Material Safety Data Sheet
1,4-Dichlorobenzene

Section 1 - Chemical Product and Company Identification

MSDS Name: 1,4-Dichlorobenzene
Catalog Numbers: 11319-0000, 11319-0010, 11319-0025, 11319-0050
Synonyms: p-Dichlorobenzene

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaalan 3a
2440 Geel, Belgium

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-46-7</td>
<td>1,4-Dichlorobenzene</td>
<td>97%</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

Irritating to eyes. Limited evidence of a carcinogenic effect. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Potential Health Effects

Eye: Causes eye irritation.
Skin: May cause skin irritation.
Ingestion: May cause irritation of the digestive tract. May cause liver and kidney damage. May cause nausea and vomiting. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Chronic: May cause liver and kidney damage. May cause lung damage. Limited evidence of a carcinogenic effect.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid. Wash mouth out with water.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustible solid.

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

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.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes. Use only in a chemical fume hood.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 106-46-7:
United Kingdom, WEL - TWA: 25 ppm TWA; 153 mg/m3 TWA United
Kingdom, WEL - STEL: 50 ppm STEL; 306 mg/m³ STEL
United States OSHA: 75 ppm TWA; 450 mg/m³ TWA
Belgium - TWA: 10 ppm VLE; 61 mg/m³ VLE Belgium - STEL: 50 ppm VLE; 306 mg/m³ VLE
France - VME: 0.75 ppm VME; 4.5 mg/m³ VME France - VLE: 50 ppm VLE; 306 mg/m³ VLE
Germany: 50 ppm TWA; 300 mg/m³ TWA Germany: skin notation
Japan: 10 ppm OEL; 60 mg/m³ OEL
Malaysia: 10 ppm TWA; 60 mg/m³ TWA
Netherlands: 50 ppm STEL; 300 mg/m³ STEL Netherlands: 25 ppm MAC; 150 mg/m³ MAC

Spain: 20 ppm VLA-ED; 122 mg/m³ VLA-ED Spain: 50 ppm VLA-EC; 306 mg/m³ VLA-EC

Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a 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: Crystals
Color: white
Odor: penetrating odor
pH: Not available
Vapor Pressure: 1.7 mbar @ 20 deg C
Viscosity: Not available
Boiling Point: 174 deg C @ 760 mmHg (345.20°F)
Freezing/Melting Point: 52 - 56 deg C
Autoignition Temperature: 640 deg C (1,184.00 deg F)
Flash Point: 67 deg C (152.60 deg F)
Explosion Limits: Lower: 2.2 Vol %
Explosion Limits: Upper: 12 Vol %
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: 1.240
Molecular Formula: C6H4Cl2
Molecular Weight: 147

Section 10 - Stability and Reactivity

Chemical Stability: Not available
Conditions to Avoid: Incompatible materials.
Incompatibilities with Other Materials: Oxidizing agents, aluminum.
Hazardous Decomposition: Hydrogen chloride, chlorine, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

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;
LD50/LC50:
Oral, rat: LD50 = 500 mg/kg;
Skin, rabbit: LD50 = >2 gm/kg;
Skin, rat: LD50 = 2000 mg/kg;

1,4-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

Carcinogenicity: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:
Fish: Bluegill/Sunfish: LC50: 4.3 mg/l; 96H;
Fish: Rainbow trout: LC50: 2.84 mg/l; 96H;
Daphnia: Daphnia: EC50: 3.2 mg/l; 24H;

Ecotoxicity:
Fish: Pimephals prome: LC50: 3.66 mg/l; 96H;

Other: Do not empty into drains. Biodegradable.

log Pow: 3.4

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

IATA IMO RID/ADR
Shipping ENVIRONMENTALLY ENVIRONMENTALLY ENVIRONMENTALLY

### Name:
HAZARDOUS SUBSTANCE, SOLID, N.O.S.*
HAZARDOUS SUBSTANCE, SOLID, N.O.S.
HAZARDOUS SUBSTANCE, SOLID, N.O.S.

### Hazard Class:
9
9
9

### UN Number:
3077
3077
3077

### Packing Group:
III
III
III

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

#### Severe Marine Pollutant

## 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

## US Federal

### TSCA

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

#### Section 16 - Other Information

- MSDS Creation Date: 7/16/1996
- Revision #3 Date: 3/21/2005

Revisions were made in Sections: General revision.
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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