1. Product and Company Identification

Product identifier: TURBO DIESEL

Other means of identification:
- MSDS number: LT16618a
- Product code: CC2588 (1 Pint / 470 mL); CC2588 X (1 Pint / 470 mL)

Product use: Diesel fuel additive.

Chemical family: Mixture of: Petroleum distillates; Hydrocarbons; Ether

Manufacturer:
- Company name: Cummins Filtration
- Address: 1200 Fleetguard Road, Cookeville, TN, U.S.A. 38506
- Telephone: (931) 526 9551
- Website: www.cumminsfiltration.com
- E-Mail: fleetmaster.us@cummins.com

Supplier information: Refer to Manufacturer

Emergency phone number: Chemtrec 1-800-424-9300 (Within Continental U.S.); Chemtrec 703-527-3887 (Outside U.S.).

2. Hazard(s) Identification


WARNING! Combustible liquid and vapour. May be harmful or fatal if swallowed. Can enter the lungs and cause damage. May be harmful if inhaled. May cause respiratory irritation. May cause nausea, vomiting, headache and other central nervous system effects. May cause eye and skin irritation. Contains material which can cause damage to the blood system, the liver and the kidneys. Possible cancer hazard - contains material which may cause cancer. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

Contains material that may be harmful in the environment.

Potential health effects:

Routes of exposure:
- Routes of entry skin & eye: May cause moderate skin irritation. Mild to moderate eye irritant.
- Routes of entry skin absorption: May be absorbed through the skin.
- Routes of entry inhalation: May cause irritation to the respiratory system. May cause central nervous system depression.
- Routes of entry ingestion: Aspiration hazard May cause gastrointestinal irritation.

Target organs: Eyes, skin, respiratory system, central nervous system, blood system, liver, brain and kidneys.

Chronic effects:
- Prolonged or repeated contact may cause drying, cracking and defatting of the skin.
- Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.
- For further information, please refer to section 11 of the MSDS.

Most important symptoms/effects, acute and delayed:
- May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.
- Causes skin irritation. Contact may cause redness, swelling and a painful sensation.
- Causes eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
- May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties.
- May cause central nervous system depression. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.
Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.

Suspected of damaging the unborn child. Symptoms may include reduced fetal weight, delayed ossification and persistent behavioural effects.

Causes damage to the blood system if swallowed. Contains: Naphthalene. Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, and subsequent liver and kidney effects. Prolonged overexposure may cause slight liver effects, such as increased organ weights.

Potential environmental effects Toxic to aquatic life with long lasting effects. Avoid release to the environment. See Section 12 for more environmental information.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Chemical name</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aromatic solvent</td>
<td>178535-25-6</td>
<td>30.0 - 60.0</td>
</tr>
<tr>
<td></td>
<td>2-Ethylhexyl nitrate</td>
<td>27247-96-7</td>
<td>15.0 - 25.0</td>
</tr>
<tr>
<td></td>
<td>Solvent naphtha (petroleum), heavy aromatic</td>
<td>64742-94-5</td>
<td>7.0 - 13.0</td>
</tr>
<tr>
<td></td>
<td>1,3,5-Triethylbenzene</td>
<td>102-25-0</td>
<td>7.0 - 13.0</td>
</tr>
<tr>
<td></td>
<td>Diethylene glycol monomethyl ether</td>
<td>111-77-3</td>
<td>1.0 - 5.0</td>
</tr>
<tr>
<td></td>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>1.0 - 5.0</td>
</tr>
<tr>
<td></td>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>0.1 - 1.0</td>
</tr>
<tr>
<td></td>
<td>Xylene</td>
<td>1330-20-7</td>
<td>0.1 - 0.5</td>
</tr>
<tr>
<td></td>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>0.1 - 0.3</td>
</tr>
</tbody>
</table>

4. First Aid Measures

First aid procedures

Inhalation Move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Get medical attention.

Skin contact Remove contaminated clothing. Wash off immediately with soap and plenty of water. If irritation persists, seek prompt medical attention. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with running water for at least 15 minutes. Get medical attention.

Ingestion Do NOT induce vomiting. Seek immediate medical attention/advice. Never give anything by mouth if victim is unconscious.

Notes to physician Immediate medical attention is required. Aspiration hazard if swallowed - can enter lungs and cause damage. Provide general supportive measures and treat symptomatically.

General Information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties Flammable by WHMIS criteria.

Extinguishing media

Suitable extinguishing media Dry chemical, foam, carbon dioxide and water fog.

Unsuitable extinguishing media Do not use water jet, as this may spread burning material.
MATERIAL SAFETY DATA SHEET

Protection of firefighters

Specific hazards arising from the chemical
Vapours are heavier than air and collect in confined and low-lying areas. Material will float on water and can be re-ignited at the water’s surface. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Toxic fumes may be released during a fire.

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. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Fire fighting equipment/instructions
Move containers from fire area if safe to do so. Use water spray to keep containers cool. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

Explosion data

Sensitivity to static discharge
Not expected to be sensitive to static discharge.

Sensitivity to mechanical impact
Not expected to be sensitive to mechanical impact.

Hazardous combustion products
Carbon oxides; Hydrocarbons; Aldehydes; Sulphur oxides; Nitrogen oxides (NOx); Other unidentified organic compounds.

General fire hazards
Combustible liquid and vapour. May be ignited by open flames and sparks.

6. Accidental Release Measures

Personal precautions
Restrict access to area until completion of clean-up. Keep all other personnel upwind and away from the spill/release. Ensure clean-up is conducted by trained personnel only. All persons dealing with the clean-up should wear the appropriate personal protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. If necessary, dike well ahead of the spill to prevent run-off into drains, sewers, or any natural waterway or drinking supply. Contact local authorities in case of spillage to drain/aquatic environment.

Methods and materials for containment and cleaning up
Ventilate the area. Stop the spill at source if it is safe to do so. Eliminate all ignition sources. Use only non-sparking tools and equipment in the clean-up process.

Clean-up methods - small spillage: Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Pick up and transfer to properly labelled containers. Never return spills in original containers for re-use. Contaminated absorbent material may pose the same hazards as the spilled product.

Clean-up methods - large spillage: Contain spilled liquid with non-combustible, inert absorbent material (e.g. sand). Remove liquid by pumps or vacuum equipment. Keep in properly labelled containers.

Notify the appropriate authorities as required. Refer to Section 13 for disposal of contaminated material.

Other information
Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling
Wear suitable protective equipment during handling. Wear protective gloves/clothing and eye/face protection. Use only outdoors or in a well-ventilated area. Do not ingest. Do not breathe mist or vapors. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks, and open flames. Keep away from incompatibles. Use caution when opening cap. Keep containers tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Wash thoroughly after handling. Keep out of the reach of children. Do not cut, weld, drill or grind on or near this container.
Storage

Store in a cool, dry, well-ventilated area. Store away from areas of excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatibles. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Store locked up. Keep out of the reach of children. Do not store near any incompatible materials (see Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits

U.S. OSHA Exposure Limits (29 CFR 1910)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), heavy aromatic (CAS 64742-94-5)</td>
<td>TWA 500 ppm (as petroleum distillates, naphtha)</td>
</tr>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td>TWA 10 ppm (50 mg/m³)</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene (CAS 95-63-6)</td>
<td>TWA 25 ppm (trimethylbenzene isomers) (final rule limit)</td>
</tr>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td>TWA 100 ppm (435 mg/m³)</td>
</tr>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td>TWA 100 ppm (435 mg/m³)</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene (CAS 91-20-3)</td>
<td>TWA 10 ppm (skin)</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene (CAS 95-63-6)</td>
<td>TWA 25 ppm (trimethylbenzene isomers)</td>
</tr>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td>STEL 150 ppm</td>
</tr>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td>TWA 20 ppm</td>
</tr>
</tbody>
</table>

Biological limit values

| Naphthalene (CAS 91-20-3) | Parameter 1-Naphthol with hydrolysis plus 2-Naphthol with hydrolysis (nonquantitative, nonspecific) |
| Xylene (CAS 1330-20-7)    | 1.5 g/g, Creatinine; Medium: Urine; Parameter: Methylhippuric acid |
| Ethylbenzene (CAS 100-41-4) | 0.15 g/g Creatinine, Medium: Urine, Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific) |

US ACGIH Threshold Limit Values: Skin designation

Naphthalene (CAS 91-20-3) Can be absorbed through skin

Engineering controls
Use only outdoors or in a well-ventilated area. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection
Wear as appropriate: Tightly fitting safety goggles; Safety glasses with side-shields. A full face shield may also be necessary.

Skin protection
Wear protective gloves. Advice should be sought from glove suppliers. Wear protective clothing to cover as much of the exposed skin area as possible. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact.

Respiratory protection
Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Seek advice from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with CSA Z94.4-02.
Hand protection
Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

9. Physical and chemical properties

Appearance
- Physical state: Liquid.
- Form: Thin liquid.
- Colour: Light coloured liquid.

Odour
Petroleum odour.

Odour threshold
N/Av

pH
N/Av

Melting point /freezing point
N/Av

Initial boiling point and boiling range
> 100°C (212°F) (based on ingredients)

Flash point
63°C (145°F)
Tag closed cup

Evaporation rate
N/Av

Flammability (solid, gas)
N/A

Lower flammability/explosive limit
N/A

Upper flammability/explosive limit
N/A

Vapour pressure
N/A

Vapour density
N/A

Relative density
0.92 @ 15.6°C (60°F)

Solubility(ies)

Other solubility(ies)
N/A

Solubility (water)
Insoluble.

Partition coefficient
(n-octanol/water)
N/A

Auto-ignition temperature
N/A

Decomposition temperature
N/A

Viscosity
N/A

Other information

Explosive properties
Not explosive

Oxidizing properties
None known.

Specific gravity
0.92 @ 15.6°C (60°F)

VOC
N/A

Volatilities %
N/A

Other physical/chemical data
No additional information.

10. Stability and reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions
No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

Conditions to avoid
Avoid excessive heat, sparks and open flame. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials
Strong oxidizing agents; Strong acids; Strong bases; Halogenated materials.

Hazardous decomposition products
None known, refer to hazardous combustion products in Section 5.
## 11. Toxicological information

### Toxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic solvent</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>N/Av</td>
</tr>
<tr>
<td><strong>inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>N/Av</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 2000 mg/kg (No mortality)</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), heavy aromatic</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 3160 mg/kg</td>
</tr>
<tr>
<td><strong>inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 17.1 mg/L (mist)</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 6000 mg/kg</td>
</tr>
<tr>
<td>1,3,5-Triethylbenzene</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>N/Av</td>
</tr>
<tr>
<td><strong>inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>N/Av</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>N/Av</td>
</tr>
<tr>
<td>Diethylene glycol monomethyl ether</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>9404 mg/kg</td>
</tr>
<tr>
<td><strong>inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 50 mg/L (aerosol)</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>6830 mg/kg</td>
</tr>
<tr>
<td>Naphthalene</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 20 000 mg/kg</td>
</tr>
<tr>
<td><strong>inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>N/Av</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>490 mg/kg (rat)</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dermal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 3160 mg/kg</td>
</tr>
<tr>
<td><strong>inhalation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>18 mg/L (vapour)</td>
</tr>
</tbody>
</table>
**MATERIAL SAFETY DATA SHEET**

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
<th>Oral LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>12 180 mg/kg</td>
<td>6350 ppm (27.6 mg/L) (vapours)</td>
</tr>
<tr>
<td></td>
<td>Rabbit</td>
<td>12 180 mg/kg</td>
<td>3500 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>12 180 mg/kg</td>
<td>6350 ppm (27.6 mg/L) (vapours)</td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rabbit</td>
<td>15 380 mg/kg</td>
<td>4000 ppm (17.4 mg/L) (vapour)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>15 380 mg/kg</td>
<td>4000 ppm (17.4 mg/L) (vapour)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rabbit</td>
<td>&gt; 4800 mL/kg</td>
<td>&gt; 14 mg/L</td>
<td></td>
</tr>
<tr>
<td>2-Ethylhexyl nitrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rabbit</td>
<td>&gt; 4800 mL/kg</td>
<td>&gt; 14 mg/L</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>&gt; 4800 mL/kg</td>
<td>&gt; 14 mg/L</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rat</td>
<td>&gt; 9600 mg/kg</td>
<td>&gt; 9600 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

**Acute effects**
- May be harmful or fatal if swallowed. Causes mild to moderate skin and eye irritation. May cause respiratory irritation. May cause central nervous system depression.
- Product (based on similar blends):
  - LD50 (Rat, oral): >5000 mg/kg (supplier)
  - LD50 (Rabbit, dermal): >2000 mg/kg (supplier).
- See data above for individual ingredient acute toxicity data.

**Sensitization**
- Not expected to be a skin or respiratory sensitizer.

**Chronic effects**
- Prolonged or repeated contact may cause drying, cracking and defatting of the skin.
- Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.
- For further information, please refer to section 11 of the MSDS.

**Carcinogenicity**
- Contains: Naphthalene; Ethylbenzene. Naphthalene is classified as carcinogenic by IARC (Group 2B) and NTP (Group 2 - Reasonably anticipated). Ethylbenzene is classified as possibly carcinogenic by IARC (Group 2B) and the ACGIH (Category A3).
- See below for ingredients present on regulatory lists.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
- Naphthalene (CAS 91-20-3) - Group 2B (Possibly Carcinogenic to Humans)
- Xylene (CAS 1330-20-7) - Group 3 (Not Classifiable)
- Ethylbenzene (CAS 100-41-4) - Group 2B (Possibly Carcinogenic to Humans)

**ACGIH Carcinogenicity**
- Naphthalene (CAS 91-20-3) - A4 - Not Classifiable as a Human Carcinogen
- Xylene (CAS 1330-20-7) - A4 - Not Classifiable as a Human Carcinogen
- Ethylbenzene (CAS 100-41-4) - A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

**Skin corrosion/irritation**
- May cause moderate skin irritation.

**Serious eye damage/irritation**
- Mild to moderate eye irritant.
MATERIAL SAFETY DATA SHEET

Mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Reproductive effects
Not expected to cause reproductive effects.

Teratogenicity
This product contains Diethylene glycol monomethyl ether. Diethylene glycol monomethyl ether was found to be fetotoxic, embryotoxic and/or teratogenic in the absence of maternal toxicity, based on animal data. This product contains Xylene. Xylene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

Most important symptoms/effects, acute and delayed
May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.
Causes skin irritation. Contact may cause redness, swelling and a painful sensation.
Causes eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties.
May cause central nervous system depression. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.
Suspected of causing cancer. Symptoms may include persistent coughing, shortness of breath, coughing up blood and wheezing.
Suspected of damaging the unborn child. Symptoms may include reduced fetal weight, delayed ossification and persistent behavioural effects.
Causes damage to the blood system if swallowed. Contains: Naphthalene. Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, and subsequent liver and kidney effects.
Prolonged overexposure may cause slight liver effects, such as increased organ weights.

Further information
None known or reported by the manufacturer.

12. Ecological information

| Ecotoxicity data: |  |
| --- | --- | --- | --- |
| Components | CAS No | Toxicity to Fish |  |
|  | LC50 / 96h | NOEC / 21 day | M Factor |
| Aromatic solvent | 178535-25-6 | N/Av | N/Av |
| Solvent naphtha (petroleum), heavy aromatic | 64742-94-5 | 3.6 mg/L (Rainbow trout) | N/Av |
| 1,3,5-Triethylbenzene | 102-25-0 | 4.15 mg/L (Fathead minnow) (Read-across) | N/Av |
| Diethylene glycol monomethyl ether | 111-77-3 | 5700 mg/L (Fathead minnow) | N/Av |
| Naphthalene | 91-20-3 | 0.96 mg/L (pink salmon) | 0.12 mg/L/40 days | 1 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 7.72 mg/L (Fathead minnow) | N/Av |
| Xylene | 1330-20-7 | 8.2 mg/L (Rainbow trout) | N/Av |
| Ethylbenzene | 100-41-4 | 4.2 mg/L (Rainbow trout) | 1.13 mg/L/30 days |
| 2-Ethylhexyl nitrate | 27247-96-7 | 2 mg/L (Zebra fish) | N/Av |
MATERIAL SAFETY DATA SHEET

M Factor
NOEC / 21 day
Toxicity to Daphnia
EC50 / 48h

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No</th>
<th>EC50 / 48h (Daphnia magna)</th>
<th>NOEC / 21 day</th>
<th>M Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic solvent</td>
<td>178535-25-6</td>
<td>1.3 mg/L</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), heavy aromatic</td>
<td>64742-94-5</td>
<td>1.1 mg/L</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>1,3,5-Triethylbenzene</td>
<td>102-25-0</td>
<td>1.57 mg/L (Daphnia magna)</td>
<td>0.22 - 0.6 mg/L</td>
<td>None.</td>
</tr>
<tr>
<td>Diethylene glycol monomethyl ether</td>
<td>111-77-3</td>
<td>4.1 mg/L (Daphnia magna)</td>
<td>0.22 - 0.6 mg/L</td>
<td>None.</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>4.0 mg/L (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>3.6 mg/L (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>1.8 mg/L (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>1.8 mg/L (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>2-Ethylhexyl nitrate</td>
<td>27247-96-7</td>
<td>&gt; 12.6 mg/L (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
</tbody>
</table>

M Factor
NOEC / 96h or 72h
Toxicity to Algae
EC50 / 96h or 72h

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No</th>
<th>EC50 / 96h or 72h (Green algae)</th>
<th>NOEC / 96h or 72h (Green algae)</th>
<th>M Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic solvent</td>
<td>178535-25-6</td>
<td>6.2 mg/L/72hr</td>
<td>3.2 mg/L/72hr</td>
<td>None.</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), heavy aromatic</td>
<td>64742-94-5</td>
<td>7.2 mg/L/72hr</td>
<td>0.22 mg/L/72hr</td>
<td>None.</td>
</tr>
<tr>
<td>1,3,5-Triethylbenzene</td>
<td>102-25-0</td>
<td>2.6 mg/L/72hr</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Diethylene glycol monomethyl ether</td>
<td>111-77-3</td>
<td>&gt; 500 mg/L/72hr (Green algae)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>91-20-3</td>
<td>0.4 mg/L/72hr Skeletonema costatum (Diatom)</td>
<td>N/Av</td>
<td>1</td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td>95-63-6</td>
<td>2.35 mg/L/96hr (Green algae) (QSAR)</td>
<td>N/Av</td>
<td>N/Av</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>3.2 - 4.9 mg/L/72hr (Green algae)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>3.6 mg/L/96hr (Green algae)</td>
<td>3.4 mg/L/96hr</td>
<td>None.</td>
</tr>
<tr>
<td>2-Ethylhexyl nitrate</td>
<td>27247-96-7</td>
<td>1.57 mg/L/72hr (Green algae)</td>
<td>12.6 mg/L/72hr</td>
<td>None.</td>
</tr>
</tbody>
</table>

Ecotoxicity
Toxic to aquatic life with long lasting effects. No data is available on the product itself.

See above for individual ingredient ecotoxicity data.

Environmental effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Aquatic toxicity
No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Persistence and degradability
No data is available on the product itself.
The following ingredients are considered to be readily biodegradable: Diethylene glycol monomethyl ether.
Contains the following chemicals which are considered to be inherently biodegradable: Xylene; Ethylbenzene.
Contains the following chemicals which are not readily biodegradable: Aromatic solvent; Solvent naphtha (petroleum), heavy aromatic; Naphthalene; 1,2,4-Trimethylbenzene; 1,3,5-Trimethylbenzene.

Bioaccumulation / accumulation
No data is available on the product itself.
See the following data for ingredient information.
MATERIAL SAFETY DATA SHEET

Components | Partition coefficient n-octanol/water (log Kow) | Bioconcentration factor (BCF)
--- | --- | ---
Aromatic solvent (CAS 178535-25-6) | > 3.43, < 6.5 | N/Av
Solvent naphtha (petroleum), heavy aromatic (CAS 64742-94-5) | > 3, to < 6.5 | N/Av
1,3,5-Triethylbenzene (CAS 102-25-0) | 4.757 | N/Av
Diethylene glycol monomethyl ether (CAS 111-77-3) | - 1.18 | 3
Naphthalene (CAS 91-20-3) | 3.7 | 427 (Fathead minnow)
1,2,4-Trimethylbenzene (CAS 95-63-6) | 3.78 | 31 - 275
Xylene (CAS 1330-20-7) | 3.12 - 3.2 | 50 - 58
Ethylbenzene (CAS 100-41-4) | 3.15 | 1.1 - 1.5
2-Ethylhexyl nitrate (CAS 27247-96-7) | 5.24 | N/Av

Mobility in soil | No data is available on the product itself.

13. Disposal consideration

Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable federal, state, provincial and local regulations.

Waste from residues / unused products | Dispose of contents/container in accordance with local regulation. Empty containers should be disposed of in accordance with the requirements of the following legislation:

Contaminated packaging | Empty containers should be taken for local recycling or waste disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

TDG

UN Number | UN3082
UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Ethylhexyl nitrate; Triethylbenzene)
Transport hazard class(es) | 9
Class | None
Subsidiary risk | None
Packaging group | III
Environmental hazards | Yes
Special precautions for user | This material may be shipped as an exempted marine pollutant in accordance with TDG Section 1.45.1 and Special Provision 99. Read safety instructions, SDS and emergency procedures before handling.

ICAO/IATA

UN Number | UN3082
UN proper shipping name | Environmentally hazardous substance, liquid, n.o.s. (2-Ethylhexyl nitrate; Triethylbenzene)
Transport hazard class(es) | 9
Class | None
Subsidiary risk | None
Packaging group | III
Environmental hazards: Yes
ERG Code: 9L
Special precautions for user:
Read safety instructions, SDS and emergency procedures before handling.
Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.

Other information:
Passenger and cargo aircraft: Allowed
Cargo aircraft only: Allowed

IMDG
UN Number: UN3082
UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Ethylhexyl nitrate; Triethylbenzene)
Transport hazard class(es):
Class: 9
Subsidiary risk: None
Packaging group: III
Environmental hazards: Yes
Marine pollutant: Yes
EmS: F-A; S-F
Special precautions for user:
Read safety instructions, SDS and emergency procedures before handling.

General information:
This product meets the criteria for an environmentally hazardous material according to the IMDG Code. See Section 12 for more environmental information.

15. Regulatory information
Canadian regulations:
Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

WHMIS status: Controlled
WHMIS classification:
B3 - Combustible Liquid
D2A - Other toxic effects - Very toxic
D2B - Other Toxic Effects - Toxic

WHMIS labeling:
International Inventories:
TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.
Components listed below are present on the following International Inventory lists:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>European EINECs</th>
<th>Australia AICS</th>
<th>Philippines PICCS</th>
<th>Japan ENCS</th>
<th>Korea KECI/KECL</th>
<th>China IECSC</th>
<th>NewZealand IOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic solvent</td>
<td>178535-25-6</td>
<td>700-371-5</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>
### Material Safety Data Sheet

#### 16. Other information, including date of preparation or last revision

<table>
<thead>
<tr>
<th>Material name</th>
<th>NFPA Rating</th>
<th>HMIS Rating</th>
<th>Issue date</th>
<th>Version #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), heavy aromatic</td>
<td></td>
<td></td>
<td>05/30/2015</td>
<td>1</td>
</tr>
<tr>
<td>1,3,5-Triethylbenzene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol monomethyl ether</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naphthalene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2,4-Trimethylbenzene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Ethylhexyl nitrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NFPA Rating**

- Health: 2 Minimal
- Flammability: 2 Slight
- Instability: 0 Moderate
- Special Hazards: None

**HMIS Rating**

- Health: 2 Minimal
- Flammability: 2 Slight
- Reactivity: 0 Moderate

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**Legend**

- ACGIH: American Conference of Governmental Industrial Hygienists
- AIChE: Australian Inventory of Chemical Substances
- CAS: Chemical Abstract Services
- CEPA: Canadian Environmental Protection Act
- COC: Cleveland Open Cup
- CSA: Canadian Standards Association
- EC50: Effective Concentration 50%
- EINECS: European Inventory of Existing Commercial chemical Substances
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- IBC: Intermediate Bulk Container
- ICAO: International Civil Aviation Organisation
- IECSC: Inventory of Existing Chemical Substances
- IMDG: International Maritime Dangerous Goods
- Inh: Inhalation
- IOC: Inventory of Chemicals
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
MATERIAL SAFETY DATA SHEET

MSDS: Material Safety Data Sheet
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RTECS: Registry of Toxic Effects of Chemical Substances
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Bibliography
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2015.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2015 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.

Disclaimer
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http://www.thecompliancecenter.com

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