

## Material Safety Data Sheet

Date Printed: 15/SEP/2005  
Date Updated: 14/MAR/2004  
Version 1.3  
According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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#### 1 - Product and Company Information

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Product Name	2-CHLOROANILINE, 98%
Product Number	459917
Company	Sigma-Aldrich Pty. Ltd. 12 Anella Avenue Castle Hill NSW 2154 Australia
Technical Phone #	+61 2 9841 0555 (1800 800 097)
Fax	+61 2 9841 0500 (1800 800 096)
Emergency Phone #	+44 8701906777 (1800 448 465)

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#### 2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
2-CHLOROANILINE	95-51-2	202-426-4	612-010-00-8
Formula	C <sub>6</sub> H <sub>6</sub> C <sub>1</sub> N		
Molecular Weight	127.57 AMU		
Synonyms	1-Amino-2-chlorobenzene * Benzenamine, 2-chloro- (9CI) * o-Chloraniline * o-Chloroaniline * 2-Chloroaniline * 2-Chlorobenzenamine * Fast Yellow GC Base		

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#### 3 - Hazards Identification

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##### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Toxic by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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#### 4 - First Aid Measures

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##### AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

##### AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

##### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

Explosion Hazards: Container explosion may occur under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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## 6 - Accidental Release Measures

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### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

### METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Do not breathe vapor. Avoid prolonged or repeated exposure. Do not get in eyes, on skin, or clothing.

### STORAGE

Conditions of Storage: Keep tightly closed.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

### EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	3 MG/M3
Poland		NDSCh	10 MG/M3
Poland		NDSP	-

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Clear liquid Color: Faintly yellow-green	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	94.0 - 95.0 °C	11 mmHg
MP/MP Range	- 2.0 - -1. °C	
Flash Point	98 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	> 500 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 2.4 % Upper: 14.2 %	
Vapor Pressure	N/A	
SG/Density	1.212 g/cm <sup>3</sup>	
Partition Coefficient	Log Kow: 1.9	
Viscosity	N/A	
Vapor Density	4.4 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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## 10 - Stability and Reactivity

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### STABILITY

Materials to Avoid: Strong oxidizing agents, Chloroformates, Acid anhydrides, Acid chlorides, Acids.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen chloride gas, Nitrogen oxides Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: BX0525000

### ACUTE TOXICITY

LC50

Inhalation

Rat

797 ppm

4H

Remarks: Lungs, Thorax, or Respiration:Cyanosis.

Behavioral:Tremor. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Corneal damage.

LD50  
Oral  
Mouse  
256 mg/kg

LD50  
Skin  
Cat  
222 mg/kg

#### SIGNS AND SYMPTOMS OF EXPOSURE

Damage to the kidneys. Damage to the liver. Exposure can cause: Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.  
Skin Absorption: Toxic if absorbed through skin. Readily absorbed through skin.  
Eye Contact: Causes eye irritation.  
Inhalation: Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.  
Ingestion: Harmful if swallowed.

#### TARGET ORGAN INFORMATION

Liver. Kidneys. Blood.

#### CHRONIC EXPOSURE - MUTAGEN

Mouse  
300 MG/L  
Cell Type: lymphocyte  
specific locus test

Hamster  
600 UG/L  
Cell Type: lung  
Mutation in mammalian somatic cells.

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#### 12 - Ecological Information

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#### ELIMINATION

Elimination: 94 %

#### ECOTOXICOLOGICAL EFFECTS

Test Type: EC50 Algae  
Species: Scenedesmus subspicatus  
Time: 96 h  
Value: 35 mg/l

Test Type: EC50 Algae  
Species: Scenedesmus subspicatus  
Time: 72 h  
Value: 150 mg/l

Test Type: LC0 Fish  
Species: Leuciscus idus  
Time: 48 h  
Value: 2 mg/l

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 5.7 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 1.8 mg/l

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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### RID/ADR

UN#: 2019  
Class: 6.1  
PG: II  
Proper Shipping Name: Chloroanilines, liquid

### IMDG

UN#: 2019  
Class: 6.1  
PG: II  
Proper Shipping Name: Chloroanilines, liquid  
Marine Pollutant: No  
Severe Marine Pollutant: No

### IATA

UN#: 2019  
Class: 6.1  
PG: II  
Proper Shipping Name: Chloroanilines, liquid  
Inhalation Packing Group I: No

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 612-010-00-8

NOTA: C,WEKA

INDICATION OF DANGER: T-N

Toxic. Dangerous for the environment.

R-PHRASES: 23/24/25-33-50/53

Toxic by inhalation, in contact with skin and if swallowed.

Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-PHRASES: 28-36/37-45-60-61

After contact with skin, wash immediately with plenty of soap-suds. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

## COUNTRY SPECIFIC INFORMATION

Germany  
WGK: 2

SWITZERLAND  
SWISS POISON CLASS: 3

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### 16 - Other Information

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#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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