SAFETY DATA SHEET

Dichlofenthion Formulation

SECTION 1. IDENTIFICATION

Product name : Dichlofenthion Formulation
Other means of identification : No data available

Manufacturer or supplier's details
Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

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

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids : Category 3
Acute toxicity (Oral) : Category 4
Skin corrosion : Category 1B
Serious eye damage : Category 1
Skin sensitization : 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 1 (Nervous system)
Specific target organ toxicity - repeated exposure : Category 2 (Central nervous system, Kidney, Liver, Skin, Respiratory Tract, Auditory system)
Aspiration hazard : Category 1

GHS label elements
SAFETY DATA SHEET

Dichlofenthion Formulation

Hazard pictograms:

Signal Word: Danger

Hazard Statements:
H226 Flammable liquid and vapor.
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).
H372 Causes damage to organs (Nervous system) through prolonged or repeated exposure.
H373 May cause damage to organs (Central nervous system, Kidney, Liver, Skin, Respiratory Tract, Auditory system) through prolonged or repeated exposure.

Precautionary Statements:

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

Response:
P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER.
P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER.
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.
P308 + P311 IF exposed or concerned: Call a doctor.
P333 + P313 If skin irritation or rash occurs: Get medical attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:
P405 Store locked up.

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

Other hazards
Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Components</th>
<th>Chemical name</th>
<th>Common Name/Synonym</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tar, wood</td>
<td>No data available</td>
<td>91722-33-7</td>
<td>&gt;= 10 - &lt; 30 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rosin</td>
<td>No data available</td>
<td>8050-09-7</td>
<td>&gt;= 10 - &lt; 30 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tar, coal</td>
<td>No data available</td>
<td>8007-45-2</td>
<td>&gt;= 10 - &lt; 30 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Benzene, ethyl-</td>
<td>100-41-4</td>
<td>&gt;= 5 - &lt; 10 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>Benzene, dimethy-</td>
<td>1330-20-7</td>
<td>&gt;= 5 - &lt; 10 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dichlofenthion (ISO)</td>
<td>No data available</td>
<td>97-17-6</td>
<td>&gt;= 1 - &lt; 5 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>Caustic soda</td>
<td>1310-73-2</td>
<td>&gt;= 2 - &lt; 5 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenol</td>
<td>Monohydroxybenzene</td>
<td>108-95-2</td>
<td>&gt;= 1 - &lt; 3 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m-Cresol</td>
<td>Phenol, 3-methyl-</td>
<td>108-39-4</td>
<td>&gt;= 1 - &lt; 5 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p-Cresol</td>
<td>Phenol, 4-methyl-</td>
<td>106-44-5</td>
<td>&gt;= 1 - &lt; 5 *</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 4. FIRST AID MEASURES

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

If inhaled:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention 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 center immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Causes digestive tract burns.
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.
Causes damage to organs through prolonged or repeated exposure.
Causes severe 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.

SECTION 5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Water spray</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alcohol-resistant foam</td>
</tr>
<tr>
<td></td>
<td>Carbon dioxide (CO2)</td>
</tr>
<tr>
<td></td>
<td>Dry chemical</td>
</tr>
<tr>
<td>Unsuitable extinguishing media</td>
<td>High volume water jet</td>
</tr>
<tr>
<td>Specific hazards during fire fighting</td>
<td>Do not use a solid water stream as it may scatter and spread fire.</td>
</tr>
<tr>
<td></td>
<td>Flash back possible over considerable distance.</td>
</tr>
<tr>
<td></td>
<td>Vapors may form explosive mixtures with air.</td>
</tr>
<tr>
<td></td>
<td>Exposure to combustion products may be a hazard to health.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous combustion products</th>
<th>Carbon oxides</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metal oxides</td>
</tr>
<tr>
<td></td>
<td>Nitrogen oxides (NOx)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific extinguishing methods</th>
<th>Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use water spray to cool unopened containers.</td>
</tr>
<tr>
<td></td>
<td>Remove undamaged containers from fire area if it is safe to do so.</td>
</tr>
<tr>
<td></td>
<td>Evacuate area.</td>
</tr>
</tbody>
</table>
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Special protective equipment for fire-fighters:
- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

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

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

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

SECTION 7. HANDLING AND STORAGE

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

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

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosin</td>
<td>8050-09-7</td>
<td>TWA (Inhalable particulate matter)</td>
<td>0.001 mg/m³ (total Resin acids)</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Tar, coal</td>
<td>8007-45-2</td>
<td>TWA</td>
<td>0.15 mg/m³</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>STEL</td>
<td>125 ppm 543 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm 434 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>20 ppm</td>
<td>CA QC OEL</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>TWA</td>
<td>100 ppm 434 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>150 ppm 651 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>100 ppm 434 mg/m³</td>
<td>CA QC OEL</td>
</tr>
</tbody>
</table>
## Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>Phenol</td>
<td>Urine</td>
<td>End of shift (As soon as possible after exposure ceases)</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>Methylhippu</td>
<td>Urine</td>
<td>End of shift 1.5 g/g</td>
</tr>
</tbody>
</table>
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<table>
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<tr>
<th>Version</th>
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<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
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<tbody>
<tr>
<td>8.0</td>
<td>04/04/2023</td>
<td>1552609-00014</td>
<td>10/01/2022</td>
<td>04/14/2017</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Sample</th>
<th>Medium</th>
<th>BEI</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>0.15 g/g creatinine</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 vapor type

#### Hand protection

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.

#### 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.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Viscous liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Dark, brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Strong</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>30 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>1.009 - 1.051 g/cm³ (20 °C)</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Water solubility</td>
</tr>
<tr>
<td></td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
## Section 10. Stability and Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>Not classified as a reactivity hazard.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Stable under normal conditions.</td>
</tr>
</tbody>
</table>
| Possibility of hazardous rea-
| tions                        | Flammable liquid and vapor. Vapors may form ex-
|                              | plosive mixture with air. Can react with strong
|                              | oxidizing agents.                                |
| Conditions to avoid          | Heat, flames and sparks.                         |
| Incompatible materials       | Oxidizing agents                                 |
| Hazardous decomposition pro-
| ducts                        | No hazardous decomposition products are known.   |

## Section 11. Toxicological Information

### Information on likely routes of exposure

- **Inhalation**
- **Skin contact**
- **Ingestion**
- **Eye contact**

**Acute toxicity**

Harmful if swallowed.

**Product:**

**Acute oral toxicity**: Acute toxicity estimate: 1,450 mg/kg
Method: Calculation method

**Acute inhalation toxicity**: Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

**Acute dermal toxicity**: Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

**Components:**

**Tar, wood:**

| Acute oral toxicity | LD50 (Rat): > 2,000 mg/kg |
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<td>04/14/2017</td>
</tr>
</tbody>
</table>

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

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

- **Xylene:**
  - **Acute oral toxicity**: LD50 (Rat): 3,523 mg/kg
  - **Acute inhalation toxicity**: LC50 (Rat): 27.571 mg/l
    - Exposure time: 4 h
    - Test atmosphere: vapor
  - **Acute dermal toxicity**: LD50 (Rabbit): > 4,200 mg/kg

- **Dichlofenthion (ISO):**
  - **Acute oral toxicity**: LD50 (Rat): 172 mg/kg
    - LD50 (Rat): 270 mg/kg
  - **Acute inhalation toxicity**: LC50 (Rat): 1.75 mg/l
  - **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 judgment

- **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 judgment

- **Acute dermal toxicity**: LD50 (Rabbit): 660 mg/kg  
  Method: OECD Test Guideline 402

  - Acute toxicity estimate (Humans): 300 mg/kg  
    Method: Expert judgment

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
SAFETY DATA SHEET

Dichlofenthion Formulation

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 sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization
Not classified based on available information.

Components:

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

Rosin:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative
**Tar, coal:**
- **Test Type:** Local lymph node assay (LLNA)
- **Routes of exposure:** Skin contact
- **Species:** Mouse
- **Method:** OECD Test Guideline 429
- **Result:** Positive
- **Remarks:** Based on data from similar materials

**Assessment:** Probability or evidence of skin sensitization in humans

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

**Dichlofenthion (ISO):**
- **Routes of exposure:** Dermal
- **Assessment:** Does not cause skin sensitization.
- **Result:** Weak sensitizer
- **Remarks:** Based on data from similar materials

**Sodium hydroxide:**
- **Test Type:** Human repeat insult patch test (HRIPT)
- **Routes of exposure:** Skin contact
- **Result:** Negative

**Phenol:**
- **Test Type:** Buehler Test
- **Routes of exposure:** Skin contact
- **Species:** Guinea pig
- **Method:** OECD Test Guideline 406
- **Result:** Negative

**p-Cresol:**
- **Test Type:** Draize Test
- **Routes of exposure:** 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

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

- **Test Type:** Chromosome aberration test in vitro  
  Method: OECD Test Guideline 473  
  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 national or regional regulation.

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 mam-
malian cells
Result: negative

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

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

Genotoxicity in vivo:
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:
Genotoxicity in vitro:
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

Genotoxicity in vivo:
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:
Genotoxicity in vitro:
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
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 national or regional regulation.

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

Xylene:
Species: Rat
Application Route: Ingestion
Exposure time: 103 weeks
Result: negative

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
Result: positive
Remarks: Based on data from similar materials

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

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>106 - 107 weeks</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

Suspected of damaging the unborn child.

**Components:**

### Rosin:

**Effects on fertility**

- Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
- Species: Rat
- Application Route: Ingestion
- Method: OECD Test Guideline 422
- Result: negative

**Effects on fetal development**

- Test Type: Embryo-fetal development
- Species: Rat
- Application Route: Ingestion
- Method: OECD Test Guideline 414
- Result: negative

### Ethylbenzene:

**Effects on fertility**

- Test Type: Two-generation reproduction toxicity study
- Species: Rat
- Application Route: Inhalation (vapor)
- Method: OECD Test Guideline 416
- Result: negative

**Effects on fetal development**

- Test Type: Embryo-fetal development
- Species: Rat
- Application Route: Inhalation
- Method: OECD Test Guideline 414
- Result: negative

### Xylene:

**Effects on fertility**

- Test Type: One-generation reproduction toxicity study
- Species: Rat
- Application Route: Inhalation (vapor)
- Result: negative

**Effects on fetal development**

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

### Dichlofenthion (ISO):
## Effects on fetal development

**Dichlofenthion Formulation**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Application Route</th>
<th>Developmental Toxicity</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>Intraperitoneal</td>
<td>LOAEL: 80 mg/kg body weight</td>
<td>Reduced fetal weight, Embryotoxic effects.</td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td>Species: Mouse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
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</tr>
<tr>
<td>Test Type: Development</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Development</td>
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<td></td>
</tr>
<tr>
<td>Species: Mouse</td>
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</tr>
<tr>
<td>Test Type: Development</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Phenol:**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Application Route</th>
<th>Method</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-generation reproduction toxicity study</td>
<td>Ingestion</td>
<td>OECD Test Guideline 416</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Two-generation reproduction toxicity study</td>
<td>Ingestion</td>
<td>OECD Test Guideline 416</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Two-generation reproduction toxicity study</td>
<td>Ingestion</td>
<td>OECD Test Guideline 414</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**m-Cresol:**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Application Route</th>
<th>Method</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-generation reproduction toxicity study</td>
<td>Ingestion</td>
<td>OECD Test Guideline 416</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Prenatal development toxicity study (teratogenicity)</td>
<td>Ingestion</td>
<td>OECD Test Guideline 414</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p-Cresol:**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Application Route</th>
<th>Method</th>
<th>Result</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-generation reproduction toxicity study</td>
<td>Ingestion</td>
<td>OECD Test Guideline 416</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Type: Embryo-fetal development</td>
<td>Ingestion</td>
<td>OECD Test Guideline 414</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>Species: Rat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproductive toxicity - Assessment: Suspected of damaging the unborn child.
STOT-single exposure
May cause respiratory irritation.
Causes damage to organs (Nervous system).

Components:

Tar, coal:
<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>Target Organs</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Nervous system</td>
<td>Shown to produce significant health effects in animals at concentrations of 300 mg/kg bw or less.</td>
</tr>
</tbody>
</table>

Xylene:
| Assessment | May cause respiratory irritation. |

STOT-repeated exposure
Causes damage to organs (Nervous system) through prolonged or repeated exposure.
May cause damage to organs (Central nervous system, Kidney, Liver, Skin, Respiratory Tract, Auditory system) through prolonged or repeated exposure.

Components:

Tar, coal:
<table>
<thead>
<tr>
<th>Target Organs</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory Tract</td>
<td>Shown to produce significant health effects in animals at concentrations of &gt;0.02 to 0.2 mg/l/6h/d.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>Target Organs</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation (dust/mist/fume)</td>
<td>Respiratory Tract</td>
<td>Shown to produce significant health effects in animals at concentrations of &gt;0.02 to 0.2 mg/l/6h/d.</td>
</tr>
</tbody>
</table>

Ethylbenzene:
<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>Target Organs</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation (vapor)</td>
<td>Auditory system</td>
<td>Shown to produce significant health effects in animals at concentrations of &gt;0.2 to 1 mg/l/6h/d.</td>
</tr>
</tbody>
</table>

Xylene:
<table>
<thead>
<tr>
<th>Routes of exposure</th>
<th>Target Organs</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation (vapor)</td>
<td>Auditory system</td>
<td>Shown to produce significant health effects in animals at concentrations of &gt;0.2 to 1 mg/l/6h/d.</td>
</tr>
</tbody>
</table>

Dichlofenthion (ISO):
<table>
<thead>
<tr>
<th>Target Organs</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nervous system</td>
<td>Causes damage to organs through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

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:

Rosin:
Species: Rat, male
NOAEL: 335 mg/kg
Application Route: Ingestion
Exposure time: 90 Days
Method: OECD Test Guideline 408

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

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

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

Species: Rat
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 (vapor)
- **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 sensitization by skin contact.

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

- **Ingestion:** Symptoms: Nausea, Diarrhea, Vomiting, sweating, Lachrymation, constriction of pupils, Central nervous system depression, Gastrointestinal disturbance, bronchospasm, central nervous system effects, Edema.

### SECTION 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 Remarks: Based on data from similar materials

- **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:** EL50 (Raphidocelis subcapitata (freshwater green alga)): > 1,000 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201

- **NOELR (Raphidocelis subcapitata (freshwater green alga)):** 1,000 mg/l
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

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

Tar, coal:

Toxicity to fish: LL50 (Danio rerio (zebra fish)): > 250 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates: EL50 (Daphnia magna (Water flea)): 2.8 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants: EL50 (Desmodesmus subspicatus (green algae)): 36 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Ethylbenzene:

Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 4.2 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 1.8 - 2.4 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants: EC50 (Pseudokirchneriella subcapitata (green algae)): 3.6 mg/l  
Exposure time: 96 h  
NOEC (Pseudokirchneriella subcapitata (green algae)): 3.4 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC (Ceriodaphnia dubia (water flea)): 0.96 mg/l  
Exposure time: 7 d

Toxicity to microorganisms: EC50 (Nitrosomonas sp.): 96 mg/l  
Exposure time: 24 h
SAFETY DATA SHEET

Dichlofenthion Formulation

|                              | LC50 (Onocorhynchus mykiss (rainbow trout)): 13.5 mg/l  | Exposure time: 96 h
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicty to fish</td>
<td></td>
</tr>
</tbody>
</table>

|                              | EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l       | Exposure time: 24 h
|---                          |---                                                      |
| Toxicty to daphnia and other aquatic invertebrates | Method: OECD Test Guideline 202
| Remarks: Based on data from similar materials |

|                              | EC50 (Skeletonema costatum (marine diatom)): 10 mg/l   | Exposure time: 72 h
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicty to algae/aquatic plants</td>
<td></td>
</tr>
</tbody>
</table>

|                              | NOEC (Danio rerio (zebra fish)): > 0.1 - < 1 mg/l     | Exposure time: 35 d
|---                          |---                                                      |
| Toxicty to fish (Chronic toxicity) | Method: OECD Test Guideline 210
| Remarks: Based on data from similar materials |

|                              | EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l      | Exposure time: 21 d
|---                          |---                                                      |
| Toxicty to daphnia and other aquatic invertebrates (Chronic toxicity) | Method: OECD Test Guideline 211
| Remarks: Based on data from similar materials |

|                              | NOEC: > 100 mg/l                                      | Exposure time: 3 h
|---                          |---                                                      |
| Toxicty to microorganisms    | Method: OECD Test Guideline 209
| Remarks: Based on data from similar materials |

|                              | LC50 (No species specified): 0.64 mg/l                | Exposure time: 96 h
|---                          |---                                                      |
| Toxicty to fish             | Method: OECD Test Guideline 203

|                              | LC50 (Lepomis macrochirus (Bluegill sunfish)): 1.23 mg/l | Exposure time: 96 h |
|---                          |---                                                      |
| Toxicty to fish             | Method: OECD Test Guideline 203 |

|                              | EC50 (Daphnia magna (Water flea)): 0.0011 mg/l       | Exposure time: 48 h
|---                          |---                                                      |
| Toxicty to daphnia and other aquatic invertebrates | Method: OECD Test Guideline 202

|                              | LC50 (Pimephales promelas (fathead minnow)): 24.9 mg/l | Exposure time: 96 h
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicty to fish</td>
<td></td>
</tr>
</tbody>
</table>

|                              | EC50 (Ceriodaphnia dubia (water flea)): 3.1 mg/l     | Exposure time: 48 h |
|---                          |---                                                      |
| Toxicty to daphnia and other aquatic invertebrates |

|                              | EC50 (Selenastrum capricornutum (green algae)): 61.1 mg/l | Exposure time: 96 h |
|---                          |---                                                      |
| Toxicty to algae/aquatic plants |

|                              | NOEC: 0.077 mg/l                                       | Exposure time: 60 d |
|---                          |---                                                      |
| Toxicty to fish (Chronic toxicity) |
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 (Oncorhynchus 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 (Oncorhynchus 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:
Biodegradability: Result: Readily biodegradable.
Biodegradation: 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

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:
Partition coefficient: n-octanol/water: log Pow: > 3 - 6.2
Method: OECD Test Guideline 117

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

Octanol/water

**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

**Other adverse effects**
- No data available

### SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**
- **Waste from residues**
  - Dispose of in accordance with local regulations.
  - Do not dispose of waste into sewer.
- **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.
SECTION 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.

Domestic regulation

TDG
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)
ERG Code: 132
Marine pollutant: yes (Dichlofenthion (ISO))
SAFETY DATA SHEET

Dichlofenthion Formulation

Version 8.0 Revision Date: 04/04/2023 SDS Number: 1552609-00014 Date of last issue: 10/01/2022 Date of first issue: 04/14/2017

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

SECTION 15. REGULATORY INFORMATION

The ingredients of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

IECSC : not determined

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
CA BC OEL : Canada. British Columbia OEL
CA ON OEL : Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / C : Ceiling limit
CA AB OEL / TWA : 8-hour Occupational exposure limit
CA AB OEL / STEL : 15-minute occupational exposure limit
CA AB OEL / (c) : ceiling occupational exposure limit
CA BC OEL / TWA : 8-hour time weighted average
CA BC OEL / STEL : short-term exposure limit
CA BC OEL / C : ceiling limit
CA ON OEL / TWA : Time-Weighted Average Limit (TWA)
CA QC OEL / TWAEV : Time-weighted average exposure value
CA QC OEL / STEV : Short-term exposure value
CA QC OEL / C : Ceiling

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Civil Aviation Organization; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Air Transport Association; IECSC - Inventory of Existing Chemi-
SAFETY DATA SHEET

Dichlofenthion Formulation

Version: 8.0
Revision Date: 04/04/2023
SDS Number: 1552609-00014
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Sources of key data used to compile the Material Safety Data Sheet:

Revision Date: 04/04/2023
Date format: mm/dd/yyyy

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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.

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