4-NITROBENZYL CHLORIDE

Material Safety Data Sheet

Emergency Telephone Number: CHEMTREC 1-800-424-9300
For Information call: DUDLEY 732-886-3100

DUDLEY CORPORATION
125 Kenyon Drive
Lakewood, New Jersey 08701

Effective Date: February 22, 2010

1. PRODUCT IDENTIFICATION:
Synonyms: alpha-Chloro-p-nitrotoluene; Benzene, 1-(chloromethyl)-4-nitro-; Benzyl chloride, 4-nitro; p-Nitrobenzyl chloride; Toluene, alpha-chloro-p-nitro
CAS No.: 100-14-1
Molecular Weight: 171.58
Chemical Formula: C7H6CINO2

2. COMPOSITION, INFORMATION ON INGREDIENTS:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene, 1-(chloromethyl)-4-nitro</td>
<td>100-14-1</td>
<td>99%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION:

Emergency Overview
Appearance: Off-white to slightly yellow to a pale yellow crystals
CAUTION! Lachrymator (substance which increases the flow of tears). Cause respiratory tract irritation. Irritant. Causes eye and skin irritation. May cause digestive tract irritation. May be harmful if swallowed.
Target Organs: No data found.

Potential Health Effects
Eyes: Causes eye irritation. Lachrymator (substance which increases the flow of tears). May cause chemical conjunctivitis.
Skin: Causes skin irritation.
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: May cause respiratory tract irritation. Can produce delayed pulmonary edema. Inhalation may produce burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.
Chronic: Effect may be delayed.

4. FIRST AID MEASURES: Bring this data sheet to the physician.
Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical advise.
Skin: In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothes and shoes. Get medical attention if irritation develops or persists.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls water or milk to drink. Do NOT induce vomiting. NEVER give anything by mouth to an unconscious person. Get medical attention if irritation or symptoms appear.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
Notes to Physician: Treat symptomatically and supportively.

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

Extinguishing Media: Use dry chemical, Carbon dioxide, or appropriate foam. Use agent most appropriate to extinguish fire. DO NOT USE WATER!

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. Clean up spills immediately, observing precautions in the Protective Equipment section. Cover with sand, dry lime or soda ash and place in a closed container for disposal. Provide ventilation. Do not let product enter drains.

7. HANDLING AND STORAGE:
Handling: Wash thoroughly after handling. Use with adequate ventilation. Use only in a chemical fume hood. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Wash clothing before reuse. Discard contaminated shoes.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:
Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PEL’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene, 1-(chloromethyl)-4-nitro</td>
<td>None listed</td>
<td>None listed</td>
<td>None listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Benzene, 1-(chloromethyl)-4-nitro: No OSHA Vacated PELs are listed for this chemical.

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.
Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES:
Physical State: Crystals
Appearance: Off white to slightly yellow to a pale yellow.
Odor: None reported.
Freezing/Melting Point: 70 - 73 deg C
pH: Not available.
Vapor Pressure (mm Hg): Not available.
Vapor Density (Air = 1): Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: Not available.
Decomposition Temperature: Not available.
10. STABILITY AND REACTIVITY:
Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. May violently decompose at temperatures above 125 deg C
Conditions to Avoid: Incompatible materials, moisture, metals, excess heat, oxidizers, amines, bases.
Incompatibilities with Other Materials: Oxidizing agents, bases, alcohols, amines, steel, moisture.
Hazardous Decomposition Products: Hydrogen chloride, nitrogen oxides, carbon monoxide, carbon dioxide, chloride fumes formed under fire conditions.
Hazardous Polymerization: Has not been reported.

11. TOXICOLOGICAL INFORMATION:
RTECS: CAS# 100-14-1: XS9093000
LD50/LC50: CAS# 100-14-1 Oral, rat: LD50 = 1809 mg/kg.
Carcinogenicity: CAS# 100-14-1: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information found. Teratogenicity: No information found.
Reproductive Effects: Genotoxicity in vitro - Hamster – ovary Sister chromatid exchange
Neurotoxicity: No information found.
Mutagenicity: Mutation in Microorganisms: Salmonella typhimurium = 100 ug/plate. DNA repair: Bacillus subtilis = 50 ug/disc. Mutation in microorganism; Salmonella typhimurium = 5 ug/plate. Sister chromatid exchange; Hamster ovary = 100 umol/L.

12. ECOLOGICAL INFORMATION:
Environmental Fate: No information available.
Environmental Toxicity: No data available.

13. DISPOSAL CONSIDERATIONS:
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. Contact a licensed professional waste disposal service to dispose of this material.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

14. TRANSPORT INFORMATION:
UN Number: UN 3261
Hazard Class: 8 Packing Group: II ERG# 154

15. REGULATORY INFORMATION:
US FEDERAL
TSCA CAS#100-14-1 is listed on the TSCA inventory.
Health & Safety Reporting List None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules None of the chemicals in this product are under a Chemical Test Rule.
Section 12b None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule None of the chemicals in this material have a SNUR under TSCA.
SARA
CERCLA Hazardous Substances and corresponding RQs None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances CAS# 100-14-1: 500 lb TPQ (lower threshold); 10000 lb TPQ (upper threshold).
Section 313 No chemicals are reportable under Section 313.
Clean Air Act This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.
Clean Water Act None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA None of the chemicals in this product are considered highly hazardous by OSHA.
STATE CAS# 100-14-1 is present on state lists from PA, MA, or NJ.
California No Significant Risk Level: None of the chemicals in this product are listed.

EUROPEAN/INTERNATIONAL REGULATIONS
European Labeling in Accordance with EC Directives
Hazardous Symbols: C.
Risk Phrases: R 22 Harmful if swallowed R 34 Causes burns.
Safety Phrases: S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

                   S 36/37/39 Wear suitable protective clothing, gloves, and eye/face protection.
                   S 45 In case of accident or if you feel unwell, seek medical advice immediately, (show label where possible)
WGK (Water Danger/Protection) CAS# 100-14-1: No information available.
Canada - DSL/NDSL CAS# 100-14-1 is listed on Canada’s NDSL List.
Canada – WHMIS This products does not have a WHMIS classification. CAS# 100-14-1 is not listed on Canada’s Ingredient Disclosure List.
Exposure Limits

16. DISCLAIMER INFORMATION:
DISCLAIMER

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