Deltamethrin (with Xylene) Formulation

SECTION 1. IDENTIFICATION

Product name : Deltamethrin (with Xylene) Formulation
Other means of identification : No data available

Manufacturer or supplier’s details
Company name of supplier : Merck & Co., Inc
Address : 2000 Galloping Hill Road
           Kenilworth - New Jersey - U.S.A. 07033
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations
Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2A
Skin sensitization : Sub-category 1A
Germ cell mutagenicity : Category 1B
Carcinogenicity : Category 1B
Reproductive toxicity : Category 2
Specific target organ toxicity
- single exposure : Category 3
Specific target organ toxicity
- repeated exposure (Oral) : Category 1 (Central nervous system, Immune system)
Specific target organ toxicity
- repeated exposure (Inhalation) : Category 1 (Central nervous system)
Specific target organ toxicity
- repeated exposure : Category 2 (Auditory system)
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Aspiration hazard : Category 1

GHS label elements
Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.
H302 + H332 Harmful if swallowed or if inhaled.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H361d Suspected of damaging fertility. Suspected of damaging the unborn child.
H372 Causes damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.
H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs (Auditory system) through prolonged or repeated exposure.

Precautionary Statements : Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy
to do. Continue rinsing. 
P308 + P313 IF exposed or concerned: Get medical attention. 
P331 Do NOT induce vomiting. 
P333 + P313 If skin irritation or rash occurs: Get medical attention. 
P337 + P313 If eye irritation persists: Get medical attention. 
P362 + P364 Take off contaminated clothing and wash it before reuse. 

Storage: 
P405 Store locked up. 

Disposal: 
P501 Dispose of contents and container to an approved waste disposal plant. 

Other hazards 
Vapors may form explosive mixture with air. 

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS 

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Chemical name</th>
<th>Common Name/Synonym</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>Ethylbenzene</td>
<td>Benzene, ethyl-</td>
<td>100-41-4</td>
<td>&gt;= 30 - &lt; 60 *</td>
</tr>
<tr>
<td></td>
<td>Xylene</td>
<td>Benzene, dimethyl-</td>
<td>1330-20-7</td>
<td>&gt;= 30 - &lt; 60 *</td>
</tr>
<tr>
<td></td>
<td>Deltamethrin (ISO)</td>
<td>No data available</td>
<td>52918-63-5</td>
<td>&gt;= 5 - &lt; 10 *</td>
</tr>
<tr>
<td></td>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-</td>
<td>128-37-0</td>
<td>&gt;= 1 - &lt; 5 *</td>
</tr>
<tr>
<td></td>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>No data available</td>
<td>64742-95-6</td>
<td>&gt;= 0.1 - &lt; 1 *</td>
</tr>
<tr>
<td></td>
<td>Methanol</td>
<td>Methyl alcohol</td>
<td>67-56-1</td>
<td>&gt;= 0.1 - &lt; 1 *</td>
</tr>
</tbody>
</table>

* Actual concentration or concentration range is withheld as a trade secret. 

SECTION 4. FIRST AID MEASURES 

General advice: 
In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice. 

If inhaled: 
If inhaled, remove to fresh air. 
If not breathing, give artificial respiration. 
If breathing is difficult, give oxygen. 
Get medical attention. 

In case of skin contact: 
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact:
- In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
- If easy to do, remove contact lens, if worn.
- Get medical attention.

If swallowed:
- If swallowed, DO NOT induce vomiting.
- If vomiting occurs have person lean forward.
- Call a physician or poison control center immediately.
- Rinse mouth thoroughly with water.
- Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:
- Harmful if swallowed or if inhaled.
- May be fatal if swallowed and enters airways.
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May cause genetic defects.
- May cause cancer.
- Suspected of damaging fertility. Suspected of damaging the unborn child.
- Causes damage to organs through prolonged or repeated exposure if swallowed.
- Causes damage to organs through prolonged or repeated exposure if inhaled.
- May cause damage to organs through prolonged or repeated exposure.

Protection of first-aiders:
- First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician:
- Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
- Water spray
- Alcohol-resistant foam
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media:
- High volume water jet

Specific hazards during fire fighting:
- Do not use a solid water stream as it may scatter and spread fire.
- Flash back possible over considerable distance.
- Vapors may form explosive mixtures with air.
- Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
- Carbon oxides
- Nitrogen oxides (NOx)
- Bromine compounds

Specific extinguishing methods:
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Use water spray to cool unopened containers.
- Remove undamaged containers from fire area if it is safe to do...
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SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
- Remove all sources of ignition.
- Use personal protective equipment.
- Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

**Environmental precautions**
- Avoid release to the environment.
- Prevent further leakage or spillage if safe to do so.
- Prevent spreading over a wide area (e.g., by containment or oil barriers).
- Retain and dispose of contaminated wash water.
- Local authorities should be advised if significant spillages cannot be contained.

**Methods and materials for containment and cleaning up**
- Non-sparking tools should be used.
- Soak up with inert absorbent material.
- Suppress (knock down) gases/vapors/mists with a water spray jet.
- For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
- Clean up remaining materials from spill with suitable absorbent.
- Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
- Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

**Technical measures**
- See Engineering measures under EXPOSURE CONTROLS/PERSO

**Local/Total ventilation**
- If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Use explosion-proof electrical, ventilating and lighting equipment.

**Advice on safe handling**
- Do not get on skin or clothing.
- Do not breathe mist or vapors.
- Do not swallow.
- Do not get in eyes.
- Wash skin thoroughly after handling.
- Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
- Non-sparking tools should be used.
Keep container tightly closed.
Already sensitized individuals should consult their physician regarding working with respiratory irritants or sensitizers.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:
Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition.

Materials to avoid:
Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- Flammable solids
- Pyrophoric liquids
- Pyrophoric solids
- Self-heating substances and mixtures
- Substances and mixtures which in contact with water emit flammable gases
- Explosives
- Gases

---

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>STEL 125 ppm 543 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 100 ppm 434 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 20 ppm</td>
<td>CA BC OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWAEV 20 ppm</td>
<td>CA QC OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 20 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>TWA 100 ppm 434 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 150 ppm 651 mg/m³</td>
<td>CA AB OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWAEV 100 ppm 434 mg/m³</td>
<td>CA QC OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEV 150 ppm 651 mg/m³</td>
<td>CA QC OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 100 ppm</td>
<td>CA BC OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 150 ppm</td>
<td>CA BC OEL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 100 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 150 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
</tbody>
</table>
**SAFETY DATA SHEET**

**Deltamethrin (with Xylene) Formulation**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>Sum of mandelic acid and phenyl glyoxylic acid</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>0.15 g/g creatinine</td>
<td>ACGIH BEI</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>Methylhippuric acids</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>1.5 g/g creatinine</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

<table>
<thead>
<tr>
<th>Methanol</th>
<th>67-56-1</th>
<th>Methanol</th>
<th>Urine</th>
<th>End of shift (As soon as possible after exposure ceases)</th>
<th>15 mg/l</th>
<th>ACGIH BEI</th>
</tr>
</thead>
</table>

**Engineering measures**: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

Minimize open handling.

Use explosion-proof electrical, ventilating and lighting equipment.

**Personal protective equipment**

**Respiratory protection**: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type**: Combined particulates and organic vapor type

**Hand protection**: Chemical-resistant gloves

**Remarks**: Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

**Eye protection**: Wear safety glasses with side shields or goggles.

If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

**Skin and body protection**: Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially contaminated clothing.

**Hygiene measures**: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.

When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.

Wash contaminated clothing before re-use.

The effective operation of a facility should include review of engineering controls, proper personal protective equipment,
### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>clear yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>38 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Water solubility: No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Viscosity
Viscosity, kinematic  :  No data available

Explosive properties  :  Not explosive

Oxidizing properties  :  The substance or mixture is not classified as oxidizing.

Molecular weight  :  No data available

Particle size  :  Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity  :  Not classified as a reactivity hazard.

Chemical stability  :  Stable under normal conditions.

Possibility of hazardous reactions
Flammable liquid and vapor. Vapors may form explosive mixture with air. Can react with strong oxidizing agents.

Conditions to avoid  :  Heat, flames and sparks.
Incompatible materials  :  Oxidizing agents
Hazardous decomposition products  :  No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity
Harmful if swallowed or if inhaled.

Product:
Acute oral toxicity  :  Acute toxicity estimate: 997.09 mg/kg Method: Calculation method

Acute inhalation toxicity  :  Acute toxicity estimate: 18.89 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method

Acute dermal toxicity  :  Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Components:
Ethylbenzene:
Acute oral toxicity  :  LD50 (Rat): 3,500 mg/kg
Acute inhalation toxicity  :  LC50 (Rat): 17.8 mg/l
Exposure time: 4 h  
Test atmosphere: vapor

Acute dermal toxicity: LD50 (Rabbit): > 5,000 mg/kg

**Xylene:**

Acute oral toxicity: LD50 (Rat): 3,523 mg/kg  

Acute inhalation toxicity: LC50 (Rat): 27.571 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor

Acute dermal toxicity: LD50 (Rabbit): > 4,200 mg/kg

**Deltamethrin (ISO):**

Acute oral toxicity:
- LD50 (Rat): 66.7 mg/kg
- LD50 (Rat): 9 - 139 mg/kg
- LD50 (Mouse): 19 - 34 mg/kg

Acute inhalation toxicity:
- LC50 (Rat): 0.8 mg/l  
  Exposure time: 2 h  
  Test atmosphere: dust/mist

Acute dermal toxicity: LD50 (Rabbit): 2,000 mg/kg
- LD50 (Rat): > 800 mg/kg

Acute toxicity (other routes of administration): LD50 (Rat): 2.5 mg/kg  
Application Route: Intravenous

LD50 (Mouse): 10 mg/kg  
Application Route: Intraperitoneal

**2,6-Di-tert-butyl-p-cresol:**

Acute oral toxicity: LD50 (Rat): > 6,000 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity: LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

**Solvent naphtha (petroleum), light aromatic:**

Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity:
- LC50 (Rat): > 5.61 mg/l  
  Exposure time: 4 h  
  Test atmosphere: vapor
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Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg

Methanol:
Acute oral toxicity: Acute toxicity estimate (Humans): 300 mg/kg  Method: Expert judgment
LD50 (Rat, female): 12.25 ml/kg
Acute dermal toxicity: Acute toxicity estimate (Humans): 300 mg/kg  Method: Expert judgment

Skin corrosion/irritation
Causes skin irritation.

Components:

Xylene:
Species: Rabbit  Result: Skin irritation

Deltamethrin (ISO):
Species: Rabbit  Result: No skin irritation

2,6-Di-tert-butyl-p-cresol:
Species: Rabbit  Method: OECD Test Guideline 404  Result: No skin irritation  Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light aromatic:
Species: Rabbit  Method: OECD Test Guideline 404  Result: Skin irritation

Methanol:
Species: Rabbit  Result: No skin irritation

Serious eye damage/eye irritation
Causes serious eye irritation.
Components:

Xylene:
Species: Rabbit
Result: Irritation to eyes, reversing within 21 days

Deltamethrin (ISO):
Species: Rabbit
Result: Moderate eye irritation

2,6-Di-tert-butyl-p-cresol:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Remarks: Based on data from similar materials

Solvent naphtha (petroleum), light aromatic:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Methanol:
Species: Rabbit
Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization
Not classified based on available information.

Components:

Xylene:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: negative

Deltamethrin (ISO):
Test Type: Maximization Test
Routes of exposure: Dermal
Species: Guinea pig
Result: negative

Test Type: Human repeat insult patch test (HRIPT)
Routes of exposure: Dermal
Species: Humans
Result: positive
### Deltamethrin (with Xylene) Formulation

**SAFETY DATA SHEET**

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**Version 3.5**  
Revision Date: 08/27/2021  
SDS Number: 2972480-00009  
Date of last issue: 04/09/2021  
Date of first issue: 07/02/2018

---

#### 2,6-Di-tert-butyl-p-cresol:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Human repeat insult patch test (HRIPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Humans</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

#### Solvent naphtha (petroleum), light aromatic:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Buehler Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

#### Methanol:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximization Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

#### Germ cell mutagenicity

May cause genetic defects.

#### Components:

#### Ethylbenzene:

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

- Test Type: In vitro mammalian cell gene mutation test  
  Method: OECD Test Guideline 476  
  Result: negative

- Test Type: Chromosome aberration test in vitro  
  Result: negative

#### Xylene:

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

- Test Type: Chromosome aberration test in vitro  
  Result: negative

- Test Type: In vitro mammalian cell gene mutation test  
  Result: negative
Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative

**Genotoxicity in vivo**

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Mouse
Application Route: Skin contact
Result: negative

**Deltamethrin (ISO):**

Genotoxicity in vitro

Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: DNA Repair
Test system: Escherichia coli
Result: negative

Test Type: Chromosomal aberration
Test system: Chinese hamster ovary cells
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Concentration: LOAEL: 20 mg/kg
Result: positive

Genotoxicity in vivo

Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Result: negative

Test Type: dominant lethal test
Species: Mouse
Application Route: Oral
Result: negative

Test Type: sister chromatid exchange assay
Species: Mouse
Cell type: Bone marrow
Application Route: Oral
Result: negative

**2,6-Di-tert-butyl-p-cresol:**

Genotoxicity in vitro

Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Genotoxicity in vivo

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: Ingestion
Result: negative

Solvent naphtha (petroleum), light aromatic:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: positive

Genotoxicity in vivo: Test Type: Sister chromatid exchange analysis in spermatogonia
Species: Mouse
Application Route: Intraperitoneal injection
Result: positive

Germ cell mutagenicity - Assessment: Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

Methanol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity
May cause cancer.

Components:

Ethylbenzene:
Species: Rat
Application Route: Inhalation (vapor)
Exposure time: 104 weeks
Result: positive
Remarks: The mechanism or mode of action may not be relevant in humans.

Xylene:
Species: Rat
Application Route: Ingestion
Exposure time: 103 weeks
Result: negative
Deltamethrin (ISO):
Species: Mouse, male and female
Application Route: oral (feed)
Exposure time: 104 weeks
NOAEL: 8 mg/kg body weight
LOAEL: 4 mg/kg body weight
Result: positive
Target Organs: Lymph nodes

Species: Rat, male and female
Application Route: oral (feed)
Exposure time: 2 Years
Result: negative

Species: Dog, male and female
Application Route: oral (feed)
Exposure time: 2 Years
NOAEL: 1 mg/kg body weight
Result: negative

2,6-Di-tert-butyl-p-cresol:
Species: Rat
Application Route: Ingestion
Exposure time: 22 Months
Result: negative

Solvent naphtha (petroleum), light aromatic:
Species: Mouse
Application Route: Skin contact
Exposure time: 2 Years
Result: positive

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

Methanol:
Species: Mouse
Application Route: inhalation (vapor)
Exposure time: 18 Months
Result: negative

Reproductive toxicity
Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:

Ethylbenzene:
Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapor)
Method: OECD Test Guideline 416
Result: negative
Effects on fetal development: Test Type: Embryo-fetal development
Species: Rat
Application Route: Inhalation
Method: OECD Test Guideline 414
Result: negative

Xylene:
Effects on fertility: Test Type: One-generation reproduction toxicity study
Species: Rat
Application Route: inhalation (vapor)
Result: negative

Effects on fetal development: Test Type: Embryo-fetal development
Species: Rat
Application Route: inhalation (vapor)
Result: negative

Deltamethrin (ISO):
Effects on fertility: Test Type: Three-generation reproduction toxicity study
Species: Rat
Application Route: oral (feed)
Early Embryonic Development: NOAEL: 50 mg/kg body weight
Symptoms: No effects on fertility., Embryo-fetal toxicity.
Remarks: Significant toxicity observed in testing

Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Oral
Early Embryonic Development: LOAEL: 84 - 149 mg/kg body weight
Symptoms: No effects on fertility., Embryo-fetal toxicity.

Test Type: Fertility
Species: Rat, male
Application Route: Oral
Fertility: LOAEL: 1 mg/kg body weight
Symptoms: Effects on fertility.
Target Organs: Testes

Effects on fetal development: Test Type: Development
Species: Mouse
Application Route: oral (gavage)
Developmental Toxicity: LOAEL: 1 mg/kg body weight
Result: Skeletal malformations.
Remarks: Maternal toxicity observed.

Test Type: Development
Species: Rat, female
Developmental Toxicity: NOAEL: 10 mg/kg body weight
Symptoms: No effects on fetal development.
**Species:** Rabbit, female  
**Application Route:** oral (gavage)  
**Developmental Toxicity:** NOAEL: 16 mg/kg body weight  
**Symptoms:** No effects on fetal development.

**Reproductive toxicity - Assessment:**  
Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

### 2,6-Di-tert-butyl-p-cresol:

**Effects on fertility:**  
- **Test Type:** Two-generation reproduction toxicity study  
- **Species:** Rat  
- **Application Route:** Ingestion  
- **Result:** negative

**Effects on fetal development:**  
- **Test Type:** Embryo-fetal development  
- **Species:** Rat  
- **Application Route:** Ingestion  
- **Result:** negative

### Solvent naphtha (petroleum), light aromatic:

**Effects on fertility:**  
- **Test Type:** Reproduction/Developmental toxicity screening test  
- **Species:** Rat  
- **Application Route:** inhalation (vapor)  
- **Result:** negative

**Effects on fetal development:**  
- **Test Type:** Embryo-fetal development  
- **Species:** Rat  
- **Application Route:** inhalation (vapor)  
- **Result:** negative

### Methanol:

**Effects on fertility:**  
- **Test Type:** Fertility/early embryonic development  
- **Species:** Mouse  
- **Application Route:** Ingestion  
- **Result:** negative

**Effects on fetal development:**  
- **Test Type:** Embryo-fetal development  
- **Species:** Mouse  
- **Application Route:** Ingestion  
- **Result:** positive  
- **Remarks:** The effects were seen only at maternally toxic doses.

### STOT-single exposure

May cause respiratory irritation.

**Components:**

**Xylene:**
- **Assessment:** May cause respiratory irritation.
Deltamethrin (ISO):
Assessment : May cause respiratory irritation.

Solvent naphtha (petroleum), light aromatic:
Assessment : May cause drowsiness or dizziness.

Methanol:
Target Organs : Eye, Central nervous system
Assessment : Causes damage to organs.

STOT-repeated exposure
Causes damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.
Causes damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.
May cause damage to organs (Auditory system) through prolonged or repeated exposure.

Components:

Ethylbenzene:
Routes of exposure : inhalation (vapor)
Target Organs : Auditory system
Assessment : Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

Xylene:
Routes of exposure : inhalation (vapor)
Target Organs : Auditory system
Assessment : Shown to produce significant health effects in animals at concentrations of >0.2 to 1 mg/l/6h/d.

Deltamethrin (ISO):
Routes of exposure : Ingestion
Target Organs : Central nervous system, Immune system
Assessment : Causes damage to organs through prolonged or repeated exposure.

2,6-Di-tert-butyl-p-cresol:
Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.
Repeated dose toxicity

**Components:**

**Ethylbenzene:**
- **Species:** Rat
- **LOAEL:** 0.868 mg/l
- **Application Route:** inhalation (vapor)
- **Exposure time:** 13 Weeks

**Species:** Rat
- **NOAEL:** 75 mg/kg
- **LOAEL:** 250 mg/kg
- **Application Route:** Ingestion
- **Method:** OECD Test Guideline 408

**Xylene:**
- **Species:** Rat
- **LOAEL:** > 0.2 - 1 mg/l
- **Application Route:** inhalation (vapor)
- **Exposure time:** 13 Weeks
- **Remarks:** Based on data from similar materials

**Species:** Rat
- **NOAEL:** 150 mg/kg
- **Application Route:** Ingestion
- **Exposure time:** 90 Days

**Deltamethrin (ISO):**
- **Species:** Rat, male and female
- **NOAEL:** 1 mg/kg
- **LOAEL:** 2.5 mg/kg
- **Application Route:** Oral
- **Exposure time:** 13 Weeks
- **Target Organs:** Nervous system
- **Symptoms:** hyperexcitability

**Species:** Rat
- **LOAEL:** 3 mg/m3
- **Application Route:** inhalation (dust/mist/fume)
- **Exposure time:** 2 wk / 5 d/wk / 6 h/d
- **Symptoms:** Local irritation, respiratory tract irritation

**Species:** Dog
- **NOAEL:** 0.1 mg/kg
- **LOAEL:** 1 mg/kg
- **Application Route:** Oral
- **Exposure time:** 13 Weeks
- **Target Organs:** Nervous system
- **Symptoms:** Dilatation of the pupil, Vomiting, Tremors, Diarrhea, Salivation

**Species:** Rat
- **NOAEL:** 14 mg/kg
- **LOAEL:** 54 mg/kg
Deltamethrin (with Xylene) Formulation

Application Route: Oral
Exposure time: 91 d
Target Organs: Nervous system

Species: Mouse
LOAEL: 6 mg/kg
Application Route: Oral
Exposure time: 12 Weeks
Target Organs: Immune system
Symptoms: immune system effects

2,6-Di-tert-butyl-p-cresol:
Species: Rat
NOAEL: 25 mg/kg
Application Route: Ingestion
Exposure time: 22 Months

Solvent naphtha (petroleum), light aromatic:
Species: Rat
LOAEL: 500 mg/kg
Application Route: Ingestion
Exposure time: 28 Days

Methanol:
Species: Rat
NOAEL: 1.06 mg/l
Application Route: inhalation (vapor)
Exposure time: 90 Days

Aspiration toxicity
May be fatal if swallowed and enters airways.

Components:

Ethylbenzene:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Xylene:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Solvent naphtha (petroleum), light aromatic:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

Deltamethrin (ISO):
### Inhalation
- Symptoms: respiratory tract irritation, Dizziness, Sweating, Headache, Nausea, Vomiting, anorexia, Fatigue, tingling, Palpitation, Blurred vision, muscle twitching

### Skin contact
- Symptoms: Skin irritation, Erythema, pruritis, Headache, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions

### Ingestion
- Symptoms: muscle pain, Small pupils

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

**Ethylbenzene**:
- **Toxicity to fish**: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l
  - Exposure time: 96 h
  - Method: OECD Test Guideline 203
- **Toxicity to daphnia and other aquatic invertebrates**: EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l
  - Exposure time: 48 h
- **Toxicity to algae/aquatic plants**: EC50 (Pseudokirchneriella subcapitata (green algae)): 3.6 mg/l
  - Exposure time: 96 h
- NOEC (Pseudokirchneriella subcapitata (green algae)): 3.4 mg/l
  - Exposure time: 96 h
- **Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**: NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l
  - Exposure time: 7 d
- **Toxicity to microorganisms**: EC50 (Nitrosomonas sp.): 96 mg/l
  - Exposure time: 24 h

**Xylene**:
- **Toxicity to fish**: LC50 (Oncorhynchus mykiss (rainbow trout)): 13.5 mg/l
  - Exposure time: 96 h
- **Toxicity to daphnia and other aquatic invertebrates**: EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l
  - Exposure time: 24 h
  - Method: OECD Test Guideline 202
  - Remarks: Based on data from similar materials
- **Toxicity to algae/aquatic plants**: EC50 (Skeletonema costatum (marine diatom)): 10 mg/l
  - Exposure time: 72 h
- **Toxicity to fish (Chronic toxicity)**: NOEC (Danio rerio (zebra fish)): > 0.1 - < 1 mg/l
  - Exposure time: 35 d
  - Method: OECD Test Guideline 210
  - Remarks: Based on data from similar materials
- **Toxicity to daphnia and other**: EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l
### Aquatic Invertebrates (Chronic Toxicity)
- **Exposure time:** 21 d
- **Method:** OECD Test Guideline 211
- **Remarks:** Based on data from similar materials

### Toxicity to Microorganisms
- **NOEC:** > 100 mg/l
- **Exposure time:** 3 h
- **Method:** OECD Test Guideline 209
- **Remarks:** Based on data from similar materials

### Deltamethrin (ISO)

#### Toxicity to Fish
- **LC50 (Cyprinodon variegatus (sheephead minnow)):** 0.00048 mg/l
  - **Exposure time:** 96 h
- **LC50 (Oncorhynchus mykiss (rainbow trout)):** 0.00039 mg/l
  - **Exposure time:** 96 h

#### Toxicity to Daphnia and Other Aquatic Invertebrates
- **EC50 (Mysidopsis bahia (opossum shrimp)):** 0.0037 µg/l
  - **Exposure time:** 48 h
- **EC50 (Daphnia magna (Water flea)):** 0.0035 mg/l
  - **Exposure time:** 48 h
- **LC50 (Gammarus fasciatus (freshwater shrimp)):** 0.0003 µg/l
  - **Exposure time:** 96 h

#### Toxicity to Algae/Aquatic Plants
- **EC50 (Pseudokirchneriella subcapitata (green algae)):** > 9.1 mg/l
  - **Exposure time:** 72 h
  - **Method:** OECD Test Guideline 201
  - **Remarks:** No toxicity at the limit of solubility.

### Toxicity to Fish (Chronic Toxicity)
- **NOEC (Pimephales promelas (fathead minnow)):** 0.000022 mg/l
  - **Exposure time:** 36 d
- **NOEC (Pimephales promelas (fathead minnow)):** 0.000017 mg/l
  - **Exposure time:** 260 d

### Toxicity to Daphnia and Other Aquatic Invertebrates (Chronic Toxicity)
- **NOEC (Daphnia magna (Water flea)):** 0.0041 µg/l
  - **Exposure time:** 21 d

### 2,6-Di-tert-butyl-p-cresol

#### Toxicity to Fish
- **LC50 (Danio rerio (zebra fish)):** > 0.57 mg/l
  - **Exposure time:** 96 h

#### Toxicity to Daphnia and Other Aquatic Invertebrates
- **EC50 (Daphnia magna (Water flea)):** 0.48 mg/l
  - **Exposure time:** 48 h
  - **Method:** OECD Test Guideline 202

#### Toxicity to Algae/Aquatic Plants
- **ErC50 (Pseudokirchneriella subcapitata (green algae)):** > 0.24 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity):
NOEC (Oryzias latipes (Japanese medaka)): 0.053 mg/l
Exposure time: 30 d
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOEC (Daphnia magna (Water flea)): 0.316 mg/l
Exposure time: 21 d

Toxicity to microorganisms:
EC50: > 10,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Solvent naphtha (petroleum), light aromatic:
Toxicity to fish:
LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction

Toxicity to daphnia and other aquatic invertebrates:
EL50 (Daphnia magna (Water flea)): 4.5 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants:
EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
NOELR (Daphnia magna (Water flea)): 2.6 mg/l
Exposure time: 21 d
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 211

Methanol:
Toxicity to fish:
LC50 (Lepomis macrochirus (Bluegill sunfish)): 15,400 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants:
EC50 (Pseudokirchneriella subcapitata (green algae)): 22,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity):
NOEC (Oryzias latipes (Orange-red killifish)): 15,800 mg/l
Exposure time: 200 h

Toxicity to microorganisms:
IC50: > 1,000 mg/l
Exposure time: 3 h

Persistence and degradability

Components:

Ethylbenzene:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d

Xylene:
Biodegradability: Result: Readily biodegradable.
Biodegradation: > 70 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Deltamethrin (ISO):
Stability in water: Hydrolysis: 0 %(30 d)

2,6-Di-tert-butyl-p-cresol:
Biodegradability: Result: Not readily biodegradable.
Biodegradation: 4.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

Solvent naphtha (petroleum), light aromatic:
Biodegradability: Result: Inherently biodegradable.
Biodegradation: 94 %
Exposure time: 25 d

Methanol:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 95 %
Exposure time: 20 d

Bioaccumulative potential

Components:

Ethylbenzene:
Partition coefficient: n-octanol/water: log Pow: 3.6
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Deltamethrin (with Xylene) Formulation

Xylene:
Partition coefficient: n-octanol/water : log Pow: 3.16
Remarks: Calculation

Deltamethrin (ISO):
Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1,800
Partition coefficient: n-octanol/water : log Pow: 4.6

2,6-Di-tert-butyl-p-cresol:
Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 330 - 1,800
Partition coefficient: n-octanol/water : log Pow: 5.1

Methanol:
Bioaccumulation : Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): < 10
Partition coefficient: n-octanol/water : log Pow: -0.77

Mobility in soil

Components:

Deltamethrin (ISO):
Distribution among environmental compartments : log Koc: 7.2

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : Dispose of in accordance with local regulations.
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number : UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)

IATA-DGR
UN/ID No.: UN 1992
Proper shipping name: Flammable liquid, toxic, n.o.s. (Ethylbenzene, Xylene)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: Flammable Liquids, Toxic
Packing instruction (cargo aircraft): 366
Packing instruction (passenger aircraft): 355

IMDG-Code
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene, Deltamethrin (ISO))
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)
EmS Code: F-E, S-D
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

TDG
UN number: UN 1992
Proper shipping name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethylbenzene, Xylene)
Class: 3
Subsidiary risk: 6.1
Packing group: III
Labels: 3 (6.1)
ERG Code: 131
Marine pollutant: yes (Deltamethrin (ISO))

Special precautions for user
The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:
AICS: not determined
**SECTION 16. OTHER INFORMATION**

Full text of other abbreviations

- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- ACGIH BEI: ACGIH - Biological Exposure Indices (BEI)
- CA BC OEL: Canada. British Columbia OEL
- CA QC OEL: Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
- ACGIH / TWA: 8-hour, time-weighted average
- ACGIH / STEL: Short-term exposure limit
- CA AB OEL / TWA: 8-hour Occupational exposure limit
- CA AB OEL / STEL: 15-minute occupational exposure limit
- CA BC OEL / TWA: 8-hour time weighted average
- CA BC OEL / STEL: short-term exposure limit
- CA QC OEL / TWAEV: Time-weighted average exposure value
- CA QC OEL / STEV: Short-term exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Civil Aviation Organization; IECSC - Inventory of Existing Chemicals in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Half maximal inhibitory concentration; IC50 - Half maximal inhibitory concentration; LD50 - Lethal Dose to 50% of a test population; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SATD - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations...
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.