1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name : Deltamethrin (with Xylene) Formulation

Supplier’s company name, address and phone number
Company name of supplier : MSD
Address : Kumagaya, Saitama Prefecture , Xicheng 810 MSD Co., Ltd. Menuma factory
Telephone : 048-588-8411
E-mail address : EHSDATASTEWARD@msd.com
Emergency telephone number : 1-908-423-6000

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product

2. HAZARDS IDENTIFICATION

GHS classification of chemical product
Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Skin corrosion/irritation : Category 2
Serious eye damage/eye irritation : Category 2
Skin sensitisation : Category 1
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 : Category 2 (Systemic toxicity)
Aspiration hazard : Category 1
Short-term (acute) aquatic hazard : Category 1
Long-term (chronic) aquatic : Category 1
hazard

**GHS label elements**

**Hazard pictograms**

- Danger

**Signal word**

**Hazard statements**

- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- 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.
- H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
- H373 May cause damage to organs (Systemic toxicity) through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

**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.
  - P233 Keep container tightly closed.
  - P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
  - P242 Use non-sparking tools.
  - P243 Take action to prevent static discharges.
  - P260 Do not breathe mist or vapours.
  - 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.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

- **Response:**
  - P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
  - 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 POISON CENTER/ 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 advice/attention.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

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

Other hazards which do not result in classification
Important symptoms and outlines of the emergency assumed: Vapours may form explosive mixture with air.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
<th>ENCS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>38.71</td>
<td>3-28</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>36.8</td>
<td>3-3, 3-60</td>
</tr>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>127087-87-0</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>deltamethrin (ISO)</td>
<td>52918-63-5</td>
<td>&gt;= 3 - &lt; 10</td>
<td></td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>128-37-0</td>
<td>4.8</td>
<td>3-540, 9-1805</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>&gt;= 0.25 - &lt; 1</td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>&gt;= 0.1 - &lt; 1</td>
<td>2-201</td>
</tr>
</tbody>
</table>

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 centre 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. 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. 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.

5. FIREFIGHTING MEASURES

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

Unsuitable extinguishing media: High volume water jet

Specific hazards during firefighting: Do not use a solid water stream as it may scatter and spread fire. Flash back possible over considerable distance. Vapours 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 method: Use extinguishing measures that are appropriate to local cir-
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/vapours/mists with a water spray jet.
- For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked 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.

7. HANDLING AND STORAGE

Handling
Technical measures:
- See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

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 vapours.
- 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 sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers.
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.

Avoidance of contact: Oxidizing agents
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, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

Storage
Conditions for safe storage: Keep in properly labelled 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:
Oxidizing solids
Oxidizing liquids

Packaging material: Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold limit value and permissible exposure limits for each component in the work environment

<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>OEL-M</td>
<td>50 ppm 217 mg/m3</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further information: Group 2: Substances presumed to cause reproductive toxicity in humans, Group 2B: possibly carcinogenic to humans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACL</td>
<td>20 ppm</td>
<td>JP OEL ISHL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>ACL</td>
<td>50 ppm</td>
<td>JP OEL ISHL</td>
</tr>
</tbody>
</table>
## Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Target substance</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>total (o-, m-, p-)methylhippuric acid</td>
<td>Urine</td>
<td>End of shift at end of work-week</td>
<td>800 mg/l</td>
<td>JSOH</td>
</tr>
<tr>
<td></td>
<td></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>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>Methanol</td>
<td>Urine</td>
<td>End of shift</td>
<td>20 mg/l</td>
<td>JSOH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methanol</td>
<td>Urine</td>
<td>End of shift</td>
<td>15 mg/l</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>
Engineering measures: Use explosion-proof electrical, ventilating and lighting equipment.

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.

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 vapour 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: liquid

Colour: clear

    yellow

Odour: No data available
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

Version 4.1
Revision Date: 2020/10/10
SDS Number: 2972472-00007
Date of last issue: 2020/03/24
Date of first issue: 2018/07/02

Odour Threshold : No data available
Melting point/freezing point : No data available
Boiling point, initial boiling point and boiling range : No data available
Flammability (solid, gas) : Not applicable
Flammability (liquids) : Not applicable
Lower explosion limit and upper explosion limit / flammability limit
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Flash point : 38 °C
Decomposition temperature : No data available
pH : No data available
Evaporation rate : No data available
Auto-ignition temperature : No data available
Viscosity
  Viscosity, kinematic : No data available
Solubility(ies)
  Water solubility : No data available
Partition coefficient: n-octanol/water : Not applicable
Vapour pressure : No data available
Density and / or relative density
  Relative density : No data available
Density : No data available
Relative vapour density : No data available
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Molecular weight : No data available
Particle characteristics
10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions:
- Flammable liquid and vapour.
  Vapours 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.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity: Harmful if swallowed.

Product:
- Acute oral toxicity: Acute toxicity estimate: 1,314 mg/kg
  Method: Calculation method
- Acute inhalation toxicity: Acute toxicity estimate: > 20 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour
  Method: Calculation method
- Acute dermal toxicity: Acute toxicity estimate: > 2,000 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: vapour
- 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 Information

**Exposure time:** 4 h  
**Test atmosphere:** vapour

### Acute dermal toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 (Rabbit):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>&gt; 4,200 mg/kg</td>
<td></td>
</tr>
<tr>
<td><strong>deltamethrin (ISO):</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>LD50 (Rat):</td>
<td>66.7 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50 (Rat):</td>
<td>9 - 139 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50 (Mouse):</td>
<td>19 - 34 mg/kg</td>
</tr>
<tr>
<td>Acute inhalation toxicity</td>
<td>LC50 (Rat):</td>
<td>0.8 mg/l</td>
</tr>
<tr>
<td></td>
<td>Exposure time:</td>
<td>2 h</td>
</tr>
<tr>
<td></td>
<td>Test atmosphere:</td>
<td>dust/mist</td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>LD50 (Rabbit):</td>
<td>2,000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LD50 (Rat):</td>
<td>&gt; 800 mg/kg</td>
</tr>
<tr>
<td>Acute toxicity (other routes of administration)</td>
<td>LD50 (Rat):</td>
<td>2.5 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Application Route:</td>
<td>Intravenous</td>
</tr>
<tr>
<td></td>
<td>LD50 (Mouse):</td>
<td>10 mg/kg</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol:</td>
<td>LD50 (Rat):</td>
<td>&gt; 6,000 mg/kg</td>
</tr>
<tr>
<td>Acute oral toxicity</td>
<td>Method: OECD Test Guideline 401</td>
<td></td>
</tr>
<tr>
<td>Acute dermal toxicity</td>
<td>LD50 (Rat):</td>
<td>&gt; 2,000 mg/kg</td>
</tr>
<tr>
<td>Method: OECD Test Guideline 402</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment: The substance or mixture has no acute dermal toxicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic:</td>
<td>LD50 (Rat):</td>
<td>&gt; 5,000 mg/kg</td>
</tr>
<tr>
<td>Methanol:</td>
<td>Acute toxicity estimate (Humans):</td>
<td>300 mg/kg</td>
</tr>
<tr>
<td>Method: Expert judgement</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Acute Inhalation Toxicity

**Acute toxicity estimate**: 3 mg/l  
**Exposure time**: 4 h  
**Test atmosphere**: vapour  
**Method**: Expert judgement  
**Remarks**: Based on harmonised classification in EU regulation 1272/2008, Annex VI

### Acute Dermal Toxicity

**Acute toxicity estimate (Humans)**: 300 mg/kg  
**Method**: Expert judgement

### 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 sensitisation
Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.

Components:

Xylene:
Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin contact
Species : Mouse
Result : negative

deltamethrin (ISO):
Test Type : Maximisation Test
Exposure routes : Dermal
Species : Guinea pig
Result : negative

: Human repeat insult patch test (HRIPT)
: Dermal
: Humans
: positive

2,6-Di-tert-butyl-p-cresol:
Test Type : Human repeat insult patch test (HRIPT)
Exposure routes : Skin contact
Species : Humans
Result : negative

Solvent naphtha (petroleum), light aromatic:
Test Type : Buehler Test
Exposure routes : Skin contact
### SAFETY DATA SHEET

**Deltamethrin (with Xylene) Formulation**

<table>
<thead>
<tr>
<th>Species</th>
<th>Guinea pig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

**Methanol:**
- **Test Type:** Maximisation Test
- **Exposure routes:** Skin contact
- **Species:** Guinea pig
- **Result:** negative

**Germ cell mutagenicity**
May cause genetic defects.

**Components:**

**Ethylbenzene:**
- **Genotoxicity in vitro:**
  - Test Type: Bacterial reverse mutation assay (AMES) Result: negative
  - 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

**Genotoxicity in vivo:**
- Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
  - Species: Mouse
  - Application Route: Inhalation
  - Method: OECD Test Guideline 486
  - Result: negative

**Xylene:**
- **Genotoxicity in vitro:**
  - Test Type: Bacterial reverse mutation assay (AMES) Result: negative
  - 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 spermato- 
gonia  
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 (vapour)  
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 and Application Route

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat, male and female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>oral (feed)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Dog, male and female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>oral (feed)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>NOAEL</td>
<td>1 mg/kg body weight</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>22 Months</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
</tbody>
</table>

**Carcinogenicity - Assessment:** Sufficient evidence of carcinogenicity in animal experiments

### Methanol:

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Inhalation (vapour)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>18 Months</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

### 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 (vapour)  
Method: OECD Test Guideline 416  
Result: negative

**Effects on foetal development:**

Test Type: Embryo-foetal 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
Deltamethrin (with Xylene) Formulation

Application Route: inhalation (vapour)
Result: negative

Effects on foetal development:
Test Type: Embryo-foetal development
Species: Rat
Application Route: inhalation (vapour)
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-foetal 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-foetal 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 foetal 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 foetal development

Test Type: Development
Species: Rabbit, female
Application Route: oral (gavage)
Developmental Toxicity: NOAEL: 16 mg/kg body weight
Symptoms: No effects on foetal 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 foetal development: Test Type: Embryo-foetal 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 (vapour)
Result: negative

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

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

Effects on foetal development: Test Type: Embryo-foetal 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
May cause damage to organs (Systemic toxicity) through prolonged or repeated exposure.

Components:

Ethylbenzene:
- Exposure routes: inhalation (vapour)
- 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:
- Exposure routes: inhalation (vapour)
- 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):
- Exposure routes: Ingestion
- Target Organs: Central nervous system, Immune system
- Assessment: Causes damage to organs through prolonged or repeated exposure.

- Exposure routes: inhalation (dust/mist/fume)
- Target Organs: Central nervous 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: Ingestion
- 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
## Deltamethrin (with Xylene) Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>2020/10/10</td>
<td>2972472-00007</td>
<td>2020/03/24</td>
<td>2018/07/02</td>
</tr>
</tbody>
</table>

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

- **Species**: Rat  
  - **LOAEL**: 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**: hyper excitability

- **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, Diarrhoea, Salivation

- **Species**: Rat  
  - **NOAEL**: 14 mg/kg  
  - **LOAEL**: 54 mg/kg  
  - **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 (vapour)
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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Ethylbenzene:
Deltamethrin (with Xylene) Formulation

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
- Method: OECD Test Guideline 202

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 aquatic invertebrates (Chronic toxicity):
- EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l
  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

**4-Nonylphenol, branched, ethoxylated:**

Toxicity to fish:
- LC50: 44 mg/l
  Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
- EC50: 68 mg/l
  Exposure time: 48 h
**deltamethrin (ISO):**

**Toxicity to fish**
- LC50 (Cyprinodon variegatus (sheepshead 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 (Mysisopsis 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

**M-Factor (Acute aquatic toxicity)**: 1,000,000

**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

**M-Factor (Chronic aquatic toxicity)**: 1,000,000

**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
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

Version 4.1  Revision Date: 2020/10/10  SDS Number: 2972472-00007  Date of last issue: 2020/03/24  Date of first issue: 2018/07/02

mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity):

Toxicity to fish (Chronic toxicity):

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

Toxicity to microorganisms:

Solvent naphtha (petroleum), light aromatic:

Toxicity to fish:

Toxicity to daphnia and other aquatic invertebrates:

Toxicity to algae/aquatic plants:

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

Methanol:

Toxicity to fish:

Toxicity to daphnia and other aquatic invertebrates:

Toxicity to algae/aquatic plants:

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# SAFETY DATA SHEET

## Deltamethrin (with Xylene) Formulation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>4.1</td>
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<tr>
<td>Revision Date</td>
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<tr>
<td>Date of first issue</td>
<td>2018/07/02</td>
</tr>
</tbody>
</table>

- **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

- **4-Nonylphenol, branched, ethoxylated**:
  - **Biodegradability**: Result: Not readily biodegradable.

- **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

**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

Hazardous to the ozone layer
Not applicable

Other adverse effects
No data available

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.

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.

National Regulations
Refer to section 15 for specific national regulation.

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.
15. REGULATORY INFORMATION

Related Regulations

Fire Service Law
Group 4, Type 2 petroluems, Water insoluble liquid, (1000 litre), Hazardous rank III

Chemical Substance Control Law
Priority Assessment Chemical Substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>50</td>
</tr>
<tr>
<td>Xylene</td>
<td>125</td>
</tr>
<tr>
<td>alpha-(Nonylphenyl)-omega-hydroxypoly(oxyethylene)</td>
<td>86</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-4-methylphenol</td>
<td>64</td>
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<tr>
<td>methanol</td>
<td>90</td>
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</tbody>
</table>

Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacture
Not applicable

Harmful Substances Required Permission for Manufacture
Not applicable

Substances Prevented From Impairment of Health

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<tr>
<th>Chemical name</th>
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<tr>
<td>Ethylbenzene</td>
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Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity
Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity
Not applicable

Substances Subject to be Notified Names
Article 57-2 (Enforcement Order Table 9)

<table>
<thead>
<tr>
<th>Chemical name</th>
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<th>Concentration (%)</th>
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<tbody>
<tr>
<td>Ethylbenzene</td>
<td>70</td>
<td>&gt;=30 - &lt;40</td>
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<td>136</td>
<td>&gt;=30 - &lt;40</td>
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<tr>
<td>2,6-Di-tert-butyl-4-methylphenol</td>
<td>262</td>
<td>&gt;=1 - &lt;10</td>
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<tr>
<td>Methanol</td>
<td>560</td>
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Substances Subject to be Indicated Names
Article 57 (Enforcement Order Article 18)

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<th>Chemical name</th>
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<tbody>
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<td>xylene</td>
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<td>2,6-Di-tert-butyl-4-cresol</td>
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</tbody>
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Ordinance on Prevention of Hazards Due to Specified Chemical Substances - Group 2 Substance

<table>
<thead>
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ethylbenzene

**Ordinance on Prevention of Lead Poisoning**
Not applicable

**Ordinance on Prevention of Tetraalkyl Lead Poisoning**
Not applicable

**Ordinance on Prevention of Organic Solvent Poisoning**
Organic Solvents Class 2

**Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)**
Inflammable Substance

**Poisonous and Deleterious Substances Control Law**
Not applicable

**Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof**

**Class I Designated Chemical Substances**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
<th>Concentration (%)</th>
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<td>39</td>
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<tr>
<td>xylene</td>
<td>80</td>
<td>37</td>
</tr>
<tr>
<td>poly(oxyethylene) nonylphenyl ether</td>
<td>410</td>
<td>11</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-4-cresol</td>
<td>207</td>
<td>4.8</td>
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**High Pressure Gas Safety Act**
Not applicable

**Explosive Control Law**
Not applicable

**Vessel Safety Law**
Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

**Aviation Law**
Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

**Marine Pollution and Sea Disaster Prevention etc Law**

- Bulk transportation : Noxious liquid substance(Category Y)
- Pack transportation : Classified as marine pollutant

**Narcotics and Psychotropics Control Act**
Narcotic or Psychotropic Raw Material (Export / Import Permission)
Not applicable

Specific Narcotic or Psychotropic Raw Material (Export / Import permission)
Not applicable

**Waste Disposal and Public Cleansing Law**
Specially Controlled Industrial Waste

The components of this product are reported in the following inventories:
SAFETY DATA SHEET

Deltamethrin (with Xylene) Formulation

<table>
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<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue: 2020/03/24</th>
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<td>2020/10/10</td>
<td>2972472-00007</td>
<td>Date of first issue: 2018/07/02</td>
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AICS : not determined
DSL : not determined
IECSC : not determined

16. OTHER INFORMATION

Further information

Date format: yyyy/mm/dd

Full text of other abbreviations
ACGIH : USA, ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
JP OEL ISHL : Japan. Administrative Control Levels
JSOH : Occupational exposure limits based on biological monitoring (JSOH).

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
JP OEL ISHL / ACL : Administrative Control level
JP OEL JSOH / OEL-M : Occupational Exposure Limit-Mean

AICS - 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 Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; 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; SADT - Self-Accelerating Decomposition Tem-
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.