

SAFETY DATA SHEET

Preparation Date: No data available

Revision Date: 06/18/2015

Revision Number: G1

Product identifier

Product code: H1085
Product Name: HYDROXYLAMINE HYDROCHLORIDE, CRYSTAL, REAGENT, ACS

Other means of identification

Synonyms: Hydroxyamine hydrochloride; Hydroxammonium chloride; Hydroxylamine chloride; Hydroxylammonium chloride; Oxammonium chloride
CAS #: 5470-11-1
RTECS # NC3675000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1B
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Toxic if swallowed
Harmful in contact with skin
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing cancer
May cause damage to organs through prolonged or repeated exposure
May cause respiratory irritation
May be corrosive to metals



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep only in original container
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see .? on this label)
Specific measures (see .? on this label)
Specific treatment (see .? on this label)
Absorb spillage to prevent material damage

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IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
 IF ON SKIN: Wash with plenty of soap and water
 Call a POISON CENTER or doctor/physician if you feel unwell
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Rinse mouth

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed
 Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Hydroxylamine Hydrochloride 5470-11-1	5470-11-1	100	*

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact:

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact:

Flush eye with water for 15 minutes. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Toxic if swallowed.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes eye irritation. Eye contact may result in redness or pain. Harmful in contact with skin. Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. May cause allergic skin reaction. May cause irritation of respiratory tract. Toxic if swallowed. Suspected of causing cancer.

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Nitrogen oxides, Hydrogen chlorides, Ammonia

Specific hazards: May be combustible at high temperatures
Decomposition may be initiated by action of localized heat.
Nitrogen oxides, Hydrogen chloride, ammonia and/or derivatives are hazardous decomposition products.
Decomposition starts at temperatures above 115°C.
Decomposes violently or explosively when heated above 140°C

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities**Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Hygroscopic. Moisture sensitive.

Incompatible Materials:

Alkalis. Organic materials. Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****National occupational exposure limits****United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Hydroxylamine Hydrochloride 5470-11-1	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Hydroxylamine Hydrochloride 5470-11-1	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Hydroxylamine Hydrochloride 5470-11-1	None	None

Appropriate engineering controls**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment**Personal Protective Equipment**

- Eye protection:** Safety glasses Safety glasses with side-shields
- Skin and body protection:** Chemical resistant apron. Gloves. Long sleeved clothing.
- Respiratory protection:** Effective dust mask Wear respirator with dust filter.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.	Appearance: Crystalline.	Color: White to yellowish.
Odor: Odorless.	Taste No information available	Molecular/Formula weight: 69.49
Formula: NH ₂ OH•HCl	Flammability: May be combustible at high temperatures	Flash point (°C): No data available
Flashpoint (°C/°F): 152°C/305.6°F	Flash Point Tested according to: Closed cup	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Autoignition Temperature (°C/°F): No information available	pH: 3.2
Melting point/range(°C/°F): No information available	Boiling point/range(°C/°F): No information available	Decomposition temperature(°C/°F): 151°-157°C/303.8°-314.6°F
Bulk density: No information available	Specific gravity: No information available	Vapor pressure @ 20°C (kPa): No information available
Density (g/cm³): 1.67	Evaporation rate: No information available	Vapor density: No information available
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available
Viscosity: No information available	Miscibility: No information available	Solubility: Easily soluble in hot water Soluble in cold water

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Moisture sensitive; Hygroscopic; keep container tightly closed.

Also incompatible with heat + sodium acetate or ether, carbonyl compounds, copper sulfate, zinc and phosphorus chlorides, aldehydes, ketones, iron and its salts, heavy metals salts, combustible and flammable materials (e.g. alkyl resins, asphalt, gasoline, grease, methyl acetone, polystyrene, polyurethane).

Hydroxylamine Hydrochloride reacts with alkalis to give free Hydroxylamine, which decomposes, especially in the presence of heavy metal ions and at elevated temperatures

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Incompatible materials. Exposure to moisture.

Incompatible Materials: Alkalis. Organic materials. Oxidizing agents.

Hazardous decomposition products: Ammonia. Hydrogen chloride. Nitrogen oxides (NO_x).

Other Information

Corrosivity: No information available

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Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Inhalation.

Acute Toxicity

Component Information

Hydroxylamine Hydrochloride - 5470-11-1

LD50/oral/rat = = 141 mg/kg Oral LD50 Rat

LD50/oral/mouse = 408 mg/kg Oral LD50 Mouse

LD50/dermal/rat = No information available

LD50/dermal/rabbit = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 141mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 408mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:

Harmful in contact with skin. May cause allergic skin reaction. Causes skin irritation. Depending on the duration of skin contact, it may cause reddening, discomfort, severe irritation, and possible chemical burns. Chemical burns result in blistering of the skin and possible scarring.

Eye Contact:

Causes serious eye irritation.

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Inhalation

May cause respiratory tract irritation. It may be destructive to the tissues of the mucous membranes and upper respiratory tract. Symptoms may include respiratory tract irritation or burning sensation/burns of the mucous membranes, breathing difficulty, coughing, wheezing, shortness of breath, dyspnea (labored breathing), nasal congestion, laryngitis, sore throat, headache, nausea, vomiting, and Methemoglobinemia (a condition that affects the ability of the blood to carry oxygen), and cyanosis (blue color of the skin due to lack of oxygen). Inhalation of low levels can cause allergic sensitization and reaction in susceptible individuals. Severe inhalation over-exposure can be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may be delayed.

Ingestion

Toxic if swallowed. It can cause severe irritation and burns of the mouth, throat, esophagus, and other tissues of the digestive tract, nausea, vomiting, diarrhea. Conversion of hemoglobin to methemoglobin may also occur producing cyanosis (see acute inhalation). It may also cause a fall in blood pressure, ringing in the ears, shortness of breath, and affect behavior/central nervous system (headache, vertigo, convulsions). Ingestion of large volumes may cause coma and be fatal as a result of circulatory collapse.

Aspiration hazard

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Chronic Toxicity**

Skin: Repeated or prolonged skin contact to low concentrations may cause dermatitis.
 Inhalation: Repeated or prolonged inhalation may cause allergic reaction in sensitized individuals.
 Inhalation/Ingestion: Prolonged or repeated exposure by inhalation or ingestion may affect metabolism (decreased appetite, weight loss), spleen, thyroid and blood/cause bone marrow damage (decreased leukocyte count, anemia). It may also cause liver, kidney, and bone marrow damage. This substance is a blood toxin. Prolonged or repeated exposure by ingestion or inhalation may also result in the conversion of hemoglobin to methemoglobin producing cyanosis.

Sensitization:

May cause sensitization by skin contact

Mutagenic Effects:

May affect genetic material
 Experiments with bacteria and/or yeast have shown mutagenic effects
 Mutagenic effects in mammalian somatic cells

Carcinogenic effects:

Suspected of causing cancer.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Hydroxylamine Hydrochloride	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity

No data is available

Reproductive Effects:
Developmental Effects:
Teratogenic Effects:

No information available
 No information available
 No information available

Specific Target Organ Toxicity

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STOT - single exposure No information available
STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.
Target Organs: No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.
Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
 Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
 Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Hydroxylamine Hydrochloride	None	None	None	None

14. TRANSPORT INFORMATION

DOT
UN-No: UN2923
Proper Shipping Name: Corrosive solids, toxic, n.o.s. (Hydroxylamine Hydrochloride)
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: III
ERG No: 154
Marine Pollutant No data available
DOT RQ (lbs): No information available
Symbol(s): G

TDG (Canada)
UN-No: UN2923
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Risk: (6.1)
Packing Group: III
Description: No information available

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ADR

UN-No: UN2923
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Packing Group: III
Subsidiary Risk: 6.1
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN2923
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-A
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN2923
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2923
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: III
Description: No information available

IATA

UN-No: UN2923
Proper Shipping Name: Corrosive solid, toxic, n.o.s.
Hazard Class: 8
Subsidiary Risk: 6.1
Packing Group: III
ERG Code: 8P
Description: No information available

15. REGULATORY INFORMATION

International Inventories

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Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Hydroxylamine Hydrochloride</i>	Present	Present KE-20602	Present	Present (1)-375	Present	Present	Present 226-798-2

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Hydroxylamine Hydrochloride</i>	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>Hydroxylamine Hydrochloride</i>	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Hydroxylamine Hydrochloride</i>	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

Non-controlled

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	Canada (DSL)	Canada (NDSL)
<i>Hydroxylamine Hydrochloride</i>	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
<i>Hydroxylamine Hydrochloride</i>	Not listed	Not listed

EU Classification

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R-phrase(s)

R22 - Harmful if swallowed.

R43 - May cause sensitization by skin contact.

R50 - Very toxic to aquatic organisms.

R36/38 - Irritating to eyes and skin.

R48/22 - Harmful: danger of serious damage to health by prolonged exposure if swallowed.

S -phrase(s)

S22 - Do not breathe dust.

S24 - Avoid contact with skin.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

Components	Classification	Concentration Limits:	Safety Phrases
Hydroxylamine Hydrochloride	E; R2 Xn; R21/22-48/22 Xi; R36/38 Carc.Cat.3; R40 R43 N; R50	No information	S2 S36/37 S61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

None.

16. OTHER INFORMATION

16. OTHER INFORMATION

Revision Date: 06/18/2015
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet