Material Safety Data Sheet

4-Chloroaniline
MSDS# 96878

Section 1 - Chemical Product and Company Identification
MSDS Name: 4-Chloroaniline
Catalog Numbers:
10859-0000, 10859-0010, 10859-0050, 10859-1000, 10859-5000, 40448-0000,
40448-1000, 40448-5000, C/4600/48
Synonyms:
1-Amino-4-chlorobenzene; p-Chloroaniline; 4-Chloraniline;
4-Chlorobenzenamine.
Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG
For information in Europe, call: (01509) 231166
Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients
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CAS#: 106-47-8
Chemical Name: 4-Chloroaniline
%: > 98
EINECS#: 203-401-0
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Hazard Symbols:
T N
Risk Phrases:
45 23/24/25 43 50/53

Section 3 - Hazards Identification
EMERGENCY OVERVIEW
Toxic by inhalation, in contact with skin and if swallowed. May
cause sensitization by skin contact. May cause cancer. Very toxic to
aquatic organisms, may cause long-term adverse effects in the aquatic
Potential Health Effects
Eye:
Causes severe eye irritation.

Skin:
Causes skin irritation. Harmful if absorbed through the skin.
Prolonged and/or repeated contact may cause irritation and/or
dermatitis. May cause skin sensitization, an allergic reaction,
which becomes evident upon re-exposure to this material.

Ingestion:
Harmful if swallowed. Causes gastrointestinal irritation with
nausea, vomiting and diarrhea. Methemoglobinemia is characterized
by
dizziness, drowsiness, headache, shortness of breath, cyanosis
(bluish discoloration of skin due to deficient oxygenation of the
blood), rapid heart rate and chocolate-brown colored blood.
Overexposure may cause methemoglobinemia.

Inhalation:
May cause irritation of the respiratory tract with burning pain in
the nose and throat, coughing, wheezing, shortness of breath and
pulmonary edema. Methemoglobinemia is characterized by dizziness,
drowsiness, headache, shortness of breath, cyanosis (bluish
discoloration of skin due to deficient oxygenation of the blood),
rapid heart rate and chocolate-brown blood. Inhalation of aniline
causes anoxia due to the formation of methemoglobin.

Chronic:
May cause liver and kidney damage. May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death. May cause cancer according to animal studies. May cause anemia and other blood cell abnormalities. May cause reproductive and fetal effects.

Section 4 - First Aid Measures

Eyes:
Immediately 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. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:
Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

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

Notes to Physician:
For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

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. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media:
In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant 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. Reduce airborne dust and prevent scattering by moistening with water. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions.

Provide ventilation. Approach spill from upwind.

Section 7 - Handling and Storage

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

Storage:
Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from light and air. Separate from oxidizing materials.

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# 106-47-8:
Russia: 0.3 mg/m3 TWA (vapor)
Russia: 1 mg/m3 STEL (vapor)

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 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: beige to brown - tan to brownish-purple
Odor: aromatic odor
pH: Not available
Vapor Pressure: 0.027 mm Hg @ 25 deg C
Viscosity: 1.2 mPa.s @ 90 deg C
Boiling Point: 232 deg C @ 760 mm Hg (449.60 F)
Freezing/Melting Point: 68-72 deg C
Autoignition Temperature: > 450 deg C (> 842.00 deg F)
Flash Point: > 188 deg C (> 370.40 deg F)

Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available

 Decomposition Temperature:

Solubility in water: Soluble in hot water
Specific Gravity/Density: 1.169
 Molecular Formula: C6H6ClN
Molecular Weight: 127.57

Section 10 - Stability and Reactivity

Chemical Stability:
Stable under normal temperatures and pressures. Darkens on exposure to light and air.

Conditions to Avoid:
Light, dust generation, excess heat, prolonged exposure to air.
Incompatibilities with Other Materials
   Strong oxidizing agents, strong acids.
Hazardous Decomposition Products
   Hydrogen chloride, nitrogen oxides, carbon monoxide, carbon
dioxide.
Hazardous Polymerization
   Will not occur.

Section 11 - Toxicological Information

RTECS#:
   CAS# 106-47-8: BX0700000
LD50/LC50:
   RTECS: CAS# 106-47-8: Draize test, rabbit, eye: 250 ug/24H
   Severe; Draize test, rabbit, skin: 500 mg/24H Mild;
   Inhalation, rat: LC50 = 2340 mg/m3/4H; Oral, mouse: LD50 = 100
   mg/kg; Oral, rat: LD50 = 300 mg/kg; Skin, rabbit: LD50 = 360
   mg/kg; Skin, rat: LD50 = 3200 mg/kg;.
Carcinogenicity:
   4-Chloroaniline -
   California: carcinogen, initial date 10/01/94
   IARC: Group 2B carcinogen

Other:
   The hazards associated with aniline may be seen in this product.

Section 12 - Ecological Information

Other:

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

IATA
   Shipping Name: CHLOROANILINES, SOLID
   Hazard Class: 6.1
   UN Number: 2018
   Packing Group: II

IMO
   Shipping Name: CHLOROANILINES, SOLID
   Hazard Class: 6.1
   UN Number: 2018
   Packing Group: II

RID/ADR
   Shipping Name: CHLOROANILINES, SOLID
   Hazard Class: 6.1
   UN Number: 2018
   Packing Group: II

USA RQ: CAS# 106-47-8: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations
   European Labeling in Accordance with EC Directives
   Hazard Symbols: T N
Risk Phrases:
   R 45  May cause cancer.
   R 23/24/25  Toxic by inhalation, in contact with skin
   and if swallowed.
   R 43  May cause sensitization by skin contact.
   R 50/53  Very toxic to aquatic organisms, may cause
   long-term adverse effects in the aquatic environment.

Safety Phrases:
   S 53  Avoid exposure - obtain special instructions
   before use.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardous waste.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)
CAS# 106-47-8: 3

Canada
CAS# 106-47-8 is listed on Canada's DSL List

US Federal
TSCA
CAS# 106-47-8 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:
11/13/1997
Revision #9 Date
3/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability 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 however arising, even if the company has been advised of the possibility of such damages.

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