1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name : Dichlofenthion 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 : Sub-category 1B
Serious eye damage/eye irritation : Category 1
Skin sensitisation : Category 1
Germ cell mutagenicity : Category 2
Carcinogenicity (Oral) : Category 1A
Reproductive toxicity : Category 2
Specific target organ toxicity - single exposure : Category 1 (Nervous system)
Specific target organ toxicity - single exposure : Category 3
Specific target organ toxicity - repeated exposure : Category 2 (Nervous system, Respiratory Tract)
Aspiration hazard : Category 1
Short-term (acute) aquatic : Category 1
hazard

Long-term (chronic) aquatic hazard: Category 1

GHS label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H350 May cause cancer if swallowed.
H361d Suspected of damaging the unborn child.
H370 Causes damage to organs (Nervous system).
H373 May cause damage to organs (Nervous system, Respiratory Tract) 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 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 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.
P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER/doctor.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P333 + P313 If skin irritation or rash occurs: 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.

---

**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>Tar, wood</td>
<td>91722-33-7</td>
<td>&gt;= 10 - &lt; 20</td>
<td></td>
</tr>
<tr>
<td>Rosin</td>
<td>8050-09-7</td>
<td>&gt;= 10 - &lt; 20</td>
<td>7-934</td>
</tr>
<tr>
<td>Tar, coal</td>
<td>8007-45-2</td>
<td>&gt;= 10 - &lt; 20</td>
<td>9-1741</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>9.8</td>
<td>3-28</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>9.3</td>
<td>3-3, 3-60</td>
</tr>
<tr>
<td>Dichlofenthion (ISO)</td>
<td>97-17-6</td>
<td>&gt;= 3 - &lt; 10</td>
<td>3-4112</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>&gt;= 2 - &lt; 3</td>
<td>1-410</td>
</tr>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>1.9</td>
<td>3-481</td>
</tr>
<tr>
<td>m-Cresol</td>
<td>108-39-4</td>
<td>1.1</td>
<td>3-499, 4-57</td>
</tr>
<tr>
<td>p-Cresol</td>
<td>106-44-5</td>
<td>1</td>
<td>3-499, 4-57</td>
</tr>
</tbody>
</table>

---

Vapours may form explosive mixture with air.
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 immediately.

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 immediately. 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 immediately.

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. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Suspected of causing genetic defects. May cause cancer if swallowed. Suspected of damaging the unborn child. Causes damage to organs. May cause damage to organs through prolonged or repeated exposure. Causes severe burns. Causes digestive tract burns.

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 fire-
fighting 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
Metal oxides
Nitrogen oxides (NOx)

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 so. Evacuate area.

Special protective equipment for firefighters:
In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

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 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


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)</th>
<th>Control parameters / Reference</th>
<th>Basis</th>
</tr>
</thead>
</table>


<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure</th>
<th>Permissible concentration</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tar, coal</td>
<td>ACL</td>
<td>0.2 mg/m³ (soluble in benzene)</td>
<td>JP OEL ISHL</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>ACL</td>
<td>20 ppm</td>
<td>JP OEL ISHL</td>
</tr>
<tr>
<td></td>
<td>OEL-M</td>
<td>20 ppm, 87 mg/m³</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2: Substances presumed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to cause reproductive toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in humans, Skin absorption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2B: possibly carcinogenic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to humans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>20 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>OEL-M</td>
<td>50 ppm, 217 mg/m³</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2: Substances presumed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to cause reproductive toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in humans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACL</td>
<td>50 ppm</td>
<td>JP OEL ISHL</td>
<td></td>
</tr>
<tr>
<td>OEL-M</td>
<td>50 ppm, 217 mg/m³</td>
<td>JP OEL JSOH</td>
<td></td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3: Substances suspected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to cause reproductive toxicity</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>in humans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>100 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>STEL</td>
<td>150 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>Dichlofenthion (ISO)</td>
<td>TWA</td>
<td>20 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Wipe limit</td>
<td>200 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>OEL-C</td>
<td>2 mg/m³</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>2 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Phenol</td>
<td>OEL-M</td>
<td>5 ppm, 19 mg/m³</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3: Substances suspected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to cause reproductive toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in humans, Skin absorption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TWA</td>
<td>5 ppm</td>
<td>ACGIH</td>
<td></td>
</tr>
<tr>
<td>m-Cresol</td>
<td>ACL</td>
<td>5 ppm</td>
<td>JP OEL ISHL</td>
</tr>
<tr>
<td></td>
<td>OEL-M</td>
<td>5 ppm, 22 mg/m³</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin absorption</td>
<td>TWA (Inhalable fraction and vapor)</td>
<td>20 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>p-Cresol</td>
<td>ACL</td>
<td>5 ppm</td>
<td>JP OEL ISHL</td>
</tr>
<tr>
<td></td>
<td>OEL-M</td>
<td>5 ppm, 22 mg/m³</td>
<td>JP OEL JSOH</td>
</tr>
<tr>
<td>Further information:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin absorption</td>
<td>TWA (Inhalable fraction and vapor)</td>
<td>20 mg/m³</td>
<td>ACGIH</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>Phenol</td>
<td>108-95-2</td>
<td>Phenol</td>
<td>Urine</td>
<td>End of shift</td>
<td>250 mg/g Creatinine</td>
<td>JSOH</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phenol</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
<td>250 mg/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 workweek</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>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>
</tbody>
</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 vapour type

**Hand protection**: Chemical-resistant gloves

**Material**: 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>viscous liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>dark, brown</td>
</tr>
<tr>
<td>Odour</td>
<td>strong</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point, initial boiling point and boiling range</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>Lower explosion limit and upper explosion limit / flammability limit</td>
<td>No data available</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>Flash point</td>
<td>30 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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 : 1,009 - 1,051 g/cm³ (20 °C)
Relative vapour density : No data available
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Particle characteristics
Particle size : Not applicable

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: 1,713 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
### Acute dermal toxicity

**Method:** Calculation method

**Acute toxicity estimate:** > 2,000 mg/kg

### Components:

**Tar, wood:**

**Acute oral toxicity**

- **LD50 (Rat):** > 2,000 mg/kg  
  **Method:** OECD Test Guideline 423  
  **Assessment:** The substance or mixture has no acute oral toxicity

**Acute dermal toxicity**

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

**Rosin:**

**Acute oral toxicity**

- **LD50 (Rat):** 2,800 mg/kg

**Acute dermal toxicity**

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

**Tar, coal:**

**Acute oral toxicity**

- **LD50 (Rat):** 1,700 mg/kg

**Acute dermal toxicity**

- **LD50 (Rabbit):** > 5,000 mg/kg

**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  
  **LD50 (Rabbit):** 270 mg/kg

**Acute inhalation toxicity**

- **LC50 (Rat):** 27.571 mg/l  
  **Exposure time:** 4 h  
  **Test atmosphere:** vapour

**Acute dermal toxicity**

- **LD50 (Rabbit):** > 4,200 mg/kg

**Dichlofenthion (ISO):**

**Acute oral toxicity**

- **LD50 (Rat):** 172 mg/kg  
  **LD50 (Rabbit):** 270 mg/kg

**Acute inhalation toxicity**

- **LC50 (Rat):** 1.75 mg/l
Dichlofenthion Formulation

Acute dermal toxicity: LD50 (Rat): 355 mg/kg
                     LD50 (Rabbit): 6,000 mg/kg

Sodium hydroxide:
Acute inhalation toxicity: Assessment: Corrosive to the respiratory tract.

Phenol:
Acute oral toxicity: LD50 (Rat): 650 mg/kg
                    Method: OECD Test Guideline 401
                    Acute toxicity estimate (Humans): 140 - 290 mg/kg
                    Method: Expert judgement

Acute inhalation toxicity: LC0 (Rat): 0.9 mg/l
                           Exposure time: 8 h
                           Test atmosphere: dust/mist
                           Assessment: Corrosive to the respiratory tract.
                           Acute toxicity estimate (Humans): > 0.9 mg/l
                           Exposure time: 4 h
                           Test atmosphere: dust/mist
                           Method: Expert judgement

Acute dermal toxicity: LD50 (Rabbit): 660 mg/kg
                      Method: OECD Test Guideline 402
                      Acute toxicity estimate (Humans): 300 mg/kg
                      Method: Expert judgement

m-Cresol:
Acute oral toxicity: LD50 (Rat): 121 mg/kg
                    Remarks: Based on data from similar materials

Acute inhalation toxicity: Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity: LD50 (Rabbit): 301 mg/kg
                       Remarks: Based on data from similar materials

p-Cresol:
Acute oral toxicity: LD50 (Rat): 172 - 250 mg/kg

Acute inhalation toxicity: Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity: LD50 (Rabbit): 213 - 426 mg/kg

Skin corrosion/irritation
Causes severe burns.
Components:

**Tar, wood:**
Species: reconstructed human epidermis (RhE)
Method: OECD Test Guideline 439
Species: reconstructed human epidermis (RhE)
Method: OECD Test Guideline 431
Result: Skin irritation

**Rosin:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**Tar, coal:**
Species: Rabbit
Result: Mild skin irritation

**Xylene:**
Species: Rabbit
Result: Skin irritation

**Dichlofenthion (ISO):**
Result: Mild skin irritation
Remarks: Based on data from similar materials

**Sodium hydroxide:**
Result: Corrosive after 3 minutes or less of exposure

**Phenol:**
Species: Rabbit
Result: Corrosive after 3 minutes to 1 hour of exposure

**m-Cresol:**
Species: Rabbit
Result: Corrosive after 3 minutes to 1 hour of exposure

**p-Cresol:**
Species: Rabbit
Result: Corrosive after 3 minutes to 1 hour of exposure

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

Tar, wood:
Result: Irritation to eyes, reversing within 7 days

Rosin:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Tar, coal:
Species: Human
Result: Irreversible effects on the eye

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

Sodium hydroxide:
Result: Irreversible effects on the eye
Remarks: Based on skin corrosivity.

Phenol:
Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405

m-Cresol:
Species: Rabbit
Result: Irreversible effects on the eye

p-Cresol:
Species: Rabbit
Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.

Components:

Tar, wood:
Test Type: Local lymph node assay (LLNA)
Exposure routes: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result : positive
Assessment : Probability or evidence of low to moderate skin sensitisation rate in humans

Rosin:
Assessment : Probability or evidence of skin sensitisation in humans
Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

Tar, coal:
Test Type : Local lymph node assay (LLNA)
Exposure routes : Skin contact
Species : Mouse
Method : OECD Test Guideline 429
Result : positive
Remarks : Based on data from similar materials
Assessment : Probability or evidence of skin sensitisation in humans

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

Dichlofenthion (ISO):
Exposure routes : Dermal
Assessment : Does not cause skin sensitisation.
Result : Weak sensitizer
Remarks : Based on data from similar materials

Sodium hydroxide:
Test Type : Human repeat insult patch test (HRIPT)
Exposure routes : Skin contact
Result : negative

Phenol:
Test Type : Buehler Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : negative

p-Cresol:
Test Type : Draize Test
Exposure routes : Skin contact
Species : Guinea pig
Result : negative
Germ cell mutagenicity
Suspected of causing genetic defects.

**Components:**

**Tar, wood:**
- Genotoxicity in vitro:
  - Test Type: Bacterial reverse mutation assay (AMES)
  - Method: OECD Test Guideline 471
  - Result: negative

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

**Tar, coal:**
- Genotoxicity in vitro:
  - Test Type: Bacterial reverse mutation assay (AMES)
  - Method: OECD Test Guideline 471
  - Result: positive

Remarks:
Based on data from similar materials

**Germ cell mutagenicity - Assessment:**
Positive result(s) from in vivo non-mammalian somatic cell mutagenicity tests, supported by positive results from in vitro mutagenicity assays.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

**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

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

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

**Genotoxicity in vitro**

**Phenol:**

| Test Type: Chromosome aberration test in vitro  
| Method: OECD Test Guideline 473  
| Result: positive |

| Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
| Species: Mouse  
| Application Route: Intraperitoneal injection  
| Method: OECD Test Guideline 474  
| Result: positive  
| Remarks: Annex VI From 1272/2008 |

**Germ cell mutagenicity - Assessment**

Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

**m-Cresol:**

| Test Type: Chromosome aberration test in vitro  
| Method: OECD Test Guideline 473  
| Result: positive  
| Test Type: Bacterial reverse mutation assay (AMES)  
| Method: OECD Test Guideline 471  
| Result: negative |

| Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
| Species: Mouse  
| Application Route: Ingestion  
| Method: OECD Test Guideline 475  
| Result: negative |

**p-Cresol:**

| Test Type: Chromosome aberration test in vitro  
| Method: OECD Test Guideline 473  
| Result: positive  
| Test Type: In vitro mammalian cell gene mutation test  
| Method: OECD Test Guideline 476  
| Result: negative |
Genotoxicity in vivo:
Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 478
Result: negative

Carcinogenicity:
May cause cancer if swallowed.

Components:

Tar, coal:
Species: Mouse
Application Route: Ingestion
Exposure time: 2 Years
Result: positive
Carcinogenicity - Assessment: Positive evidence from human epidemiological studies (oral)
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

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

Phenol:
Species: Mouse
Application Route: Ingestion
Exposure time: 103 weeks
Method: OECD Test Guideline 451
Result: negative

m-Cresol:
Species: Mouse, males
Application Route: Ingestion
Exposure time: 105 weeks
Result: equivocal
Remarks: Based on data from similar materials

Species: Mouse, female
Application Route: Ingestion
Exposure time: 106 - 107 weeks
SAFETY DATA SHEET

Dichlofenthion Formulation

Result:  positive
Remarks: Based on data from similar materials

Carcinogenicity - Assessment: Weight of evidence does not support classification as a carcinogen

p-Cresol:
Species: Mouse
Application Route: Ingestion
Exposure time: 106 - 107 weeks
Result: negative
Remarks: Based on data from similar materials

Reproductive toxicity
Suspected of damaging the unborn child.

Components:

Rosin:
Effects on fertility: Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 421
Result: negative

Effects on foetal development: Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 421
Result: negative

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
Application Route: inhalation (vapour)
Result: negative
### Dichlofenthion Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>1552600-00010</td>
<td>2021/04/09</td>
<td>2017/04/14</td>
</tr>
</tbody>
</table>

| Test Type: Embryo-foetal development | Test Type: Development |
| Species: Rat | Species: Mouse |
| Application Route: Inhalation (vapour) | Application Route: Intraperitoneal |
| Result: negative | Developmental Toxicity: LOAEL: 80 mg/kg body weight |
| Remarks: Based on data from similar materials | Developmental Toxicity: LOAEL: 10 mg/kg body weight |
| Remarks: Based on data from similar materials | Reduced foetal weight, Embryotoxic effects. |

### Reproductive toxicity - Assessment

#### Phenol:

| Test Type: Two-generation reproduction toxicity study | Test Type: Two-generation reproduction toxicity study |
| Species: Rat | Species: Rat |
| Application Route: Ingestion | Application Route: Ingestion |
| Result: negative | Result: negative |

#### m-Cresol:

| Test Type: Prenatal development toxicity study (teratogenicity) | Test Type: Two-generation reproduction toxicity study |
| Species: Rat | Species: Rat |
| Application Route: Ingestion | Application Route: Ingestion |
| Result: negative | Result: negative |

#### p-Cresol:

| Test Type: Two-generation reproduction toxicity study | Test Type: Two-generation reproduction toxicity study |
| Species: Rat | Species: Rat |
| Application Route: Ingestion | Application Route: Ingestion |
| Result: negative | Result: negative |

### Effects on fertility

**Phenol:**

- Reduced foetal weight, Embryotoxic effects.
- No teratogenic effects.
- Suspected of damaging the unborn child.

**m-Cresol:**

- Reduced foetal weight, Embryotoxic effects.
- No teratogenic effects.

**p-Cresol:**

- Reduced foetal weight, Embryotoxic effects.
SAFETY DATA SHEET

Dichlofenthion Formulation

Version: 5.1  Revision Date: 2021/08/27  SDS Number: 1552600-00010  Date of last issue: 2021/04/09
Date of first issue: 2017/04/14

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

STOT - single exposure
May cause respiratory irritation.
Causes damage to organs (Nervous system).

Components:

Tar, coal:
- Exposure routes: Ingestion
- Target Organs: Nervous system
- Assessment: Shown to produce significant health effects in animals at concentrations of 300 mg/kg bw or less.

Xylene:
- Assessment: May cause respiratory irritation.

STOT - repeated exposure
May cause damage to organs (Nervous system, Respiratory Tract) through prolonged or repeated exposure.

Components:

Tar, coal:
- Target Organs: Respiratory Tract
- Assessment: Shown to produce significant health effects in animals at concentrations of >0.02 to 0.2 mg/l/6h/d.

Exposure routes: inhalation (dust/mist/fume)
- Target Organs: Respiratory Tract
- Assessment: Shown to produce significant health effects in animals at concentrations of >0.02 to 0.2 mg/l/6h/d.

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.

Dichlofenthion (ISO):
- Target Organs: Nervous system
Assessment : Causes damage to organs through prolonged or repeated exposure.
Remarks : Based on human experience.

**Phenol:**
Target Organs : Central nervous system, Kidney, Liver, Skin
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity**

**Components:**

**Ethylbenzene:**
Species : Rat
LOAEL : 0.868 mg/l
Application Route : inhalation (vapour)
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 (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

**Dichlofenthion (ISO):**
Species : Rat
NOAEL : 0.75 mg/kg
Application Route : Oral
Exposure time : 90 d

Species : Dog
NOAEL : 0.75 mg/kg
Application Route : Oral
Exposure time : 90 d

**Phenol:**
Species : Rat
LOAEL : 300 mg/kg
Application Route : Ingestion
Exposure time: 90 Days  
Method: OECD Test Guideline 408

Species: Rat
NOAEL: >= 0.1 mg/l
Application Route: inhalation (vapour)
Exposure time: 74 Days

Species: Rabbit
LOAEL: 260 mg/kg
Application Route: Skin contact
Exposure time: 18 Days

m-Cresol:
Species: Rat
NOAEL: 150 mg/kg
Application Route: Ingestion
Exposure time: 13 Weeks
Method: OECD Test Guideline 408

p-Cresol:
Species: Rat
NOAEL: 50 mg/kg
LOAEL: 175 mg/kg
Application Route: Ingestion
Exposure time: 90 Days
Method: OECD Test Guideline 408

Aspiration toxicity
May be fatal if swallowed and enters airways.

Product:
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.

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.

Experience with human exposure

Components:

Dichlofenthion (ISO):
Skin contact:
Symptoms: irritating, central nervous system effects, sweating
**Remarks:** Can be absorbed through skin. May cause sensitisation by skin contact.

**Eye contact:** Symptoms: constriction of pupils, central nervous system effects

**Ingestion:** Symptoms: Nausea, Diarrhoea, Vomiting, sweating, Lachrymation, constriction of pupils, Central nervous system depression, Gastrointestinal disturbance, bronchospasm, central nervous system effects, Oedema

### 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

**Components:**

**Tar, wood:**

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): 28 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202

- **Toxicity to algae/aquatic plants:** EC50 (Desmodesmus subspicatus (green algae)): 17 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201

**Rosin:**

- **Toxicity to fish:** LL50 (Danio rerio (zebra fish)): > 1 - < 10 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 203

- **Toxicity to daphnia and other aquatic invertebrates:** EL50 (Daphnia magna (Water flea)): 911 mg/l
  Exposure time: 48 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 202

- **Toxicity to algae/aquatic plants:** NOELR (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l
  Exposure time: 72 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201

- **Toxicity to microorganisms:** EC50: > 10,000 mg/l
  Exposure time: 3 h
  Method: OECD Test Guideline 209
<table>
<thead>
<tr>
<th>Substance</th>
<th>Toxicity to fish</th>
<th>Exposure time</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>LL50 (Danio rerio (zebra fish)): &gt; 250 mg/l</td>
<td>96 h</td>
<td>OECD Test Guideline 203</td>
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<td></td>
<td>NOELR (Desmodesmus subspicatus (green algae)): 5 mg/l</td>
<td>72 h</td>
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<td>Ethylbenzene</td>
<td>LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l</td>
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<td>Xylene</td>
<td>EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l</td>
<td>48 h</td>
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<td>EC50 (Pseudokirchneriella subcapitata (green algae)): 3.6 mg/l</td>
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<td>NOEC (Pseudokirchneriella subcapitata (green algae)): 3.4 mg/l</td>
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<td>NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l</td>
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<td>EC50 (Nitrosomonas sp.): 96 mg/l</td>
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<td>Based on data from similar materials</td>
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<tr>
<td></td>
<td>Exposition time: 24 h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l</td>
<td>7 d</td>
<td>OECD Test Guideline 201</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td></td>
<td>Exposition time: 7 d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on data from similar materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC50 (Nitrosomonas sp.): 96 mg/l</td>
<td>24 h</td>
<td>OECD Test Guideline 201</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>
## Dichlofenthion Formulation

<table>
<thead>
<tr>
<th>plants</th>
<th>Exposure time: 72 h</th>
</tr>
</thead>
</table>
| 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 |

### Dichlofenthion (ISO):

| Toxicity to fish | LC50 (No species specified): 0.64 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203 |
|---|---|
| Toxicity to daphnia and other aquatic invertebrates | EC50 (Daphnia magna (Water flea)): 0.0011 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202 |
| M-Factor (Acute aquatic toxicity) | 100 |
| M-Factor (Chronic aquatic toxicity) | 100 |

### Phenol:

| Toxicity to fish | LC50 (Pimephales promelas (fathead minnow)): 24.9 mg/l  
Exposure time: 96 h |
|---|---|
| Toxicity to daphnia and other aquatic invertebrates | EC50 (Ceriodaphnia dubia (water flea)): 3.1 mg/l  
Exposure time: 48 h |
| Toxicity to algae/aquatic plants | EC50 (Selenastrum capricornutum (green algae)): 61.1 mg/l  
Exposure time: 96 h |
| Toxicity to fish (Chronic toxicity) | NOEC: 0.077 mg/l  
Exposure time: 60 d |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | NOEC (Daphnia magna (Water flea)): 10 mg/l  
Exposure time: 16 d |
| Toxicity to microorganisms | IC50 (Nitrosomonas sp.): 21 mg/l  
Exposure time: 24 h |
### m-Cresol:

**Toxicity to fish**
- LC50 (Onchorhynchus mykiss (rainbow trout)): 8.6 mg/l
- Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia pulex (Water flea)): > 99.5 mg/l
- Exposure time: 48 h

**Toxicity to fish (Chronic toxicity)**
- NOEC (Pimephales promelas (fathead minnow)): 1.35 mg/l
- Exposure time: 32 d
- Remarks: Based on data from similar materials

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
- NOEC (Daphnia magna (Water flea)): 1 mg/l
- Exposure time: 21 d
- Remarks: Based on data from similar materials

### p-Cresol:

**Toxicity to fish**
- LC50 (Onchorhynchus mykiss (rainbow trout)): 7.4 mg/l
- Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**
- EC50 (Daphnia magna (Water flea)): 7.7 mg/l
- Exposure time: 48 h
- Method: DIN 38412

**Toxicity to algae/aquatic plants**
- EC50 (Desmodesmus subspicatus (green algae)): 7.8 mg/l
- Exposure time: 48 h
- EC10 (Desmodesmus subspicatus (green algae)): 2.3 mg/l
- Exposure time: 48 h

**Toxicity to fish (Chronic toxicity)**
- NOEC (Pimephales promelas (fathead minnow)): 1.35 mg/l
- Exposure time: 32 d

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**
- NOEC (Daphnia magna (Water flea)): 1 mg/l
- Exposure time: 21 d

**Toxicity to microorganisms**
- IC50 (Nitrosomonas sp.): 260 mg/l
- Exposure time: 24 h

### Persistence and degradability

#### Components:

**Tar, wood:**
- Biodegradability: Result: Not readily biodegradable.
- Biodegradation: 47 %
- Exposure time: 28 d
- Method: OECD Test Guideline 301B

**Rosin:**
- Biodegradability: Result: Readily biodegradable.
- Biodegradation: 71 %
- Exposure time: 28 d
- Method: OECD Test Guideline 301D
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

Phenol:
Biodegradability: Result: Readily biodegradable. Biodegradation: 62 % Exposure time: 10 d Method: OECD Test Guideline 301C

m-Cresol:

p-Cresol:
Biodegradability: Result: Readily biodegradable. Biodegradation: 100 % Exposure time: 8 d

Bioaccumulative potential

Components:

Tar, wood:
Partition coefficient: n-octanol/water: log Pow: 0.2 - 2.02

Rosin:
Bioaccumulation: Species: Oncorhynchus mykiss (rainbow trout) Bioconcentration factor (BCF): < 100

Partition coefficient: n-octanol/water: log Pow: 3 - 6.2

Tar, coal:
Partition coefficient: n-octanol/water: Remarks: No data available

Ethylbenzene:
Partition coefficient: n-octanol/water: log Pow: 3.6
Xylene:
Partition coefficient: n-octanol/water: log Pow: 3.16
Remarks: Calculation

Dichlofenthion (ISO):
Partition coefficient: n-octanol/water: log Pow: 5.14

Phenol:
Bioaccumulation: Species: Fish
Bioconcentration factor (BCF): 17.5
Method: OECD Test Guideline 305
Partition coefficient: n-octanol/water: log Pow: 1.47

m-Cresol:
Bioaccumulation: Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): 17 - 20
Partition coefficient: n-octanol/water: log Pow: 1.96

p-Cresol:
Bioaccumulation: Species: Leuciscus idus (Golden orfe)
Bioconcentration factor (BCF): 17 - 20
Remarks: Based on data from similar materials
Partition coefficient: n-octanol/water: log Pow: 1.94

Mobility in soil
No data available

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 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(Sodium hydroxide, Ethylbenzene)
Class : 8
Subsidiary risk : 3
Packing group : II
Labels : 8 (3)

IATA-DGR
UN/ID No. : UN 2920
Proper shipping name : Corrosive liquid, flammable, n.o.s.
(Sodium hydroxide, Ethylbenzene)
Class : 8
Subsidiary risk : 3
Packing group : II
Labels : Corrosive, Flammable Liquids
Packing instruction (cargo aircraft) : 855
Packing instruction (passenger aircraft) : 851

IMDG-Code
UN number : UN 2920
Proper shipping name : CORROSIVE LIQUID, FLAMMABLE, N.O.S.
(Sodium hydroxide, Ethylbenzene, Dichlofenthion (ISO))
Class : 8
Subsidiary risk : 3
Packing group : II
Labels : 8 (3)
EmS Code : F-E, S-C
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 petroleums, Water insoluble liquid, (1000 litre), Hazardous rank III
SAFETY DATA SHEET

Dichlofenthion Formulation

Chemical Substance Control Law
Priority Assessment Chemical Substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal tar</td>
<td>162</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>50</td>
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<tr>
<td>Xylene</td>
<td>125</td>
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<tr>
<td>Cresol</td>
<td>156</td>
</tr>
<tr>
<td>Phenol</td>
<td>62</td>
</tr>
</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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td></td>
</tr>
</tbody>
</table>

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>
<th>Number</th>
<th>Concentration (%)</th>
</tr>
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<tbody>
<tr>
<td>Rosin</td>
<td>632</td>
<td>&gt;=10 - &lt;20</td>
</tr>
<tr>
<td>Coal tar</td>
<td>174</td>
<td>&gt;=10 - &lt;20</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>70</td>
<td>&gt;=1 - &lt;10</td>
</tr>
<tr>
<td>Xylene</td>
<td>136</td>
<td>&gt;=1 - &lt;10</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>319</td>
<td>&gt;=1 - &lt;10</td>
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<tr>
<td>Phenol</td>
<td>474</td>
<td>&gt;=1 - &lt;10</td>
</tr>
<tr>
<td>Cresol</td>
<td>141</td>
<td>&gt;=1 - &lt;10</td>
</tr>
</tbody>
</table>

Substances Subject to be Indicated Names
Article 57 (Enforcement Order Article 18)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Rosin</td>
<td>632</td>
</tr>
<tr>
<td>coal tar</td>
<td>174</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>70</td>
</tr>
<tr>
<td>xylene</td>
<td>136</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>319</td>
</tr>
<tr>
<td>phenol</td>
<td>474</td>
</tr>
<tr>
<td>cresol</td>
<td>141</td>
</tr>
</tbody>
</table>

Ordinance on Prevention of Hazards Due to Specified Chemical Substances - Group 2 Substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>coal tar</td>
<td></td>
</tr>
</tbody>
</table>
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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</thead>
<tbody>
<tr>
<td>ethylbenzene</td>
<td>53</td>
<td>9.8</td>
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<tr>
<td>xylene</td>
<td>80</td>
<td>9.3</td>
</tr>
<tr>
<td>phenol</td>
<td>349</td>
<td>1.9</td>
</tr>
<tr>
<td>cresol</td>
<td>86</td>
<td>2.1</td>
</tr>
</tbody>
</table>

High Pressure Gas Safety Act
Not applicable

Explosive Control Law
Not applicable

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

Aviation Law
Corrosive substances (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 X)
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:

AICS : not determined
**SAFETY DATA SHEET**

**Dichlofenthion 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>
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<tbody>
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<td>2021/08/27</td>
<td>1552600-00010</td>
<td>2021/04/09</td>
<td>2017/04/14</td>
</tr>
</tbody>
</table>

- DSL : not determined
- IECSC : not determined

### 16. OTHER INFORMATION

**Further information**

Sources of key data used to compile the Safety Data Sheet:


**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
- ACGIH / C : Ceiling limit
- JP OEL ISHL / ACL : Administrative Control level
- JP OEL JSOH / OEL-M : Occupational Exposure Limit-Mean
- JP OEL JSOH / OEL-C : Occupational Exposure Limit-Ceiling

**Abbreviations**

- 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 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, Evalua-
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.

JP / EN