

SAFETY DATA SHEET

Classified in accordance with Health Canada Hazardous Products Regulations (SOR/2015-17)

1. Identification

Product identifier: Toluene/Xylene Mixture**Other means of identification****Common name(s),** TOLUENE/XYLENE, T/X, C6-C8 Aromatics, TX Mix**synonym(s):****SDS number:** NOVA-0008**Recommended use and restriction on use****Recommended use:** Gasoline blends, industrial feedstock.**Restrictions on use:** All uses other than the identified.**Manufacturer/Importer/Supplier/Distributor Information****Manufacturer**

Company Name: NOVA Chemicals
Address: P.O. Box 2518, Station M
Calgary, Alberta, Canada T2P 5C6
Telephone: Product Information: 1-412-490-4063
SDS Information Email: msdsemail@novachem.com

Emergency telephone number:

1-800-561-6682, 1-403-314-8767 (NOVA Chemicals) (24 hours)

Canada: 1-800-579-7421 (NCEC) (24 hours)

2. Hazard(s) identification

Hazard Classification According to Hazardous Products Regulations**Physical Hazards**

| | |
|--|------------|
| Flammable liquids | Category 2 |
| Physical Hazards Not Otherwise Classified (PHNOC) - Static-accumulating flammable liquid | Category 1 |

Health Hazards

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| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 2 |
| Germ Cell Mutagenicity | Category 1B |
| Carcinogenicity | Category 1A |
| Reproductive toxicity | Category 2 |
| Specific Target Organ Toxicity - Single Exposure | Category 3 |
| Specific Target Organ Toxicity - Repeated Exposure | Category 1 |
| Specific Target Organ Toxicity - Repeated Exposure | Category 2 |
| Aspiration Hazard | Category 1 |

Environmental Hazards

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| Acute hazards to the aquatic environment | Category 2 |
| Chronic hazards to the aquatic environment | Category 2 |

Label Elements**Hazard Symbol:****Signal Word:**

Danger

Hazard Statement:

Highly flammable liquid and vapour.
Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.
Sparks may ignite liquid and vapour.
May cause flash fire or explosion.
Causes skin irritation.
Causes serious eye irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause drowsiness or dizziness.
Causes damage to organs through prolonged or repeated exposure.
(Blood)
May cause damage to organs through prolonged or repeated exposure.
(Central nervous system)
(Hearing organs)
May be fatal if swallowed and enters airways.
Toxic to aquatic life with long lasting effects.

Precautionary Statements:**Prevention:**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. These alone may be insufficient to remove static electricity. Do not breathe dust/fume/gas/mist/vapours/spray. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face protection. Avoid release to the environment.

Response:

IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water [or shower]. If skin irritation occurs: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. In case of fire: Use dry chemical, foam, carbon dioxide (CO₂), water spray or fog to extinguish. Collect spillage.

- Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep cool.
- Disposal:** Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

| Chemical Identity | Common name and synonyms | CAS number | Content in percent (%)* |
|--------------------|----------------------------|------------|-------------------------|
| Toluene | Methylbenzene | 108-88-3 | 69 - 85% |
| Benzene, ethyl- | Ethylbenzene, Phenylethane | 100-41-4 | 9 - 23% |
| Benzene, dimethyl- | Xylene (mixed isomers) | 1330-20-7 | 5 - 10% |
| Benzene | Benzol | 71-43-2 | 0 - 1.0% |

* All concentrations are percent by weight.

Additional Information: This product is considered hazardous by the Hazardous Products Regulations, 2015.

4. First-aid measures

- Inhalation:** IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell.
- Ingestion:** IF SWALLOWED: Immediately call a POISON CENTRE/doctor. Do NOT induce vomiting.
- Skin Contact:** IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water [or shower]. If skin irritation occurs: Get medical advice/attention.
- Eye contact:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: Skin irritation. Eye irritation. Drowsiness. Dizziness. Blood disorders. Auditory system disorders including hearing impairment.

Indication of immediate medical attention and special treatment needed

Treatment: Ensure thorough eye and skin decontamination. Treat unconsciousness, nausea, low blood pressure, seizures, and cardiac rhythm disturbances in the conventional manner. Aspiration of this product during induced emesis can result in lung injury. If evacuation of stomach contents is considered necessary, use the method least likely to cause aspiration, such as gastric lavage after protecting the airway. Observe hospitalized patients for delayed chemical pneumonia, acute kidney failure, altered level of consciousness, and cardiac rhythm disturbances. In the event of an unanticipated acute exposure to toluene, an end-of-shift urine sample for toluene can be used to estimate same-day inhalation and dermal exposures.

5. Fire-fighting measures

General Fire Hazards: Highly flammable liquid and vapour. Vapours are heavier than air and may travel to a source of ignition and flash back. Closed containers may rupture violently when heated. Material will float and can be re-ignited on surface of water. If tank, rail car or tank truck is involved in fire, ISOLATE for 800 metres (1/2 mile) in all directions; also, consider initial evacuation for 800 metres (1/2 mile) in all directions. Vapours may form explosive mixture with air. Keep containers away from source of heat or fire. This product may be a static accumulator which can form an ignitable vapour-air mixture in a storage tank.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use dry chemical, foam, carbon dioxide (CO₂), water spray or fog to extinguish. Use water to cool fire-exposed containers and to protect personnel.

Unsuitable extinguishing media: Do not use straight/direct streams as this may actually spread flames.

Specific hazards arising from the chemical: Upon combustion, this product emits carbon monoxide, carbon dioxide, low molecular weight hydrocarbons.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: Keep upwind. Keep unauthorized personnel away. Move containers from fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Immediately withdraw in case of fire and container venting or heat discolouration of a container. Avoid inhaling any smoke and combustion materials. Remove and isolate contaminated clothing and shoes. Cool containers with flooding quantities of water until well after the fire is out. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Reference Emergency Response Guidebook No. 130 for additional details and instructions.

Special protective equipment for fire-fighters: Wear positive pressure self-contained breathing apparatus (SCBA). Structural fire-fighters' protective clothing provides thermal protection **but only limited chemical protection**.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment. Isolate area. Keep unauthorized personnel away. Alert stand-by emergency and fire-fighting personnel. Monitor surrounding area for buildup of flammable concentrations in air.

Methods and material for containment and cleaning up: Do not touch or walk through spilled material. Eliminate all ignition sources if safe to do so. As an immediate precautionary measure, isolate spill or leak area for at least 50 metres (164 feet) in all directions. Keep upwind. Keep out of low areas. Stop leak if safe to do so. Contain discharge by booming on water or diking on ground. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.

Small Spills: Remove liquid material with non-sparking approved pumps, skimmers or vacuum equipment. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Use non-sparking tools.

Large Spills: Consider downwind evacuation for 300 metres (1000 feet). Spills on water will volatilize rapidly, making containment or recovery

difficult. Dike far ahead of larger spills for later disposal. A vapour-suppressing foam may be used to reduce vapours. Remove pooled liquid material with approved, non-sparking pumps, skimmers or vacuum equipment. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Soil remediation may be required.

7. Handling and storage

Precautions for safe handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. These alone may be insufficient to remove static electricity. For additional information on equipment bonding and grounding, refer to the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity". For additional information on storing and handling flammable liquids, refer to the National Fire Protection Association (NFPA) 30, "Flammable and Combustible Liquids Code". Take special precautions when cold cutting or breaking into lines, or when cleaning and disposing of empty containers. Parts and equipment should be steam cleaned prior to maintenance procedures. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Keep away from incompatible materials such as oxidizing agents and acids. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face protection. In case of inadequate ventilation, use respiratory protection. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities: Storage area should be clearly identified, well-illuminated and clear of obstruction. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep cool. Only allow access to authorized persons. Store and handle in properly designed pressure vessels and equipment. Store and use away from heat, sparks, open flame, or any other ignition source. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Have appropriate extinguishing capability in storage area (e.g. sprinkler system, portable fire extinguishers) and flammable gas detectors. Keep absorbents for leaks and spills readily available. Consider use of external floating roof tanks or flame arrestors. Inspect vents during winter conditions for vapour ice buildup. Storage tanks should be above ground and diked to hold entire contents. Store away from incompatible materials. Store according to applicable regulations and standards for flammable materials.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

| Chemical Identity | type | Exposure Limit Values | | Source |
|-------------------|------|-----------------------|-----------------------|---|
| | | | | |
| Toluene | TWA | 50 ppm | 188 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| Toluene | TWA | 20 ppm | | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| Toluene | TWA | 20 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |

| | | | | |
|--------------------|------|---------|-----------------------|---|
| Toluene | TWA | 50 ppm | 188 mg/m ³ | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| Toluene | TWA | 20 ppm | | US. ACGIH Threshold Limit Values, as amended |
| Toluene | STEL | 150 ppm | 560 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Toluene | REL | 100 ppm | 375 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Toluene | IDLH | 500 ppm | | US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended |
| Benzene, ethyl- | STEL | 125 ppm | 543 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| | TWA | 100 ppm | 434 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| Benzene, ethyl- | TWA | 20 ppm | | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| Benzene, ethyl- | TWA | 20 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |
| Benzene, ethyl- | TWA | 20 ppm | | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| Benzene, ethyl- | TWA | 20 ppm | | US. ACGIH Threshold Limit Values, as amended |
| Benzene, ethyl- | REL | 100 ppm | 435 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Benzene, ethyl- | STEL | 125 ppm | 545 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Benzene, ethyl- | IDLH | 800 ppm | | US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended |
| Benzene, dimethyl- | STEL | 150 ppm | 651 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| | TWA | 100 ppm | 434 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| Benzene, dimethyl- | TWA | 100 ppm | | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| | STEL | 150 ppm | | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| Benzene, dimethyl- | TWA | 100 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |
| | STEL | 150 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |
| Benzene, dimethyl- | STEL | 150 ppm | 651 mg/m ³ | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| | TWA | 100 ppm | 434 mg/m ³ | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| Benzene, dimethyl- | STEL | 150 ppm | 655 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Benzene, dimethyl- | REL | 100 ppm | 435 mg/m ³ | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Benzene, dimethyl- | TWA | 20 ppm | | US. ACGIH Threshold Limit Values, as amended |
| Benzene | STEL | 2.5 ppm | 8 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| | TWA | 0.5 ppm | 1.6 mg/m ³ | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |

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|---------|------|---------|------------|---|
| Benzene | STEL | 2.5 ppm | | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| | TWA | 0.5 ppm | | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| Benzene | STEL | 2.5 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |
| | TWA | 0.5 ppm | | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |
| Benzene | TWA | 1 ppm | 3 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| | STEL | 5 ppm | 15.5 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| Benzene | STEL | 2.5 ppm | | US. ACGIH Threshold Limit Values, as amended |
| | TWA | 0.5 ppm | | US. ACGIH Threshold Limit Values, as amended |
| Benzene | REL | 0.1 ppm | | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Benzene | STEL | 1 ppm | | US. NIOSH: Pocket Guide to Chemical Hazards, as amended |
| Benzene | IDLH | 500 ppm | | US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended |

Biological Limit Values

| Chemical Identity | Exposure Limit Values | Source |
|---|--------------------------------|-----------|
| Toluene (toluene: Sampling time: Prior to last shift of work week.) | 0.02 mg/l (Blood) | ACGIH BEI |
| Toluene (o-Cresol, with hydrolysis: Sampling time: End of shift.) | 0.3 mg/g (Creatinine in urine) | ACGIH BEI |
| Toluene (toluene: Sampling time: End of shift.) | 0.03 mg/l (Urine) | ACGIH BEI |
| Benzene, ethyl- (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.) | 0.15 g/g (Creatinine in urine) | ACGIH BEI |
| Benzene, dimethyl- (Methylhippuric acids: Sampling time: End of shift.) | 1.5 g/g (Creatinine in urine) | ACGIH BEI |
| Benzene (S-Phenylmercapturic acid: Sampling time: End of shift.) | 25 µg/g (Creatinine in urine) | ACGIH BEI |
| Benzene (t,t-Muconic acid: Sampling time: End of shift.) | 500 µg/g (Creatinine in urine) | ACGIH BEI |

Exposure guidelines

| Chemical Identity | Notations | Source |
|-------------------|-----------------------------------|---|
| Toluene | Can be absorbed through the skin. | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| | Can be absorbed through the skin. | Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended |
| Benzene | Can be absorbed through the skin. | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended |
| | Can be absorbed through the skin. | Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended |
| | Can be absorbed through the skin. | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended |

Appropriate Engineering Controls

Engineering methods to reduce hazardous exposure are preferred controls. Methods include mechanical ventilation (dilution and local exhaust) process or personal enclosure, remote and automated operation, control of process conditions, leak detection and repair systems, and other process modifications. Ensure all exhaust ventilation systems are discharged to outdoors, away from air intakes and ignition sources. Supply sufficient replacement air to make up for air removed by exhaust systems. Administrative (procedure) controls and use of personal protective equipment may also be required.

Individual protection measures, such as personal protective equipment

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| General information: | Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard potential and ensure adequate protection. |
| Eye/face protection: | Safety glasses. Chemical goggles are recommended if splashing is possible or to prevent eye irritation from vapours. |
| Skin Protection | |
| Hand Protection: | Chemical resistant gloves. |
| Skin and Body Protection: | Wear appropriate clothing to prevent any possibility of skin contact. Wear work clothes with long sleeves and pants. If splashing or contact with liquid material is possible, consider the need for an impervious overcoat. Fire resistant (i.e., Nomex) or natural fibre clothing (i.e., cotton or wool) is recommended. Synthetic clothing can generate static electricity and is not recommended where a flammable vapour release may occur. Wear chemical-resistant safety footwear with good traction to prevent slipping. Static Dissipative (SD) rated footwear is also recommended. |
| Respiratory Protection: | Appropriate NIOSH approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4, or self-contained breathing apparatus should be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators or IDLH levels. |
| Hygiene measures: | Use effective control measures and PPE to maintain worker exposure to concentrations that are below these limits. Ensure that eyewash stations and safety showers are in close proximity to work locations. |

9. Physical and chemical properties**Appearance**

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| Physical state: | liquid |
| Form: | liquid |
| Colour: | Colourless |
| Odour: | Aromatic |
| Odour Threshold: | 2 - 5 ppm |
| pH: | not applicable |
| Melting point/freezing point: | -80 °C (-112 °F) |
| Initial boiling point and boiling range: | 110 - 140 °C (230 - 284 °F) |
| Flash Point: | 4 °C (39 °F) |
| Evaporation rate: | Medium at 20 °C (68 °F) (n-butyl acetate=1) |
| Flammability (solid, gas): | not applicable |
| Upper/lower limit on flammability or explosive limits | |

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|---|--|
| Flammability limit - upper (%): | 7 %(V) (toluene) |
| Flammability limit - lower(%): | 1 %(V) (toluene) |
| Vapour pressure: | 4.8 kPa (37.8 °C (100.0 °F)) |
| Vapour density: | 3.18 (Air=1) (toluene) (calculated) |
| Density: | 871.0 - 871.5 kg/m ³ |
| Relative density: | 0.871 - 0.8715 (15 °C (59 °F)) (Water=1) |
| Solubility(ies) | |
| Solubility in water: | Insoluble in water |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | 3.12 - 3.20 |
| Auto-ignition temperature: | 450 - 500 °C (842 - 932 °F) |
| Decomposition temperature: | No data available. |
| Viscosity: | 2 mm ² /s (40 °C (104 °F)), estimated |

10. Stability and reactivity

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| Reactivity: | Contact with incompatible materials. Sources of ignition. Exposure to heat. |
| Chemical Stability: | Material is stable under normal conditions. |
| Possibility of Hazardous Reactions: | No data available. |
| Conditions to Avoid: | Exposure to open flame or excessive heat can cause fire or explosion. Keep away from heat, sparks and open flame. |
| Incompatible Materials: | Oxidizing agents, acids. |
| Hazardous Decomposition Products: | Upon decomposition, this product emits carbon monoxide, carbon dioxide, low molecular weight hydrocarbons. |

11. Toxicological information

Information on likely routes of exposure

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| Inhalation: | Inhalation of this product may result in central nervous system effects including headache. Excessive inhalation of this material may also cause damage to blood systems and possibly cancer (leukemia). Minute amounts aspirated into the lungs during ingestion or vomiting may cause severe pulmonary injury. May cause hearing impairment. |
| Ingestion: | Minute amounts aspirated into the lungs during ingestion or vomiting may cause severe pulmonary injury. Ingestion of this product may result in vomiting, nausea, abdominal pain and central nervous system effects including headache, sleepiness, dizziness, nausea, loss of coordination. Ingestion may also cause blood disorders and cancer. May cause hearing impairment. |
| Skin Contact: | Causes skin irritation. |
| Eye contact: | Causes serious eye irritation. |

Symptoms related to the physical, chemical and toxicological characteristics

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|--------------------|---|
| Inhalation: | Central nervous system effects including headache. |
| Ingestion: | Vomiting, nausea, abdominal pain and central nervous system effects including headache. |

Skin Contact: Skin irritation.
Eye contact: Serious eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: Not classified for acute toxicity based on available data.

Dermal
Product: Not classified for acute toxicity based on available data.

Inhalation
Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: No data available.

Components:
Benzene
LOAEL (Rat, Oral): 25 mg/kg (Target Organ(s): Blood)
LOAEL (Rat, Inhalation - vapour): 0.958 mg/l (Target Organ(s): Blood)
LOAEL (Human, Inhalation - vapour): 0.0018 mg/l (Target Organ(s): Blood)

Skin Corrosion/Irritation
Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation
Product: Causes serious eye irritation.

Respiratory or Skin Sensitization
Product: No data available.

Carcinogenicity
Product: May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
Benzene, ethyl- Overall evaluation: 2B. Possibly carcinogenic to humans.
Benzene Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:
Benzene Known To Be Human Carcinogen.

ACGIH Carcinogen List:
Benzene, ethyl- Group A3: Confirmed animal carcinogen with unknown relevance to humans.
Benzene Group A1: Confirmed human carcinogen.

Germ Cell Mutagenicity

In vitro
Product: May cause genetic defects.

In vivo
Product: May cause genetic defects.

Reproductive toxicity
Product: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
Product: May cause drowsiness or dizziness.

Specific Target Organ Toxicity - Repeated Exposure

Product: Blood - Causes damage to organs through prolonged or repeated exposure.

Central nervous system, hearing organs - May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard

Product: May be fatal if swallowed and enters airways.

Other effects: Xylene is a developmental toxicant in Canada.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:****Fish**

Product: Toxic to aquatic life.

Aquatic Invertebrates

Product: Toxic to aquatic life.

Toxicity to aquatic plants

Product: Toxic to aquatic life.

Chronic hazards to the aquatic environment:**Fish**

Product: Toxic to aquatic life with long lasting effects.

Aquatic Invertebrates

Product: Toxic to aquatic life with long lasting effects.

Toxicity to aquatic plants

Product: Toxic to aquatic life with long lasting effects.

Persistence and Degradability**Biodegradation**

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential**Bioconcentration Factor (BCF)**

Product: No data available.

Components:

Toluene Leuciscus idus, Bioconcentration Factor (BCF): 90 Aquatic sediment
Experimental result, Key study

Benzene Clupea harengus, Bioconcentration Factor (BCF): 11 Aquatic sediment
Experimental result, Supporting study

Partition Coefficient n-octanol / water (log Kow)

Product: 3.12 - 3.20

Mobility in Soil: Product is likely to have low to moderate absorption into soil and sediment based on Log Kow.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. Waste generator is advised to carefully consider hazardous properties and control measures needed for other materials that may be found in the waste.

Contaminated Packaging: Check local, federal and provincial environmental regulations prior to disposal.

14. Transport information

TDG

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|-------------------------------|---|
| UN number or ID number: | UN 1993 |
| UN Proper Shipping Name: | FLAMMABLE LIQUID, N.O.S. (Toluene, Ethylbenzene, Xylene (mixed isomers)) |
| Class | 3 |
| Packing Group | II |
| Label(s) | 3 |
| Subsidiary risk label | – |
| Special precautions for user: | Reference Emergency Response Guidebook No. 130, latest revision. (which is applicable due to noxious components in the product) |

IMDG

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|-------------------------------|--|
| UN number or ID number: | UN 1993 |
| UN Proper Shipping Name: | FLAMMABLE LIQUID, N.O.S. (Toluene, Ethylbenzene, Xylene (mixed isomers)) |
| Transport Hazard Class(es) | |
| Class: | 3 |
| Label(s): | 3 |
| EmS No.: | F-E, S-E |
| Packing Group: | II |
| Marine pollutant: | No |
| Limited quantity | 1.00L |
| Excepted quantity | E2 |
| Special precautions for user: | Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Annex II - yes; IBC02 |

15. Regulatory information

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)

Chemical Identity

Benzene

Export Control List (CEPA 1999, Schedule 3)

Not regulated

National Pollutant Release Inventory (NPRI)

Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Parts 1-4)

| | |
|------|--------------------|
| NPRI | Toluene |
| | Benzene, ethyl- |
| | Benzene, dimethyl- |
| | Benzene |

Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5

Toluene
Benzene, dimethyl-
Benzene**Greenhouse Gases**

Not regulated

Precursor Control Regulations**Chemical Identity**

Toluene

Canada. Substances Subject to Significant New Activity (SNAc) Reporting Requirements

Not regulated

Inventory status

Canada DSL Inventory List: On or in compliance with the inventory

US TSCA Inventory: On or in compliance with the inventory

16. Other information, including date of preparation or last revision**Issue Date:** 11/02/2023**Revision Information:** 11/02/2023: SDS Update – GHS classification change, OEL edits, phrase edits
12/06/2019: SDS Update**Version #:** 8.1**Abbreviations and acronyms:** ACGIH = American Conference of Governmental Industrial Hygienists; BOD = Biochemical Oxygen Demand; CAS = Chemical Abstracts Service; CEPA = Canadian Environmental Protection Act; COD = Chemical Oxygen Demand; DSL = Domestic Substances List; EC50 = Effective Concentration 50%; EPA = Environmental Protection Agency; GHS = Globally Harmonized System for the Classification and Labelling of Chemicals; IARC = International Agency for Research on Cancer; IDLH = Immediately Dangerous to Life or Health; Kow = Octanol/water partition coefficient; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; LEL = Lower Explosive Limit; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OEL = Occupational Exposure Limit; OSHA = Occupational Safety and Health Administration; PNOC = Particulates Not Otherwise Classified; PPE = Personal Protective Equipment; REL = Recommended Exposure Limit; SCBA = Self Contained Breathing Apparatus; SDS = Safety Data Sheet; STEL = Short Term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average**Further Information:** For additional information on equipment bonding and grounding, refer to the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity".

For additional information on storing and handling flammable liquids, refer to the National Fire Protection Association (NFPA) 30, "Flammable and Combustible Liquids Code".

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