Material Safety Data Sheet
p-Dichlorobenzene

MSDS# 17640

Section 1 - Chemical Product and Company Identification

MSDS Name: p-Dichlorobenzene
Catalog Numbers: AC113190000, AC113190010, AC113190050, 11319-0025, B249-3
Synonyms: p-DCB; 1,4-Dichlorobenzene; Dichlorocide, Paracide; Paradichlorobenzol; p-Chlorophenyl chloride; 1,4-DCB.

Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 201-796-7100
Emergency Number US: 201-796-7100
CHEMTREKC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>106-46-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name:</td>
<td>p-Dichlorobenzene</td>
</tr>
<tr>
<td>%:</td>
<td>97</td>
</tr>
<tr>
<td>EINECS#:</td>
<td>203-400-5</td>
</tr>
</tbody>
</table>

Hazard Symbols: XN N
Risk Phrases: 36 40 50/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! May cause lung damage. May cause cancer based on animal studies. Material is a solid at room temperature that melts upon moderate heating into a combustible liquid with a flash point below 200°F (93.3°C). Causes eye, skin, and respiratory tract irritation. Sublimes (goes directly from solid to vapor form) readily at room temperature. Excessive exposure may cause liver and kidney damage. Target Organs: Kidneys, liver, lungs, respiratory system, eyes, skin.

Potential Health Effects
Eye: Causes eye irritation. Exposure to high vapor concentrations may cause irritation.
Skin: Solid produces burning sensation when held in contact with the skin, but irritation is slight.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver and kidney damage. Causes respiratory tract irritation. May cause liver and kidney damage. Inhalation of vapors causes irritation of Inhalation: eyes, throat, and skin. Exposure may cause anorexia, nausea, vomiting, weight loss and hepatic necrosis with jaundice. Exposure may cause headache and rhinitis (inflammation of the mucous membrane of the nose). Possible cancer hazard based on tests with laboratory animals. May cause anemia and other blood cell
Chronic: abnormalities. Chronic inhalation may lead to decreased pulmonary function. Animal studies indicate that the product may affect the liver and kidneys.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical
Section 5 - Fire Fighting Measures

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Combustible liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media:
Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Autoignition Temperature: 640 deg C (1,184.00 deg F)
Flash Point: 65 deg C (149.00 deg F)
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
NFPA Rating: health: 2; flammability: 2; instability: 0;

Section 6 - Accidental Release Measures

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Avoid breathing vapor. Keep away from heat and flame.

Storage:
Keep away from heat and flame. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-Dichlorobenzene</td>
<td>10 ppm</td>
<td>150 ppm IDLH</td>
<td>75 ppm TWA; 450 mg/m3 TWA</td>
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</table>

OSHA Vacated PELs: p-Dichlorobenzene: 75 ppm TWA; 450 mg/m3 TWA

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a Respirators: NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Color: white
Odor: mothball-like - penetrating odor
pH: Not available
Vapor Pressure: 1 mm Hg @ 25 deg C
Vapor Density: 5.1 (air=1)
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: 174 deg C (345.20°F)
Freezing/Melting Point: 53 deg C (127.40°F)
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: 1.458 @ 20°C
Molecular Formula: C₆H₄Cl₂
Molecular Weight: 147.00

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: High temperatures, ignition sources, dust generation.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Hydrogen chloride, chlorine, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 106-46-7: CZ4550000
RTECS:
CAS# 106-46-7: Inhalation, rat: LC50 = 5000 mg/m³/4H;
Oral, mouse: LD50 = 2950 mg/kg;
Oral, rabbit: LD50 = 2830 mg/kg;
Oral, rat: LD50 = 500 mg/kg;
Skin, rabbit: LD50 = >2 gm/kg;
Skin, rat: LD50 = 2000 mg/kg;

LD50/LC50: Other: Oral LD50, rat: 3826 mg/kg. Dermal LD50, rabbit: > 5010 mg/kg. Inhalation LC50, rat: > 6 mg/l/4H Practically nontoxic based on animal inhalation exposure studies with vapor. Eye irritation, rabbit: Moderately irritating. Skin irritation, rabbit: Slightly irritating to rabbit skin in 4 hour test. Testing by Solutia Inc.

Carcinogenicity: p-Dichlorobenzene - ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans California: carcinogen, initial date 1/1/89 NTP: Suspect carcinogen IARC: Group 2B carcinogen
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Daphnia: Daphnia: 7.4 mg/l; 48h; EC50
Fish: Rainbow trout: 1.12 mg/l; 96h; LC50
Fish: Fathead Minnow: 4.0 mg/l; 96h; LC50
Fish: Bluegill/Sunfish: 4.3 mg/l; 96h; LC50

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.
US DOT
Shipping Name: AVIATION REGULATED SOLID, N.O.S.
Hazard Class: 9
UN Number: UN3335
Packing Group:
Canada TDG
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SO
Hazard Class: 9
UN Number: UN3077
Packing Group: III

USA RQ: CAS# 106-46-7: 100 lb final RQ; 45.4 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N
Risk Phrases:
R 36 Irritating to eyes.
R 40 Limited evidence of a carcinogenic effect.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
S 36/37 Wear suitable protective clothing and gloves.
S 46 If swallowed, seek medical advice immediately and show this container or label.
S 60 This material and its container must be disposed of as hazardous waste.

WGK (Water Danger/Protection)

CAS# 106-46-7: 2

Canada

CAS# 106-46-7 is listed on Canada's DSL List
Canadian WHMIS Classifications: B3, D2B, D2A
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 106-46-7 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 106-46-7 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 12/12/1997
Revision #9 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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