazardous combustion products</b>	Hazardous combustion products formed under fire conditions: Carbon oxides.
<b>Specific hazards of the dangerous product</b>	Steam can travel a great distance and ignite on sources of ignition such as heaters, electrical appliances, cigarettes, sparks, etc. Containers exposed to fire may explode. Vapors may form explosive mixtures with air. 2-butanol can react violently to contact with hypochlorinated acid, nitrogen tetroxide, chlorine, chromium trioxide and phosphorus trichloride. May react violently with incompatible products (Ref Section 10).
<b>Special protective equipment and precautions for firefighters</b>	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

<b>Methods and materials for containment and cleaning up / Personal precautions, protective equipment</b>	Evacuate personnel to safe areas. Cut off all sources of ignition. Avoid the accumulation of charges electrostatic. 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. Vapors can accumulate in low areas. Beware of vapors accumulating to form explosive concentrations.
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## SECTION 07 - HANDLING AND STORAGE

<b>Conditions for safe storage</b>	Keep container tightly closed in a dry and well-ventilated place. Protect from the sun's rays. Store in cool place. Keep container tightly closed and store away from incompatible products (ref. section 10), heat, sparks, and open flame.
<b>Methods of handling</b>	Avoid contact with the skin, eyes and clothes. Avoid inhalation of vapor or mist. 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. 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	No.-CAS	Control parameters	Value	Basis
-2-BUTANOL	78-92-2	TWA	303 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	303.000000 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	100.000000 mg/m <sup>3</sup>	Canada. British Columbia OEL
		TWAEV	303.000000 mg/m <sup>3</sup>	Canada. Ontario OELs
		STEV	454.000000 mg/m <sup>3</sup>	Canada. Ontario OELs
		VEMP	303 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		VEMP	303.000000 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		LMPT	100.000000 ppm	Ontario table : Occupational exposure limits under the occupational health and safety act.
		LECT	150.000000 pm	Ontario table : Occupational exposure limits under the occupational health and safety act.
		TWA	100 ppm	Canada. British Columbia OEL

<b>Data source</b>	Sigma-Aldrich.
<b>Ventilation</b>	Fan.
<b>Respiratory</b>	If permitted levels are exceeded, use NIOSH cartridge respiratory protection, or an air-supplied respirator.
<b>Gloves</b>	Handle with gloves. Suggested material: Viton® (Fluoroelastomer). Nitrile. Butyle. 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.
<b>Eyes</b>	Safety goggles with safety shutters.
<b>Shoes</b>	Use safety shoes.
<b>Clothing</b>	Labcoat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<b>Engineering control</b>	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.
Odour	Sucré.
Odour threshold	43.3ppm
pH	Donnée non disponible..
Melting point / Freezing point	-115°C
Initial boiling point	98°C
Boiling range	Data not available
Flash point	24°C
Evaporation rate	1.3%
Flammability	Yes
Lower flammable / Explosive limit	1.7%
Upper flammable / Explosive limit	9.8%
Vapour pressure	18.3 mmHg @ 25°C.
Vapour density	2.56 (Air=1.0).
Relative density	0.808 g/cm <sup>3</sup> à 25°C.
Solubility	Très soluble dans l'eau. Miscible avec l'alcool et l'éther.
Partition coefficient water/n-octanol	log Pow : 0.146.
Auto-ignition temperature	406°C
Decomposition temperature	Data not available
Viscosity	4.2 mPa.s à 20°C.

## 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.
Chemical stability	Stable under recommended storage conditions. Sensitive to light.
Possibility of hazardous reactions	Stable under normal conditions. Vapors may form explosive mixture with air. May react violently with incompatible substances.
Conditions to avoid, including static discharge, shock or vibration	Heat, flames and sparks. Exposure to light. Exposure to the air.
Incompatible materials	Acids. Strong oxidizing agents. Peroxides. Halogens. Aluminum, nitrogen tetroxide, chlorine, chromium trioxide, phosphorus trichloride, heat and moisture. Hypochlorous acid.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. Carbon oxides.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### (+,-)-2-BUTANOL

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.
- Skin	Irritation and dermatitis.
- Inhalation	Irritation of the mucous membranes and respiratory tract. Narcotic effects, cough, dyspnea, headache, dizziness, drowsiness and confusion. Heavy inhalation can also lead to loss of consciousness.
Acute toxicity (Ingestion)	Irritation of the mucous membranes. Narcotic effects, gastrointestinal disorders, cramps, diarrhea, sore throat headache, dizziness, drowsiness, confusion, blurred vision, tremors, nausea and vomiting, seizures, loss of consciousness and respiratory collapse leading to death.
Chronic exposure effects / symptoms	Burning sensation, dermatitis, conjunctivitis, narcotic effects, chest pain, cough, dyspnoea, laryngitis, headache, dizziness, drowsiness, confusion, irritability, blurred vision, watery vision, tremors, fatigue, nausea and Vomiting.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 2193 mg/kg LD50 Dermal - Rat - > 2 000 mg/kg.
CL50 (specify species and route of entry)	CL50 inhalation - Rat 48500 mg/m <sup>3</sup> - 4 h

## SECTION 12 - ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	LC50 - Pimephales promelas (fathead minnow) - 3670 mg/L - 96 h LC50 - Leuciscus idus (Golden orfe) - 3520-3540 mg/L - 48h - static test EC50 - Daphnia magna (Water flea) - 4227 mg/L - 48 h
<b>Persistence and degradability</b>	Aerobic Biodegradability - Exposure Time 5 D Result: 86% - Easily biodegradable.
<b>Bioaccumulative potential</b>	Data not available.
<b>Mobility in soil</b>	Probable mobility due to its solubility in water.
<b>Other adverse effects</b>	Data not available.

## SECTION 13 - DISPOSAL CONSIDERATIONS

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

## SECTION 14 - TRANSPORT INFORMATION

<b>UN Number</b>	1120
<b>UN Proper shipping name</b>	BUTANOLS
<b>Transport hazard class(es)</b>	3 Flammable liquids
<b>Packing group</b>	III
<b>Limited quantity index</b>	5L
<b>ERAP Index</b>	-
<b>Special precautions</b>	-

## SECTION 15 - REGULATORY INFORMATION

<b>WHIMS CANADA</b>	Flammable liquids category 3 Serious eye damage/ Eye irritation category 2A Specific target organ toxicity - Single exposure category 3 Serious eye damage/eye irritation - Eye irritation category 2
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## 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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