



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.40

Section 1 - Product and Company Information

Product Name	Hydroxylamine hydrochloride, 98%, A.C.S. reagent		
Product Number	255580		
Brand	Aldrich Chemical		
Company	Sigma-Aldrich		
Street Address	3050 Spruce Street		
City, State, Zip, Country	SAINT LOUIS, MO 63103 US		
Technical Phone:	314 771 5765	Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052		

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
HYDROXYLAMINE HYDROCHLORIDE	5470-11-1	No
Formula	H2NOH.HCl	
Synonyms	Hydroxylamine hydrochloride, Hydroxyammonium chloride, Hydroxylamine chloride, Hydroxylamine chloride (1:1), Hydroxylammonium chloride, Oxammonium hydrochloride	

Section 3 - Hazards Identification

Emergency Overview
Toxic. Dangerous for the environment.
Toxic if swallowed. May cause sensitization by skin contact. Harmful: danger of serious damage to health by prolonged exposure if swallowed. Very toxic to aquatic organisms. Irritating to eyes and skin.
Target organ(s): Blood.

HMIS Rating	Flammability: 0	Reactivity: 1
NFPA Rating	Flammability: 0	Reactivity: 1

*additional chronic hazards present.
For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

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

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

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

Eye Exposure
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.

Section 5 - Fire Fighting Measures

Explosion Hazards
Container explosion may occur under fire conditions.

Autoignition Temp: N/A

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

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

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

Section 6 - Accidental Release Measures

Procedure 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
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed.

Special Requirements
Air and moisture sensitive.

Section 8 - Exposure Controls / PPE

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

Personal Protective Equipment
Respiratory
Government approved respirator.
Hand
Compatible chemical-resistant gloves.
Eye
Chemical safety goggles.

General Hygiene Measures

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance			
Physical State	Color	Form	
Solid	White	Fine crystals	

Molecular Weight: 6,949 AMU

pH 25 - 35 20 °C Concentration: 50 g/l

BP/BP Range	N/A
MP/MP Range	155 - 157 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	167 g/cm3
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A

Flammability	N/A
Autoignition Temp	N/A
Solubility	
Solubility in Water:	Soluble.

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable
Stable.
Conditions of Instability
Air and moisture sensitive.
Materials to Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous Decomposition Products
Nitrogen oxides, Hydrogen chloride gas.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information**Route of Exposure****Skin Contact**

Causes skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

Causes eye irritation.

Inhalation

May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion

Toxic if swallowed.

Sensitization**Skin**

May cause allergic skin reaction.

Target Organ(s) or System(s)

Blood.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. 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. May cause convulsions.

RTECS Number: NC3675000

Toxicity Data

Oral - Rat: 141 mg/kg (LD50)
Remarks: Behavioral: Convulsions or effect on seizure threshold.
Oral - Mouse: 408 mg/kg (LD50)
Intraperitoneal - Mouse: 10 MG/KG (LD50)
Subcutaneous - Mouse: 125 MG/KG (LD50)

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Human	10 MG/L	Other cell types	Other mutation test systems
Human	25 MG/L	leukocyte	Cytogenetic analysis
Rat	19500 NG/PLATE	Embryo	Morphological transformation.
Mouse	220 MG/L (+S9)	lymphocyte	Mutation in microorganisms
Mouse	72 UMOL/L	Embryo	Cytogenetic analysis
Mouse	31300 UG/L	lymphocyte	Mutation in mammalian somatic cells.
Hamster	72 UMOL/L	Other cell types	Cytogenetic analysis
Hamster	5 MMOL/L	lung	Sister chromatid exchange
Monkey	50 MG/L	kidney	Micronucleus test
Monkey	25 MG/L	kidney	Cytogenetic analysis
Monkey	25 MG/L	kidney	Other mutation test systems
Mammal	500 MG/L	lymphocyte	Cytogenetic analysis
Mammal	25 MG/L	lymphocyte	Sister chromatid exchange Histidine reversion (Ames)

Section 12 - Ecological Information

Acute Ecotoxicity Tests

Test Type
LC50 Fish
Species
Leuciscus idus
Time: Value:
48.0 h 1 - 10 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

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.

Section 14 - Transport Information

DOT

Proper Shipping Name: Toxic solid, inorganic, n.o.s.
UN#: 3288
Class: 6.1
Packing Group: Packing Group III
Hazard Label: Keep away from food
PIH: Not PIH

IATA

Proper Shipping Name: Toxic solid, inorganic, n.o.s.
IATA UN Number: 3288
Hazard Class: 6.1
Packing Group: III

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: Xn N

Indication of Danger

Harmful. Dangerous for the environment.

Risk Statements R: 22 36/38 43 48/22 50

Harmful if swallowed. Irritating to eyes and skin. May cause sensitization by skin contact. Harmful: danger of serious damage to health by prolonged exposure if swallowed. Very toxic to aquatic organisms.

Safety Statements S: 22 24 37 61

Do not breathe dust. Avoid contact with skin. Wear suitable gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Classification and Label Text

Indication of Danger

Toxic. Dangerous for the environment.

Risk Statements

Toxic if swallowed. May cause sensitization by skin contact. Harmful: danger of serious damage to health by prolonged exposure if swallowed. Very toxic to aquatic organisms. Irritating to eyes and skin.

Safety Statements

Do not breathe dust. Avoid contact with skin. Wear suitable gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements

Target organ(s): Blood.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes
NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

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. 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 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.