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

1. Identification

Product identifier: Benzene

Other means of identification
Common name(s), synonym(s): Benzene, benzol
SDS number: NOVA-0011

Recommended use and restriction on use
Recommended use: Petrochemical industry: solvent, raw material for petrochemicals.
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)

2. Hazard(s) identification

Hazard Classification According to Hazardous Products Regulations

Physical Hazards
  Flammable liquids Category 2
  Static-accumulating flammable liquid Category 1

Health Hazards
  Skin Corrosion/Irritation Category 2
  Serious Eye Damage/Eye Irritation Category 2A
  Germ Cell Mutagenicity Category 1B
  Carcinogenicity Category 1A
  Specific Target Organ Toxicity - Repeated Exposure Category 1
  Aspiration Hazard Category 1

Environmental Hazards
  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. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause genetic defects. May cause cancer. Causes damage to organs through prolonged or repeated exposure. (Blood) 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/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. 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. Rinse skin with water [or shower]. If skin irritation occurs: Get medical advice/attention. 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 cool. Store locked up.

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: None.
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>Benzene</td>
<td>Benzol</td>
<td>71-43-2</td>
<td>99.85 - 99.99%</td>
</tr>
</tbody>
</table>

* 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. 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. Vomiting, nausea, abdominal pain and central nervous system effects including headache. Reduced white blood cell count.

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 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:** Water spray may be an ineffective extinguishing medium, and 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 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 firefighters:** 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. In case of leakage, eliminate all ignition sources. 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. 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/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 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.

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 internal 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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>TWA</td>
<td>0.5 ppm 1.6 mg/m³</td>
<td>Canada. Alberta OELs (Occupational Health &amp; Safety Code, Schedule 1, Table 2), as amended</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>2.5 ppm 8 mg/m³</td>
<td>Canada. Alberta OELs (Occupational Health &amp; Safety Code, Schedule 1, Table 2), as amended</td>
</tr>
<tr>
<td>Benzene</td>
<td>STEL</td>
<td>2.5 ppm</td>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)</td>
</tr>
<tr>
<td>Benzene</td>
<td>STEL</td>
<td>2.5 ppm</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended</td>
</tr>
<tr>
<td>Benzene</td>
<td>STEL</td>
<td>5 ppm 15.5 mg/m³</td>
<td>Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment), as amended</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>Benzene (t,t-Muconic acid: Sampling time: End of shift.)</td>
<td>500 µg/g (Creatinine in urine)</td>
<td>ACGIH BEI</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</td>
</tr>
</tbody>
</table>

### Exposure guidelines

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Notations</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>Can be absorbed through the skin.</td>
<td>Canada. Alberta OELs (Occupational Health &amp; Safety Code, Schedule 1, Table 2), as amended</td>
</tr>
<tr>
<td></td>
<td>Can be absorbed through the skin.</td>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)</td>
</tr>
<tr>
<td></td>
<td>Can be absorbed through the skin.</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended</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 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. 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.

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**9. Physical and chemical properties**

**Appearance**

- **Physical state:** liquid
- **Form:** liquid
- **Colour:** Colourless
- **Odour:** Sweet, Solvent odour
- **Odour Threshold:** 34 - 119 ppm (detection)
- **pH:** not applicable
- **Melting point/freezing point:** 5.5 °C (41.9 °F) (Freezing Point)
- **Initial boiling point and boiling range:** 80 °C (176 °F)
- **Flash Point:** -11 °C (12 °F)
- **Evaporation rate:** No data available.
- **Flammability (solid, gas):** not applicable

**Upper/lower limit on flammability or explosive limits**

- **Flammability limit - upper (%):** 7.8 %(V)
- **Flammability limit - lower(%):** 1.2 %(V)
- **Vapour pressure:** 75 mm HG (20 °C (68 °F))
- **Vapour density:** 2.8 (0 °C (32 °F)) (Air=1)
- **Density:** 880 kg/m3
- **Relative density:** 0.88 (15 °C (59 °F)) (Water=1)
- **Solubility(ies)**
  - **Solubility in water:** Slightly soluble
  - **Solubility (other):** No data available.
- **Partition coefficient (n-octanol/water):** 2.13
- **Auto-ignition temperature:** 498 °C (928 °F)
- **Decomposition temperature:** No data available.
- **Viscosity:** 0.47 - 0.66 mm2/s (40 °C (104 °F)), (estimated)

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**10. Stability and reactivity**

**Reactivity:** Reactive with oxidizing agents, acids and halogens. May attack and degrade some types of plastics, rubbers and coatings.

**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 and halogens.

**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

**Inhalation:**
Harmful if inhaled. Excessive inhalation of this product may result in heartbeat irregularities and 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.

**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, and in extreme conditions coma and possibly death. Ingestion may also cause blood disorders.

**Skin Contact:**
Causes skin irritation.

**Eye contact:**
Causes serious eye irritation.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Inhalation:**
Heartbeat irregularities and central nervous system effects including headache. Reduced white blood cell count.

**Ingestion:**
Vomiting, nausea, abdominal pain and central nervous system effects including headache. Reduced white blood cell count.

**Skin Contact:**
Skin irritation.

**Eye contact:**
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:**
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 Overall evaluation: 1. Carcinogenic to humans.

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

ACGIH Carcinogen List:
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: Not classified.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: Blood - Causes damage to organs through prolonged or repeated exposure.

Aspiration Hazard
Product: May be fatal if swallowed and enters airways.

Other effects: Prolonged exposure of an aging population of workers to benzene can cause myelodysplastic syndrome (MDS) (abnormal growth of red, white or platelet stem cells in the bone marrow).

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: LC 50 (Oncorhynchus mykiss, 96 h): 5.3 mg/l experimental result Toxic to aquatic life.

Aquatic Invertebrates
Product: LC 50 (Water flea (Daphnia magna), 48 h): 140 - 320 mg/l Mortality EC 50 (Water flea (Daphnia magna), 48 h): 8.76 - 15.6 mg/l Intoxication Toxic to aquatic life.

Toxicity to aquatic plants
Product: Toxic to aquatic life.
Chronic hazards to the aquatic environment:

**Fish**
Product: NOEC (32 d): 0.8 mg/l
Toxic to aquatic life with long lasting effects.

**Aquatic Invertebrates**
Product: NOEC (Water flea (Daphnia magna), 7 d): 3 mg/l
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: Benzene in air will photo-degrade with a calculated half-life of 13.4 days. This is accelerated in polluted atmospheres containing nitrogen or sulphur oxides. By-products include phenol, nitrophenols, nitrobenzene, formic acid and peroxyacetyl nitrate. Benzene will biodegrade in soils and ground waters (half-life 16 to 28 days) under aerobic conditions. Limited degradation occurs under anaerobic conditions.

**BOD/COD Ratio**
Product: No data available.

**Bioaccumulative Potential**

**Bioconcentration Factor (BCF)**
Product: Bioconcentration Factor (BCF): 1.1 - 20 (Benzene) Metabolites may partially bioaccumulate in fatty fish tissues liver and brain.

**Partition Coefficient n-octanol / water (log Kow)**
Product: 2.13

**Mobility in Soil:**
Estimated volatization half-life of benzene for soil was 7.2 to 38.4 days (Jury, WA et al., 1984). Benzene that does not evaporate will be highly to very highly mobile in the soil and may leach down into the ground water.

**Other Adverse Effects:**
When released to soil or water, product will rapidly begin to volatilize. Evaporation rates, with moderate wind speed, for benzene range from <0.1 g/m²/s at 20 °C (68 °F) to > 3g/m²/s at 30 °C (86 °F).

**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**
- UN Number: UN 1114
- UN Proper Shipping Name: BENZENE
- Class: 3
- Packing Group: II
- Label(s): 3
- Subsidiary risk label: –
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 | Benzene |

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

| NPRI PT5 | Benzene |

Greenhouse Gases
Not regulated

Precursor Control Regulations
Not regulated

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: 12/20/2019
Revision Information: 12/20/2019: SDS Update
Version #: 7.0

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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