

## 1 Identification

### Product identifier

**Product name:** 4-Chloroaniline hydrochloride

**Stock number:** L13744

**CAS Number:**

20265-96-7

**EC number:**

243-656-5

**Index number:**

612-137-00-9

**Relevant identified uses of the substance or mixture and uses advised against.**

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department

#### Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Carc. 1B H350 May cause cancer.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS06 GHS08

### Signal word

Danger

### Hazard statements

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H317 May cause an allergic skin reaction.

H350 May cause cancer.

### Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P273 Avoid release to the environment.

P309 IF exposed or if you feel unwell:

P310 Immediately call a POISON CENTER/doctor/...

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects



### Classification system

#### HMIS ratings (scale 0-4)

#### (Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

### Other hazards

#### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

**Product name: 4-Chloroaniline hydrochloride**

(Contd. of page 1)

**3 Composition/information on ingredients**

**Chemical characterization: Substances**  
**CAS# Description:**  
20265-96-7 4-Chloroaniline hydrochloride  
**Identification number(s):**  
**EC number:** 243-656-5  
**Index number:** 612-137-00-9

**4 First-aid measures**

**Description of first aid measures**  
**General information**  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.  
**After inhalation**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
**After skin contact**  
Immediately wash with water and soap and rinse thoroughly.  
Seek immediate medical advice.  
**After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.  
**After swallowing** Do not induce vomiting; immediately call for medical help.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed** Methemoglobinemia  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**  
**Suitable extinguishing agents** Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
**Special hazards arising from the substance or mixture**  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NOx)  
Possibly Hydrogen cyanide (HCN)  
Hydrogen chloride (HCl)  
**Advice for firefighters**  
**Protective equipment:**  
Wear self-contained respirator.  
Wear fully protective impervious suit.

**6 Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
**Environmental precautions:** Do not allow material to be released to the environment without proper governmental permits.  
**Methods and material for containment and cleaning up:**  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
**Prevention of secondary hazards:** No special measures required.  
**Reference to other sections**  
See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

**Handling**  
**Precautions for safe handling**  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Open and handle container with care.  
**Information about protection against explosions and fires:** No information known.  
**Conditions for safe storage, including any incompatibilities**  
**Storage**  
**Requirements to be met by storerooms and receptacles:** No special requirements.  
**Information about storage in one common storage facility:** Store away from oxidizing agents.  
**Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
**Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

**Additional information about design of technical systems:**  
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.  
**Control parameters**  
**Components with limit values that require monitoring at the workplace:** Not required.  
**Additional information:** No data  
**Exposure controls**  
**Personal protective equipment**  
**General protective and hygienic measures**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.  
**Breathing equipment:** Use self-contained respiratory protective device in emergency situations.

(Contd. on page 3)  
USA

**Product name: 4-Chloroaniline hydrochloride**

(Contd. of page 2)

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

**Penetration time of glove material (in minutes)** Not determined

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:** Powder

**Color:** White

**Odor:** Characteristic

**Odor threshold:** Not determined.

**pH-value:** Not applicable.

**Change in condition**

**Melting point/Melting range:** >230 °C (>446 °F) (subl)

**Boiling point/Boiling range:** Not determined

**Sublimation temperature / start:** Not determined

**Flash point:** Not applicable

**Flammability (solid, gaseous)** Not determined.

**Ignition temperature:** Not determined

**Decomposition temperature:** Not determined

**Auto igniting:** Not determined.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

**Lower:** Not determined

**Upper:** Not determined

**Vapor pressure:** Not applicable.

**Density:** Not determined

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water:** Soluble

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**dynamic:** Not applicable.

**kinematic:** Not applicable.

**Other information** No further relevant information available.

**10 Stability and reactivity**

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

Nitrogen oxides

Hydrogen chloride (HCl)

Possibly Hydrogen cyanide (HCN)

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

Toxic in contact with skin.

Toxic if inhaled.

Toxic if swallowed.

Danger through skin absorption.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** May cause irritation

**Eye irritation or corrosion:** May cause irritation

**Sensitization:** May cause an allergic skin reaction.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:**

May cause cancer.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**Other information (about experimental toxicology):**

Tumorigenic effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with bacteria.

Mutagenic effects have been observed on tests with laboratory animals.

**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Kidney, Ureter, Bladder - changes in tubules (including acute renal failure, acute tubular necrosis).

Kidney, Ureter, Bladder - changes in bladder weight.

Blood - changes in spleen.

Blood - methemoglobinemia-carboxyhemoglobin.

Blood - changes in erythrocyte (RBC) count.

Blood - leukemia.

Blood - tumors.






Blood - lymphoma, including Hodgkin's disease.

(Contd. on page 4)  
USA

Product name: 4-Chloroaniline hydrochloride	
<div>Liver - other changes. Related to Chronic Data - death. Cardiac - changes in heart weight. Endocrine - tumors. Endocrine - adrenal cortex tumors. Tumorigenic - active as anti-cancer agent. Tumorigenic - carcinogenic by RTECS criteria. Tumorigenic - equivocal tumorigenic agent by RTECS criteria. Absorption into the body may lead to the formation of methemoglobin, producing cyanosis, and marked fall in blood pressure leading to collapse, coma and possibly death. Onset may be delayed 2-4 hours or longer. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.</div>	(Contd. of page 3)

12 Ecological information	
<div>Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxical effects: Remark: Very toxic for aquatic organisms Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Very toxic for aquatic organisms Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.</div>	

13 Disposal considerations	
<div>Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations. Recommended cleansing agent: Water, if necessary with cleansing agents.</div>	

14 Transport information	
UN-Number DOT, IMDG, IATA	UN2018
UN proper shipping name DOT IMDG IATA	Chloroanilines, solid CHLOROANILINES, SOLID, MARINE POLLUTANT CHLOROANILINES, SOLID
Transport hazard class(es) DOT	
<div></div>	
Class Label Class Label IMDG	6.1 Toxic substances. 6.1 6.1 (T2) Toxic substances 6.1
<div></div>	
Class Label IATA	6.1 Toxic substances. 6.1
<div></div>	
Class Label	6.1 Toxic substances. 6.1
Packing group DOT, IMDG, IATA	II
Environmental hazards: Marine pollutant (IMDG):	Environmentally hazardous substance, solid; Marine Pollutant Symbol (fish and tree)
Special precautions for user EMS Number:	Warning: Toxic substances F-A,S-A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT): Remarks:	No Special marking with the symbol (fish and tree).
UN "Model Regulation":	UN2018, Chloroanilines, solid, 6.1, II

**Product name: 4-Chloroaniline hydrochloride**

(Contd. of page 4)

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)  
**Hazard pictograms**



GHS06 GHS08  
**Signal word** Danger  
**Hazard statements**  
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.  
H317 May cause an allergic skin reaction.  
H350 May cause cancer.  
**Precautionary statements**  
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P273 Avoid release to the environment.  
P309 IF exposed or if you feel unwell:  
P310 Immediately call a POISON CENTER/doctor/...  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**  
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.  
All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).  
**SARA Section 313 (specific toxic chemical listings)** Substance is not listed.  
**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**  
20265-96-7 4-Chloroaniline hydrochloride

**Prop 65 - Developmental toxicity** Substance is not listed.  
**Prop 65 - Developmental toxicity, female** Substance is not listed.  
**Prop 65 - Developmental toxicity, male** Substance is not listed.  
**Information about limitation of use:**  
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.  
For use only by technically qualified individuals.  
**Other regulations, limitations and prohibitive regulations**  
**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.  
**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**  
Substance is not listed.  
**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.  
**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department  
**Date of preparation / last revision** 11/24/2015 / -

**Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
HMIS: Hazardous Materials Identification System (USA)  
WHMIS: Workplace Hazardous Materials Information System (Canada)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
vPvB: very Persistent and very Bioaccumulative  
ACGIH: American Conference of Governmental Industrial Hygienists (USA)  
OSHA: Occupational Safety and Health Administration (USA)  
NTP: National Toxicology Program (USA)  
IARC: International Agency for Research on Cancer  
EPA: Environmental Protection Agency (USA)