1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2,4-Dichlorophenol
Product Number : 105953
Brand : Aldrich
Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Carcinogen, Highly toxic by ingestion, Toxic by skin absorption, Corrosive

Target Organs
Liver, Kidney, Blood

GHS Classification
Acute toxicity, Oral (Category 2)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H300 Fatal if swallowed.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P264 Wash hands thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P501 Dispose of contents/container to an approved waste disposal plant.

HMIS Classification

<table>
<thead>
<tr>
<th>Health hazard:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Health Hazard:</td>
<td>*</td>
</tr>
<tr>
<td>Flammability:</td>
<td>0</td>
</tr>
<tr>
<td>Physical hazards:</td>
<td>0</td>
</tr>
</tbody>
</table>

NFPA Rating

<table>
<thead>
<tr>
<th>Health hazard:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire:</td>
<td>0</td>
</tr>
<tr>
<td>Reactivity Hazard:</td>
<td>0</td>
</tr>
</tbody>
</table>

Potential Health Effects

<table>
<thead>
<tr>
<th>Potential Health Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.</td>
</tr>
<tr>
<td>Skin</td>
<td>Toxic if absorbed through skin. Causes skin burns.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Causes eye burns.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be fatal if swallowed.</td>
</tr>
</tbody>
</table>

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenol</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>120-83-2</td>
</tr>
<tr>
<td>EC-No.</td>
<td>204-429-6</td>
</tr>
<tr>
<td>Index-No.</td>
<td>604-011-00-7</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

**Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage**
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenol</td>
<td>120-83-2</td>
<td>TWA</td>
<td>1 ppm</td>
<td>USA. Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td>Skin Absorbed rapidly through the skin in molten or heated liquid form in amounts that have caused rapid death in humans</td>
</tr>
</tbody>
</table>

**Personal protective equipment**

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

<table>
<thead>
<tr>
<th>Form</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>crystalline</td>
<td>light brown</td>
</tr>
</tbody>
</table>
Safety data

- **pH**: no data available
- **Melting point/freezing point**: Melting point/range: 42 - 43 °C (108 - 109 °F) - lit.
- **Boiling point**: 209 - 210 °C (408 - 410 °F) - lit.
- **Flash point**: 114.0 °C (237.2 °F) - closed cup
- **Ignition temperature**: no data available
- **Autoignition temperature**: no data available
- **Lower explosion limit**: no data available
- **Upper explosion limit**: no data available
- **Vapour pressure**: 0.1 hPa (0.1 mmHg) at 25.0 °C (77.0 °F)
- **Density**: 1.38 g/cm³ at 60.00 °C (140.00 °F)
- **Water solubility**: no data available
- **Partition coefficient: n-octanol/water**: log Pow: 3.06
- **Relative vapour density**: no data available
- **Odour**: no data available
- **Odour Threshold**: no data available
- **Evaporation rate**: no data available

10. STABILITY AND REACTIVITY

- **Chemical stability**: Stable under recommended storage conditions.
- **Possibility of hazardous reactions**: no data available
- **Conditions to avoid**: no data available
- **Materials to avoid**: Oxidizing agents, acids, Acid chlorides, Acid anhydrides, Metals
- **Hazardous decomposition products**: Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
- **Other decomposition products**: no data available

11. TOXICOLOGICAL INFORMATION

- **Acute toxicity**
  - **Oral LD50**: LD50 Oral - rat - 47.0 mg/kg
  - **Inhalation LC50**: no data available
  - **Dermal LD50**: LD50 Dermal - Mammal - 790.0 mg/kg
- **Other information on acute toxicity**: no data available
Skin corrosion/irritation
Skin - rabbit - Severe skin irritation - 24 h - Draize Test

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: 2B - Group 2B: Possibly carcinogenic to humans (2,4-Dichlorophenol)
          2B - Group 2B: Possibly carcinogenic to humans (2,4-Dichlorophenol)
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation
May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion
May be fatal if swallowed.

Skin
Toxic if absorbed through skin. Causes skin burns.

Eyes
Causes eye burns.

Signs and Symptoms of Exposure
spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Weakness, Lowered blood pressure, Tremors, Dizziness, Confusion., Convulsions, Cyanosis, Shock., Unconsciousness, Symptoms may be delayed., Molten or hot 2,4-Dichlorophenol is immediately absorbed through the skin in amounts which have caused death in humans. Rapid death in humans has been caused by skin exposure without immediate decontamination. Amounts of molten 2,4-Dichlorophenol that may cover as little as 1% body surface area (hand-size) may cause death.

Synergistic effects
no data available

Additional Information
RTECS: SK8575000
12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish
- LC50 - Lepomis macrochirus (Bluegill) - 1.6 - 2.6 mg/l - 96.0 h
- LC50 - Oncorhynchus mykiss (rainbow trout) - 2.2 - 3.1 mg/l - 96.0 h
- LC50 - Carassius auratus (goldfish) - 0.8 - 2.5 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates
- EC50 - Daphnia magna (Water flea) - 2.70 - 3.90 mg/l - 24 h
- LC50 - Daphnia magna (Water flea) - 0.00261 mg/l - 48 h

Toxicity to algae
- EC50 - Chlorella vulgaris (Fresh water algae) - 9.20 mg/l - 96 h
- Growth inhibition EC50 - Chlorella vulgaris (Fresh water algae) - 9.2 mg/l - 96 h

Persistence and degradability

Bioaccumulative potential
- Bioaccumulation Carassius auratus (goldfish) - 24 h
- Bioconcentration factor (BCF): 34

Mobility in soil
- no data available

PBT and vPvB assessment
- no data available

Other adverse effects
- An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
- Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

Product
- Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
- Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
- UN number: 2928  Class: 6.1 (8)  Packing group: II
- Proper shipping name: Toxic solids, corrosive, organic, n.o.s. (2,4-Dichlorophenol)
- Reportable Quantity (RQ): 100 lbs
- Marine pollutant: No
- Poison Inhalation Hazard: No

IMDG
- UN number: 2928  Class: 6.1 (8)  Packing group: II  EMS-No: F-A, S-B
- Proper shipping name: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (2,4-Dichlorophenol)
- Marine pollutant: No

IATA
- UN number: 2928  Class: 6.1 (8)  Packing group: II
- Proper shipping name: Toxic solid, corrosive, organic, n.o.s. (2,4-Dichlorophenol)

15. REGULATORY INFORMATION
OSHA Hazards
Carcinogen, Highly toxic by ingestion, Toxic by skin absorption, Corrosive

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
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<tbody>
<tr>
<td>120-83-2</td>
<td>2007-07-01</td>
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</table>

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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