



Centre Anti-Poison pour le Québec: (800) 463-5060

Tél. (Qc): (418) 660-8666 / 800-890-8666


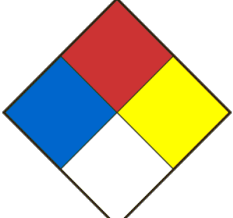
Fax. (Qc): (418) 660-8998

## SAFETY DATA SHEET

### SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

|                                                                                                                                                                                                                                    |                                    |                                             |                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|---------------------------------------------|-------------------------------------------|
| Product Identifier<br>TETRAHYDROFURAN                                                                                                                                                                                              |                                    | Product Use<br>Laboratory use               |                                           |
| Chemical formula<br>C <sub>4</sub> H <sub>8</sub> O                                                                                                                                                                                |                                    | Product code<br>TH-0101                     | Molar weight<br>72,11                     |
| Chemical name / Commercial name / Synonymous<br>TETRAHYDROFURANE, TÉTRAHYDROFURANNE, DIETHYLENE OXIDE, TETRAMETHYLENE OXIDE, THF, 1,4-EPOXYBUTANE, BUTYLENE OXIDE, CYCLOTETRAMETHYLENE OXIDE, FURANIDINE, OXACYCLOPENTANE, OXOLANE |                                    |                                             |                                           |
| Supplier's name<br>Laboratoire MAT                                                                                                                                                                                                 |                                    | Address-Street<br>610, Adanac Street        |                                           |
| City<br>Québec                                                                                                                                                                                                                     |                                    | Province<br>Québec                          |                                           |
| Postal code<br>G1C 7B7                                                                                                                                                                                                             | Internet<br>www.labmat.com         | Phone number<br>418-660-8666 / 800-890-8666 |                                           |
| Emergency phone                                                                                                                                                                                                                    | CANUTEC: 613-996-6666              |                                             | CENTRE ANTI-POISON DU QUÉBEC 800-463-5060 |
| Date SDS<br>2/3/2020                                                                                                                                                                                                               | SDS Prepared by<br>Laboratoire MAT | E-Mail<br>labmat@labmat.com                 |                                           |

## SECTION 02 - HAZARDS IDENTIFICATION

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Classification WHIMS / GHS</b>                                                   | <p>Flammable liquids category 2</p> <p>Acute toxicity - Oral category 4</p> <p>Serious eye damage/ Eye irritation category 2A</p> <p>Carcinogenicity category 2</p> <p>Specific target organ toxicity - Single exposure category 3</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Signal Word</b>                                                                  | <p>DANGER</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Hazards statements (H)</b>                                                       | <p>H225 Highly flammable liquid and vapour.</p> <p>H302 Harmful if swallowed.</p> <p>H319 Causes serious eye irritation.</p> <p>H335 May cause respiratory irritation.</p> <p>H351 Suspected of causing cancer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Precautionary statements (P)</b>                                                 | <p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P240 Ground/bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical/ventilating/lighting equipment.</p> <p>P242 Use only non-sparking tools.</p> <p>P243 Take precautionary measures against static discharge.</p> <p>P261 Avoid breathing dust / fume / gas / mist / vapours / spray.</p> <p>P264 Wash the areas of the body that have been in contact with the product after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P308 + P313 IF exposed or concerned: Get medical advice/attention.</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P330 Rinse mouth.</p> <p>P337 + P313 If eye irritation persists: Get medical advice/attention.</p> <p>P370 + P378 In case of fire: Use water spray or alcohol-resistant foam, or dry powder or carbon dioxide for extinction.</p> <p>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403 + P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/container in accordance with local / regional / national / international regulations or contact a specialist waste disposal company.</p> <p>P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.</p> |
| <b>PICTOGRAMS</b>                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Other dangers</b>                                                                | <p>NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Signifiant; 4=Extreme)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|  | <p><b>Health</b> 2</p> <p><b>Fire</b> 4</p> <p><b>Reactivity</b> 1</p> <p><b>Special danger</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

| Ingrédients (Dénomination chimique / synonymes) | Numéro CAS et tout identificateur unique | Concentration (%) |
|-------------------------------------------------|------------------------------------------|-------------------|
| Tétrahydrofuran                                 | 109-99-9                                 | <=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>                                                       | 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. |
| <b>Most important symptoms and effects (acute and delayed)</b>         | Ref. section 11.                                                                                                                                            |
| <b>Immediate medical attention and special treatment, if necessary</b> | In case of medical consultation, keep this sheet available.                                                                                                 |
| <b>General advice</b>                                                  | Show this safety data sheet to the doctor in attendance.                                                                                                    |

## SECTION 05 - FIREFIGHTING MEASURES

|                                                                      |                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Flammability</b>                                                  | Yes                                                                                                                                                                                                                                                       |
| <b>Ignition conditions</b>                                           | Keep away from heat/sparks/open flame/hot surface.                                                                                                                                                                                                        |
| <b>Suitable extinguishing media</b>                                  | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.                                                                                                                                                                                  |
| <b>Unsuitable extinguishing media</b>                                | Do not use a jet of water.                                                                                                                                                                                                                                |
| <b>Hazardous combustion / decomposition products</b>                 | Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NO <sub>x</sub> ). - Carbon Oxides. Peroxides.                                                                                                                          |
| <b>Special fire and explosion hazards</b>                            | May react violently with incompatible products (Ref Section 10). May form explosive peroxide.                                                                                                                                                             |
| <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 / Personnel precautions, protective equipment</b> | Evacuate personnel to safe areas. Eliminate all sources of inflammation. 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. Use breathing apparatus if necessary. Ensure adequate ventilation. Avoid breathing vapours, mist or gas. Vapours can accumulate in low areas. Discharge into the environment must be avoided. Do not let product enter drains. |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

### Workplace control parameters

| Components      | CAS-No.                                                                                                                                                                                | Value | Control parameters                 | Basis                                                               |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------|---------------------------------------------------------------------|
| Tetrahydrofuran | 109-99-9                                                                                                                                                                               | TWA   | 50.000000 ppm<br>147.000000 mg/m3  | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) |
| Remarks         | Substance may be readily absorbed through intact skin                                                                                                                                  |       |                                    |                                                                     |
|                 |                                                                                                                                                                                        | STEL  | 100.000000 ppm<br>295.000000 mg/m3 | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) |
|                 | Substance may be readily absorbed through intact skin                                                                                                                                  |       |                                    |                                                                     |
|                 |                                                                                                                                                                                        | TWA   | 50.000000 ppm                      | Canada. British Columbia OEL                                        |
|                 | Contributes significantly to the overall exposure by the skin route.                                                                                                                   |       |                                    |                                                                     |
|                 |                                                                                                                                                                                        | STEL  | 100.000000 ppm                     | Canada. British Columbia OEL                                        |
|                 | Contributes significantly to the overall exposure by the skin route.                                                                                                                   |       |                                    |                                                                     |
|                 | TWAEV<br>100.000000 ppm<br>300.000000 mg/m3<br>Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |       |                                    |                                                                     |
|                 |                                                                                                                                                                                        | TWA   | 50.000000 ppm                      | USA. ACGIH Threshold Limit Values (TLV)                             |
|                 |                                                                                                                                                                                        | STEL  | 100.000000 ppm                     | USA. ACGIH Threshold Limit Values (TLV)                             |

|                            |                                                                                                                                                                                                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Data source</b>         | Sigma-Aldrich.                                                                                                                                                                                 |
| <b>Ventilation</b>         | Fan.                                                                                                                                                                                           |
| <b>Respiratory</b>         | If the permissible levels are exceeded, use a mechanical filter / cartridge against NIOSH vapors or a respirator with air supply.                                                              |
| <b>Gloves</b>              | Handle with gloves.                                                                                                                                                                            |
| <b>Eyes</b>                | Safety goggles with safety shutters.                                                                                                                                                           |
| <b>Shoes</b>               | 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                                 | Distillats de pétrole.                                                    |
| Odour threshold                       | 2.5ppm                                                                    |
| pH                                    | 7-8 20% solution aqueuse.                                                 |
| Melting point / Freezing point        | -108.44°C à 760.00 mmHg.                                                  |
| Initial boiling point                 | 65-67°C                                                                   |
| Boiling range                         | Data not available                                                        |
| Flash point                           | -21.2°C                                                                   |
| Evaporation rate                      | 14.5%                                                                     |
| Flammability                          | Yes                                                                       |
| Lower flammable / Explosive limit     | 1.8%                                                                      |
| Upper flammable / Explosive limit     | 11.8%                                                                     |
| Vapour pressure                       | 17 kPa à 20°C.                                                            |
| Vapour density                        | 2.5 à 25 °C (77 °F) - (Air = 1.0)-                                        |
| Relative density                      | 0.889g/cm <sup>3</sup>                                                    |
| Solubility                            | Miscible avec l'eau, l'alcool, les cétones, l'éther et les hydrocarbures. |
| Partition coefficient water/n-octanol | log Pow : 0.46-                                                           |
| Auto-ignition temperature             | 215°C                                                                     |
| Decomposition temperature             | Data not available                                                        |
| Viscosity                             | 0.53 cP à 20°C                                                            |

## SECTION 10 - STABILITY AND REACTIVITY

|                                                                                           |                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reactivity                                                                                | Non-reactive under normal conditions.                                                                                                                                          |
| Chemical stability                                                                        | Stable under recommended storage conditions. Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year. Hygroscopic. |
| Possibility of hazardous reactions                                                        | Stable under normal conditions. Vapours may form explosive mixture with air.                                                                                                   |
| Conditions of instability (Including sensitivity to shock / static discharge / vibration) | Heat, flames and sparks. Avoid excessive heat and humidity. Exposure to moist air or water.                                                                                    |
| Incompatible material                                                                     | Strong oxidizing agents. Acids.                                                                                                                                                |
| Hazardous decomposition products                                                          | Hazardous decomposition products formed under fire conditions. Carbon oxides. Peroxides. Nitrogen oxides (NO <sub>x</sub> ).                                                   |

## SECTION 11 - TOXICOLOGICAL INFORMATION

### TETRAHYDROFURAN

|                                           |                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Routes of exposure                        | Ingestion, inhalation, skin and eyes.                                                                                                                                                                                                                                                                      |
| Acute exposition effects / symptoms:      | By exposure route below.                                                                                                                                                                                                                                                                                   |
| - Eyes                                    | Severe irritation and burning may cause permanent eye damage.                                                                                                                                                                                                                                              |
| - Skin                                    | Irritation and dermatitis.                                                                                                                                                                                                                                                                                 |
| - Inhalation                              | Irritation of the mucous membranes and respiratory tract. Drowsiness and loss of consciousness.                                                                                                                                                                                                            |
| Acute toxicity (Ingestion)                | Irritation of the mucous membranes. Narcotic effects, liver and kidney damage, gastrointestinal disorders, cramps, diarrhea, headache, paleness, nausea and vomiting, dizziness, drowsiness, tremor, salivation, seizures, hypotension, respiratory collapse, unconsciousness, coma and can lead to death. |
| Chronic exposure effects / symptoms       | Is recognized as a possible carcinogen for humans (class 2B) by IARC. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Causes central nervous system depression.                                                                                                       |
| DL50 (specify species and route of entry) | LD50 Oral - Rat - 1 650 mg/kg LD50 Dermal - Rat - > 2000 mg/kg                                                                                                                                                                                                                                             |
| CL50 (specify species and route of entry) | CL50 inhalation - Rat 180 mg/L - 1 h 53.9 mg/L - 4 h                                                                                                                                                                                                                                                       |

## SECTION 12 - ECOLOGICAL INFORMATION

|                                      |                                                                                            |
|--------------------------------------|--------------------------------------------------------------------------------------------|
| <b>Ecotoxicity</b>                   | EC50 - Daphnia (water flea) - 3485 mg/L - 48 h CL50 Pimephales promelas : 2160 mg/L - 96 h |
| <b>Persistence and degradability</b> | Persistence is unlikely based on information available.                                    |
| <b>Bioaccumulative potential</b>     | No bioaccumulation is to be expected (log Pow <= 4).                                       |
| <b>Mobility in soil</b>              | Probable mobility in the environment 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 / container in accordance with local / regional / national / international 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>                  | 2056                |
| <b>UN Proper shipping name</b>    | TÉTRAHYDROFURANNE   |
| <b>Transport hazard class(es)</b> | 3 Flammable liquids |
| <b>Packing group</b>              | II                  |
| <b>Limited quantity index</b>     | 1L                  |
| <b>ERAP Index</b>                 | -                   |
| <b>Special precautions</b>        | -                   |

## SECTION 15 - REGULATORY INFORMATION

|                     |                                                                                                                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>WHIMS CANADA</b> | Flammable liquids category 2<br>Acute toxicity - Oral category 4<br>Serious eye damage/ Eye irritation category 2A<br>Carcinogenicity category 2<br>Specific target organ toxicity - Single exposure category 3 |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 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.

Last Update: 2/3/2020