# SAFETY DATA SHEET

## 1. Identification

<table>
<thead>
<tr>
<th>GHS Product identifier:</th>
<th>Toluene/Xylene Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>TOLUENE/XYLENE, T/X, C6-C8 Aromatics, TX Mix</td>
</tr>
<tr>
<td>Common name(s), synonym(s):</td>
<td>NOVA-0008</td>
</tr>
<tr>
<td>SDS number:</td>
<td></td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Company Name: NOVA Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>P.O. Box 2518, Station M Calgary, Alberta, Canada T2P 5C6</td>
</tr>
<tr>
<td>Telephone:</td>
<td>Product Information: 1-412-490-4063</td>
</tr>
<tr>
<td>SDS Information Email:</td>
<td><a href="mailto:msdsemail@novachem.com">msdsemail@novachem.com</a></td>
</tr>
</tbody>
</table>

### Emergency telephone number:

- 1-800-561-6682, 1-403-314-8767 (NOVA Chemicals) (24 hours)
- 1-800-424-9300 (CHEMTREC-USA) (24 hours)

## 2. Hazard(s) identification

### Hazard Classification

#### Physical Hazards

- Flammable liquids: Category 2

#### Health Hazards

- Acute toxicity (Oral): Category 4
- Skin Corrosion/Irritation: Category 2
- Serious Eye Damage/Eye Irritation: Category 2B
- Germ Cell Mutagenicity: Category 1B
- Carcinogenicity: Category 1A
- Toxic to reproduction: 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

- Acute hazards to the aquatic environment: Category 2
- Chronic hazards to the aquatic environment: Category 2
**Hazard Symbol:**

- ![Flammable](image1.png)
- ![Danger](image2.png)
- ![Health Hazard](image3.png)
- ![Aquatic Hazard](image4.png)

**Signal Word:** Danger

**Hazard Statement:**
- Highly flammable liquid and vapor.
- Harmful if swallowed.
- Causes skin irritation.
- Causes 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/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 or mists. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. 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 CENTER/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. IF 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 appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>Methylbenzene</td>
<td>108-88-3</td>
<td>69 - 85%</td>
</tr>
<tr>
<td>Benzene, ethyl-</td>
<td>Ethylbenzene, Phenylethane</td>
<td>100-41-4</td>
<td>9 - 23%</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>Xylene (mixed isomers)</td>
<td>1330-20-7</td>
<td>5 - 10%</td>
</tr>
<tr>
<td>Benzene</td>
<td>Benzoil</td>
<td>71-43-2</td>
<td>0 - 1.0%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight.

Additional Information: This product is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

4. First-aid measures

Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

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


Indication of immediate medical attention and special treatment needed
Treatment:
For more detailed medical emergency support information call 1-800-561-6682 or 1-403-314-8767 (24 hours, NOVA Chemicals Emergency Response). Ensure thorough eye and skin decontamination. Treat unconsciousness, nausea, hypotension, seizures and cardiac arrhythmias 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 tubular necrosis, encephalopathy and dysrhythmias. Monitor for urinary phenol within 72 hours of acute exposure.

5. Fire-fighting measures

General Fire Hazards:
Highly flammable liquid and vapor. Vapors 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 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. Vapors 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 vapor-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 firefighters

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 discoloration 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 runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Reference 2016 Emergency Response Guidebook, Guide No. 130 for additional details and instructions.

Special protective equipment for fire-fighters:
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
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:

Wear appropriate personal protective equipment. 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 meters (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 runoff 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 meters (1000 feet). Spills on water will volatilize rapidly, making containment or recovery difficult. A vapor-suppressing foam may be used to reduce vapors. 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/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/vapors/spray. Avoid contact with skin and eyes. Keep away from incompatible materials such as oxidizing agents and acids. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation, use respiratory protection.

#### 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. 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 vapor 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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>TWA</td>
<td>20 ppm</td>
<td>US. AC3IH Threshold Limit Values (03 2014)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>150 ppm 560 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>100 ppm 375 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>MAX. CONC</td>
<td></td>
<td>500 ppm</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>200 ppm</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
<td>300 ppm</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>150 ppm 560 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>REL</td>
<td></td>
<td>100 ppm 375 mg/m³</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>Benzene, ethyl</td>
<td>TWA</td>
<td>20 ppm</td>
<td>US. AC3IH Threshold Limit Values (03 2014)</td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>100 ppm 435 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>125 ppm 545 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
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<td></td>
<td>TWA</td>
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<tr>
<td>REL</td>
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<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
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<tr>
<td>STEL</td>
<td></td>
<td>125 ppm 545 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Benzene, dimethyl</td>
<td>TWA</td>
<td>100 ppm</td>
<td>US. AC3IH Threshold Limit Values (03 2014)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>150 ppm</td>
<td>US. AC3IH Threshold Limit Values (03 2014)</td>
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<td></td>
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<tr>
<td>STEL</td>
<td></td>
<td>150 ppm 655 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
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<tr>
<td></td>
<td></td>
<td>100 ppm 435 mg/m³</td>
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<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>150 ppm 655 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>US. AC3IH Threshold Limit Values (03 2014)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>2.5 ppm</td>
<td>US. AC3IH Threshold Limit Values (03 2014)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
<td>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2012)</td>
</tr>
<tr>
<td>OSHA_ACT</td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2012)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 ppm</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>5 ppm</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
<td>25 ppm</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>10 ppm</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>MAX. CONC</td>
<td></td>
<td>50 ppm</td>
<td>US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>REL</td>
<td></td>
<td>0.1 ppm</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>1 ppm</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
</tbody>
</table>
### Biological Limit Values

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene (toluene: Sampling time: End of shift.)</td>
<td>0.03 mg/l (Urine)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
<tr>
<td>Toluene (toluene: Sampling time: Prior to last shift of work week.)</td>
<td>0.02 mg/l (Blood)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
<tr>
<td>Toluene (o-Cresol, with hydrolysis: Sampling time: End of shift.)</td>
<td>0.3 mg/g (Creatinine in urine)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
<tr>
<td>Benzene, ethyl- (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)</td>
<td>0.15 g/g (Creatinine in urine)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
<tr>
<td>Benzene, dimethyl- (Methylhippuric acids: Sampling time: End of shift.)</td>
<td>1.5 g/g (Creatinine in urine)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
<tr>
<td>Benzene (t,t-Muconic acid: Sampling time: End of shift.)</td>
<td>500 µg/g (Creatinine in urine)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
<tr>
<td>Benzene (S-Phenylmercapturic acid: Sampling time: End of shift.)</td>
<td>25 µg/g (Creatinine in urine)</td>
<td>ACGIH BEI (03 2014)</td>
</tr>
</tbody>
</table>

### 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

**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 vapors.

**Skin Protection**

**Hand Protection:**

Chemical resistant gloves.

**Other:**

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 fiber clothing (i.e., cotton or wool) is recommended. Synthetic clothing can generate static electricity and is not recommended where a flammable vapor 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 or self-contained breathing apparatus should be used. Air supplied breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
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
- Physical state: liquid
- Form: liquid
- Color: Colorless
- Odor: Aromatic
- Odor 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
  - Flammability limit - upper (%): 7 %(V) (toluene)
  - Flammability limit - lower (%): 1 %(V) (toluene)
- Vapor pressure: 4.8 kPa (37.8 °C (100.0 °F))
- Vapor density: 3.18 (Air=1) (toluene) (calculated)
- Density: 871.0 - 871.5 kg/m3
- 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 mm2/s (40 °C (104 °F)), estimated

10. Stability and reactivity

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
Ingestion: Harmful if swallowed. 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.

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.

Skin Contact: Causes skin irritation.

Eye contact: Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: Vomiting, nausea, abdominal pain and central nervous system effects including headache.

Inhalation: Central nervous system effects including headache. Respiratory irritation.

Skin Contact: Skin irritation.

Eye contact: Eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
- Product: ATEmix: 748.24 mg/kg

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.

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

Skin Corrosion/Irritation
- Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation
- Product: Causes 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.

- Benzene
  Cancer

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: No data available.

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.

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 state environmental regulations prior to disposal.

14. Transport information

DOT
UN Number: UN 1993
UN Proper Shipping Name: Flammable liquids, n.o.s. (Toluene, Ethylbenzene, Xylene (mixed isomers))
Transport Hazard Class(es)
Class: 3
Label(s): 3
Packing Group: II
Marine Pollutant: No
Special precautions for user: 2016 Emergency Response Guidebook, Guide No. 130. (which is applicable due to noxious components in the product)
Reportable quantity
Benzene 10 lbs
Xylene (mixed isomers) 100 lbs

IMDG
UN 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

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>OSHA hazard(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>Cancer</td>
</tr>
<tr>
<td></td>
<td>Central nervous system</td>
</tr>
<tr>
<td></td>
<td>Aspiration</td>
</tr>
<tr>
<td></td>
<td>Flammability</td>
</tr>
<tr>
<td></td>
<td>respiratory tract irritation</td>
</tr>
<tr>
<td></td>
<td>Eye</td>
</tr>
<tr>
<td></td>
<td>Blood</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
</tr>
</tbody>
</table>

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>1000 lbs.</td>
</tr>
<tr>
<td>Benzene, ethyl-</td>
<td>1000 lbs.</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>100 lbs.</td>
</tr>
<tr>
<td>Benzene</td>
<td>10 lbs.</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
- Flammable (gases, aerosols, liquids, or solids)
- Acute toxicity (any route of exposure)
- Skin Corrosion or Irritation
- Serious eye damage or eye irritation
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Specific target organ toxicity (single or repeated exposure)
- Aspiration Hazard
- Hazards Not Otherwise Classified (HNOC)

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>1000 lbs.</td>
</tr>
<tr>
<td>Benzene, ethyl-</td>
<td>1000 lbs.</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>100 lbs.</td>
</tr>
<tr>
<td>Benzene</td>
<td>10 lbs.</td>
</tr>
</tbody>
</table>
SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Benzene, ethyl-</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Benzene</td>
<td>10000 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reporting threshold for other users</th>
<th>Reporting threshold for manufacturing and processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>10000 lbs</td>
<td>25000 lbs.</td>
</tr>
<tr>
<td>Benzene, ethyl-</td>
<td>10000 lbs</td>
<td>25000 lbs.</td>
</tr>
<tr>
<td>Benzene, dimethyl-</td>
<td>10000 lbs</td>
<td>25000 lbs.</td>
</tr>
<tr>
<td>Benzene</td>
<td>10000 lbs</td>
<td>25000 lbs.</td>
</tr>
</tbody>
</table>

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
WARNING: This product can expose you to chemicals including Benzene; which is [are] known to the State of California to cause cancer and birth defects or other reproductive harm.
Benzene, ethyl-; which is [are] known to the State of California to cause cancer.
Toluene; which is [are] known to the State of California to cause birth defects or other reproductive harm.
For more information go to www.P65Warnings.ca.gov.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Toluene
Benzene, ethyl-
Benzene, dimethyl-
Benzene

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Toluene
Benzene, ethyl-
Benzene, dimethyl-
Benzene

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: 08/21/2018
Revision Information: 08/21/2018: SDS Update – phrase edits, NFPA 30 information added, California Proposition 65 updates 12/21/2017: SDS Update – GHS classification change, composition edits, density added, relative density edit, phrase edits

Version #: 7.2

Abbreviations and acronyms: ACC = American Chemistry Council; ACGIH = American Conference of Governmental Industrial Hygienists; BOD = Biochemical Oxygen Demand; C = Ceiling; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; COD = Chemical Oxygen Demand; DOT = Department of Transportation; DSL = Domestic Substances List; EC50 = Effective Concentration 50%; EPA = Environmental Protection Agency; GHS = Globally Harmonized System for the Classification and Labelling of Chemicals; HPV = High Production Volume; IARC = International Agency for Research on Cancer; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; PMCC = Pensky-Martens Closed Cup; PPE = Personal Protective Equipment; RCRA = Resource Conservation and Recovery Act; REL = Recommended Exposure Limit; SARA = Superfund Amendments and Reauthorization Act; SCBA = Self Contained Breathing Apparatus; SDS = Safety Data Sheet; STEL = Short Term Exposure Limit; 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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