OXFORD LAB FINE CHEM LLP
ISO 9001-2008 Certified Company

Regd Office: Unit no 12, 1st Floor,
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Oxford
Range of
Laboratory Chemicals

MATERIAL SAFETY DATA SHEET

4-CHLORO ANILINE 98%

(For Synthesis)
(Para-Chloro Aniline)
MSDS CAS: 106-47-8

Section 1: Chemical Product and Company Identification

Section 1: Chemical Product
Product Name: 4-CHLORO ANILINE
CAS#: 106-47-8
Synonym: p-Chloroaniline
Chemical Name: 4-CHLORO ANILINE
Chemical Formula: C_6-H_6-Cl-N

Brand : OXFORD

Details Of The Supplier Of The Safety Data Sheet :

Company identification: **OXFORD LAB FINE CHEM LLP**
Unit. No. 12, 1st Floor, Neminath Industrial Estate No. 6,
Navghar, Vasai (East). Palghar - 401 210.
Mumbai, Maharashtra, INDIA.
Tel: 91-250-2390989
Tel/Fax: 91-250-2390032

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
{p-}Chloroaniline	106-47-8	100

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Section 2: Composition and Information on Ingredients (Continued)

Toxicological Data on Ingredients: **p-Chloroaniline: ORAL (LD50): Acute: 300 mg/kg [Rat]. 100 mg/kg [Mouse]. DERMAL (LD50): Acute: 3200 mg/kg [Rat]. 360 mg/kg [Rabbit]. DUST (LC50): Acute: 2340 mg/m 4 hours [Rat].**

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of skin contact (permeator), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer). Severe over-exposure can result in death.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, liver, skin. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

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Section 4: First Aid Measures (Continued)

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: **Not available.**

Section 5: Fire and Explosion Data

Flammability of the Product: **May be combustible at high temperature.**

Auto-Ignition Temperature: **Not available.**

Flash Points: **OPEN CUP: >104.44°C (220°F)**

Flammable Limits: **Not available.**

Products of Combustion: **These products are carbon oxides (CO, CO2), halogenated compounds.**

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

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Section 5: Fire and Explosion Data (Continued)

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Irritating and toxic Hydrogen Chloride and Oxides of Nitrogen may form in fires. When heated to decompostion, it emits highly toxic fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.

Storage:
Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

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Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystals solid.)

Odor	**: Sweetish. Characteristic. Amine like. (Slight.)**
Taste	**: Not available.**
Molecular Weight	**: 127.57 g/mole**
Color	**: Colorless.**
pH (1% soln/water)	**: Not available.**
Boiling Point	**: 232°C (449.6°F)**
Melting Point	**: 72.5°C (162.5°F)**
Critical Temperature	**: Not available.**
Specific Gravity	**: 1.169 (Water = 1)**
Vapor Pressure	**: Not applicable.**
Vapor Density	**: Not available.**
Volatility	**: Not available.**
Odor Threshold	**: Not applicable.**
Water/Oil Dist. Coeff.	**: The product is more soluble in oil; log(oil/water) = 1.8**
Ionicity (in Water)	**: Not available.**
Dispersion Properties	**: See solubility in water, diethyl ether, acetone.**
Solubility	**: Easily soluble in diethyl ether, acetone. Soluble in hot water. Partially soluble in cold water.**

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Section 10: Stability and Reactivity Data

Stability: **The product is stable.**

Instability Temperature: **Not available.**

Conditions of Instability: **Excess heat, incompatible materials, light, air.**

Incompatibility with various substances: **Reactive with oxidizing agents, acids.**

Corrosivity: **Not available.**

Special Remarks on Reactivity:
Light sensitive. Air sensitive. Incompatible with acids, acid chlorides, acid anhydrides, chloroformates, and strong oxidizing agents. Air and light sensitive. When heated to decompostion, it emits highly toxic fumes.

Special Remarks on Corrosivity: **Not available.**

Polymerization: **Will not occur.**

Section 11: Toxicological Information

Routes of Entry: **Absorbed through skin. Dermal contact. Inhalation. Ingestion.**

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 100 mg/kg [Mouse]. Acute dermal toxicity (LD50): 360 mg/kg [Rabbit]. Acute toxicity of the dust (LC50): 2340 mg/m 4 hours [Rat]. 3

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: blood, kidneys, liver, skin.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (permeator), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer).

Special Remarks on Toxicity to Animals: **Not available.**

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Section 11: Toxicological Information (Continued)

Special Remarks on Chronic Effects on Humans:
May affect genetic material (mutagenic). May cause cancer (tumorigenic).

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Maybe absorbed through skin. May affect behavior, blood and respiration Eyes: Causes eye irritation. Inhalation: May cause respiratory tract irritation with burning pain in the nose and throat, coughing, wheezing. May also affect respiration. Overexposure may also affect behavior/Central Nervous system and cardiovascular system and cause Methemoglobinemia with symptoms similar to ingestion. Ingestion: Harmful if swallowed. Causes gastrointestinal tract irritation with nausea, vomiting and diarrhea. May also affect behavior/rCentral Nervous system (confusion, ataxia, tinnitus, disorientation, lethargy, weakness, spasticity, somnolence, altered sleep time, aggression, muscle contraction, dizziness, drowsiness, headache, convulsions, seizures), cardiovascular system (rapid heart rate, arrhythmias, heart blocks), and respiration (respiratory depression, dyspnea, cyanosis). Overexposure may cause Methemoglobinemia which is characterized by chocolate-brown colored blood, dizziness, drowsiness, headache, shortness of breath, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconciousness and possible death Chronic Potential Health Effects: Skin: Prolonged or repeated contact may cause irritation and/or dermatitis and skin sensitization, an allergic reaction. Ingestion: Repeated or prolonged contact by ingestioin may affect the blood and cause Methemoglobinemia), urinary system (kidneys- hematuria, hemoglobinemia), and liver. Inhalation: Repeated or prolonged inhalation may affect blood and cause Methemoglobinemia).

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation:
The products of degradation are as toxic as the product itself.

Special Remarks on the Products of Biodegradation: Not available.

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Section 13: Disposal Considerations

Waste Disposal :
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

Land transport (ADR-RID)
Proper shipping name : CHLOROANILINES, SOLID
UN N° : 2018
H.I. nr : 60
ADR - Class : 6.1
Labelling - Transport : 6.1 : Toxic substances.
ADR - Group : II

Sea transport (IMDG) [English only]
Proper shipping name : CHLOROANILINES, SOLID
UN N° : 2018
IMO-IMDG - Class or division : 6.1 : Toxic substances.
IMO-IMDG - Packing group : II

Air transport (ICAO-IATA) [English only]
Proper shipping name : CHLOROANILINES, SOLID
UN N° : 2018
IATA - Class or division : 6.1 : Toxic substances.
IATA - Packing group : II

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: p-Chloroaniline California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: p-Chloroaniline Connecticut hazardous material survey.: p-Chloroaniline Illinois chemical safety act: p-Chloroaniline New York release reporting list: p-Chloroaniline Pennsylvania RTK: p-Chloroaniline

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Section 15: Other Regulatory Information (Continued)

Massachusetts RTK: p-Chloroaniline Massachusetts spill list: p-Chloroaniline New Jersey: p-Chloroaniline New Jersey spill list: p-Chloroaniline Louisiana spill reporting: p-Chloroaniline TSCA 8(b) inventory: p-Chloroaniline TSCA 8(a) IUR: p-Chloroaniline TSCA 8(d) H and S data reporting: p-Chloroaniline SARA 313 toxic chemical notification and release reporting: p-Chloroaniline CERCLA: Hazardous substances.: p-Chloroaniline: 1000 lbs. (453.6 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC): R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R43- May cause sensitization by skin contact. R45- May cause cancer. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R40- Possible risks of irreversible effects. S1/2- Keep locked up and out of the reach of children. S36- Wear suitable protective clothing. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S46- If swallowed, seek medical advice immediately and show this container or label. S53- Avoid exposure - obtain special instructions before use. S60- This material and its container must be disposed of as hazardous waste. S61- Avoid release to the environment. Refer to special instructions/Safety data sheets. S37- Wear suitable gloves.

HMIS (U.S.A.):

Health Hazard: 2
Fire Hazard: 1
Reactivity: 0
Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2
Flammability: 1
Reactivity: 0
Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

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Section 16 - Additional Information

References: Not available.

Other Special Considerations: Not available.

Disclaimer:

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