

Material Safety Data Sheet

4-Chloroaniline

ACC# 96878

Section 1 - Chemical Product and Company Identification

MSDS Name: 4-Chloroaniline

Catalog Numbers: AC108590000, AC108590010, AC108590050, AC108591000, AC108595000, AC404480000, AC404481000, AC404485000, NC9165656, XXAC10859-20KG, XXAC10859-8K

Synonyms: 1-Amino-4-chlorobenzene; p-Chloroaniline; 4-Chloraniline; 4-Chlorobenzenamine.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
106-47-8	4-Chloroaniline	> 98	203-401-0

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: tan to brownish-purple crystals.

Warning! Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye, skin, and respiratory tract irritation. May cause allergic skin reaction. Impairs the oxygen carrying capacity of the blood. Cancer suspect agent. May cause liver and kidney damage. May cause methemoglobinemia. Light sensitive. Air sensitive.

Target Organs: Blood, kidneys, liver, respiratory system, eyes, skin.

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.

Flash Point: > 188 deg C (> 370.40 deg F)

Autoignition Temperature: > 450 deg C (> 842.00 deg F)

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 1; 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. 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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
4-Chloroaniline	none listed	none listed	none listed

OSHA Vacated PELs: 4-Chloroaniline: 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 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

Appearance: beige to brown - tan to brownish-purple

Odor: aromatic odor

pH: Not available.

Vapor Pressure: 0.027 mm Hg @ 25 deg C

Vapor Density: 4.4 (air=1)

Evaporation Rate:Not available.

Viscosity: 1.2 mPa.s @ 90 deg C

Boiling Point: 232 deg C @ 760 mm Hg

Freezing/Melting Point:68-72 deg C

Decomposition Temperature:330 deg C

Solubility: 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:

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:

CAS# 106-47-8:

- **ACGIH:** Not listed.
- **California:** carcinogen, initial date 10/01/94
- **NTP:** Not listed.
- **IARC:** Group 2B carcinogen

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: No information found

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: Terrestrial: Will bind tightly to soil although in the first few hours after a spill, a small amount should volatilize. It will undergo both biological and chemical transformation. Aquatic: Will volatilize (half-life 35.7 days in a typical river), photooxidize in surface layers (half-life 0.4 hr), biodegrade (half-life several days in well acclimated water but otherwise of the order of several months), and chemically bind to clay and humus in sediment and particulate matter in the water column. Atmospheric: Should exist in the atmosphere as a vapor.

Physical: Will biodegrade but not bioconcentrate.

Other: No information available.

Section 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.

RCRA P-Series: CAS# 106-47-8: waste number P024.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	CHLOROANILINES, SOLID	CHLOROANILINES, SOLID
Hazard Class:	6.1	6.1
UN Number:	UN2018	UN2018
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 106-47-8 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.

CERCLA Hazardous Substances and corresponding RQs

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

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 106-47-8: immediate, delayed.

Section 313

This material contains 4-Chloroaniline (CAS# 106-47-8, > 98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

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# 106-47-8 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains 4-Chloroaniline, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T N

Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 43 May cause sensitization by skin contact.

R 45 May cause cancer.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

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 - DSL/NDSL

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

Canada - WHMIS

This product has a WHMIS classification of D2A, D1B, D2B.

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.

Canadian Ingredient Disclosure List

CAS# 106-47-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 11/13/1997

Revision #8 Date: 12/23/2003

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 Fisher 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 Fisher has been advised of the possibility of such damages.