

## Praxair Material Safety Data Sheet

### 1. Chemical Product and Company Identification

<b>Product Name:</b> Hydroxylamine hydrochloride reagent (MSDS No. P-4898-C)	<b>Trade Name:</b> Hydroxylamine Hydrochloride Reagent for Acetylene Control Tests
<b>Chemical Name:</b> Solution of hydroxylamine hydrochloride and water	<b>Synonyms:</b> Part No. 5738-7205
<b>Formula:</b> Solution of $\text{ClH}_4\text{NO}$ & $\text{H}_2\text{O}$	<b>Chemical Family:</b> Not applicable
<b>Telephone:</b>	<b>Company Name:</b> Praxair, Inc. 39 Old Ridgebury Road Danbury, CT 06810-5113
<b>Emergencies:</b> 1-800-645-4633*	
<b>CHEMTREC:</b> 1-800-424-9300*	
<b>Routine:</b> 1-800-PRAXAIR	

\* Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-PRAXAIR (1-800-772-9247).

### 2. Composition/Information on Ingredients

See section 16 for important information about mixtures.

INGREDIENT	CAS NUMBER	CONCENTRATION	OSHA PEL	ACGIH TLV-TWA (2004)
Hydroxylamine hydrochloride	5470-11-1	36%*	None currently established	None currently established
Water	7732-18-5	64%*	None currently established	None currently established

\*Percentages are approximate

### 3. Hazards Identification

#### EMERGENCY OVERVIEW

**WARNING! Toxic, irritating liquid and vapor.  
May be harmful if inhaled or swallowed.  
May irritate the eyes, skin, and respiratory tract.  
Self-contained breathing apparatus and protective clothing may be required/must be worn by rescue workers.  
Odor: None**

**THRESHOLD LIMIT VALUE:** None currently established (ACGIH, 2004).

#### EFFECTS OF A SINGLE (ACUTE) OVEREXPOSURE:

**INHALATION**—Mists may irritate the respiratory tract, causing coughing, sneezing, dizziness, headache, and nausea. High concentrations may cause convulsions and respiratory collapse.

**SKIN CONTACT**—May irritate the skin causing local redness and possible swelling. May sensitize the skin of susceptible individuals. If skin contact is prolonged or widespread, harmful amounts of material may be absorbed.

**SWALLOWING**—May cause nausea, vomiting, dizziness, headache, cyanosis, convulsions, and coma.

**EYE CONTACT**—May irritate the eyes, producing redness of the conjunctiva and excess tearing.

**EFFECTS OF REPEATED (CHRONIC) OVEREXPOSURE:** Repeated exposure may sensitize the skin of susceptible individuals.

**OTHER EFFECTS OF OVEREXPOSURE:** None known.

**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:** The irritating properties of this material may aggravate an existing dermatitis. Breathing mists may aggravate asthma and inflammatory or fibrotic pulmonary disease.

**SIGNIFICANT LABORATORY DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH HAZARD EVALUATION:** Tests have shown this material to be mutagenic in a variety of in-vitro test systems.

**CARCINOGENICITY:** None of the components of this material is listed by NTP, OSHA, or IARC.

#### 4. First Aid Measures

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

**SKIN CONTACT:** Remove contaminated clothing and shoes and wash skin with plenty of soap and water. Wash clothing before reuse. If irritation persists or if contact was prolonged, call a physician.

**SWALLOWING:** If victim is conscious and alert, give at least two glasses of milk or water and induce vomiting. Never give anything by mouth to an unconscious, convulsive, or unresponsive person. Call a physician.

**EYE CONTACT:** Immediately flush eyes thoroughly with plenty of water and continue for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. See a physician, preferably an ophthalmologist, immediately.

**NOTES TO PHYSICIAN:** *This material, depending on amount and duration of exposure, can cause high levels of methemoglobin. Treatment of overexposure should be directed at the control of symptoms and the clinical condition.*

**NOTE:** *This liquid is used in equipment to determine the purity of gaseous acetylene. Users must be familiar with the operations and hazards associated with the equipment.*

#### 5. Fire Fighting Measures

<b>FLASH POINT</b> (test method):	Not applicable	
<b>AUTOIGNITION TEMPERATURE:</b>	Not applicable	
<b>FLAMMABLE LIMITS IN AIR, % by volume:</b>	<b>LOWER:</b> Not applicable	<b>UPPER:</b> Not applicable
<b>EXTINGUISHING MEDIA:</b> Hydroxylamine hydrochloride reagent cannot catch fire. Use media appropriate for surrounding fire.		

**SPECIAL FIRE FIGHTING PROCEDURES: WARNING! Toxic, irritating liquid and vapor.** Evacuate all personnel from danger area. Wear self-contained breathing apparatus. Immediately deluge containers with water spray from maximum distance until cool; then move them away from fire area if without risk. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Heat of fire may build pressure in container, causing rupture. No part of a container should be subjected to temperatures above 125°F (52°C).

**HAZARDOUS COMBUSTION PRODUCTS:** Not applicable. Products of thermal decomposition include sulfur oxides, ammonia, and/or nitrogen oxides. (See section 10.)

## 6. Accidental Release Measures

**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: WARNING! Toxic, irritating liquid and vapor.** Do not get on skin, in eyes, or on clothing. Keep personnel away. Wear self-contained breathing apparatus where needed. Use solid absorbent to pick up spilled material. Ventilate area of spill, or move leaking container to a well-ventilated area. Prevent runoff from contaminating surrounding environment.

**WASTE DISPOSAL METHOD:** Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

## 7. Handling and Storage

**PRECAUTIONS TO BE TAKEN IN STORAGE:** Store in a cool, dry, well-ventilated area. Keep container closed when not in use and when empty.

**PRECAUTIONS TO BE TAKEN IN HANDLING:** Protect containers against physical damage. Wash thoroughly after handling.

## 8. Exposure Controls/Personal Protection

### VENTILATION/ENGINEERING CONTROLS:

**LOCAL EXHAUST**—Use local exhaust ventilation with sufficient air flow velocity to keep vapor concentrations low.

**MECHANICAL (general)**—May be acceptable under certain conditions if sufficient to keep vapor concentrations low.

**SPECIAL**—None

**OTHER**—None

**RESPIRATORY PROTECTION:** Use air-supplied respirators where vapor concentrations are high. Respiratory protection must conform to OSHA rules as specified in 29 CFR 1910.134. Select per OSHA 29 CFR 1910.134 and ANSI Z88.2.

**SKIN PROTECTION:** Wear butyl rubber gloves. Select in accordance with OSHA 29 CFR 1910.132.

**EYE PROTECTION:** Select in accordance with OSHA 29 CFR 1910.133.

**OTHER PROTECTIVE EQUIPMENT:** Protective clothing where needed. Select in accordance with OSHA 29 CFR 1910.132 and 1910.133. Regardless of protective equipment, never touch live electrical parts.

### 9. Physical and Chemical Properties

<b>SPECIFIC GRAVITY</b> (H <sub>2</sub> O = 1) at 68°F (20°C):	1.36 (calculated)
<b>SPECIFIC GRAVITY</b> (Air = 1) at 68°F (20°C) and 1 atm:	0.014
<b>VAPOR PRESSURE</b> at 68°F (20°C) and 1 atm:	0.3392 psig (17.54 mm Hg) (estimated)
<b>SOLUBILITY IN WATER</b> at 68°F (20°C):	100%
<b>PERCENT VOLATILES BY VOLUME:</b>	>64%
<b>EVAPORATION RATE</b> (Butyl Acetate = 1):	Low
<b>pH:</b>	2.0
<b>BOILING POINT</b> at 1 atm:	216.9°F (102.7°C) (calculated)
<b>FREEZING POINT</b> at 1 atm:	14.7°F (-9.6°C)
<b>APPEARANCE, ODOR, AND STATE:</b> Clear, colorless liquid; odorless.	

### 10. Stability and Reactivity

**STABILITY:**  Unstable  Stable

**INCOMPATIBILITY (materials to avoid):** Mixtures containing ethers and aldehydes. Mixtures containing pyridine and sodium acetate. Acids, alkalis, oxidizers, water reactive compounds such as alkali metals, metal hydrides, and/or complex hydrides.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Thermal decomposition may produce hydrogen chloride, ammonia, and/or nitrogen oxides.

**HAZARDOUS POLYMERIZATION:**  May Occur  Will Not Occur

**CONDITIONS TO AVOID:** Heat. Solution is stable at normal temperatures and pressures.

### 11. Toxicological Information

See section 3.

### 12. Ecological Information

Hydroxylamine hydrochloride reagent does not contain any Class I or Class II ozone-depleting chemicals. None of the components of this solution is listed as a marine pollutant by DOT.

### 13. Disposal Considerations

**WASTE DISPOSAL METHOD:** Dispose of this product in an environmentally acceptable manner in full compliance with federal, state, and local regulations. Do not pour down drains, into sewers, or otherwise release into the environment. Place into lab packs for pickup by a licensed hazardous waste disposal service or use other authorized means. See section 6 for disposal following spills.

### 14. Transport Information

DOT/IMO SHIPPING NAME: Not regulated

<b>HAZARD CLASS:</b> Not applicable	<b>IDENTIFICATION NUMBER:</b> Not applicable	<b>PRODUCT RQ:</b> None
<b>SHIPPING LABEL(s):</b> Not applicable		
<b>PLACARD (when required):</b> Not applicable		

### 15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

#### U.S. FEDERAL REGULATIONS:

##### EPA (ENVIRONMENTAL PROTECTION AGENCY)

**CERCLA:** COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (40 CFR Parts 117 and 302):

**Reportable Quantity (RQ):** None

##### SARA: SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:

**SECTIONS 302/304:** Require emergency planning based on Threshold Planning Quantity (TPQ) and release reporting based on Reportable Quantities (RQ) of Extremely Hazardous Substances (EHS) (40 CFR Part 355):

**Threshold Planning Quantity (TPQ):** None

**EHS RQ (40 CFR 355):** None

**SECTIONS 311/312:** Require submission of MSDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

**IMMEDIATE:** Yes

**PRESSURE:** No

**DELAYED:** Yes

**REACTIVITY:** No

**FIRE:** No

**SECTION 313:** Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

None of the components of this solution is reportable under Section 313.

**40 CFR 68: RISK MANAGEMENT PROGRAM FOR CHEMICAL ACCIDENTAL RELEASE PREVENTION:** Requires development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

None of the components of this solution is listed as a regulated substance.

**TSCA: TOXIC SUBSTANCES CONTROL ACT:** The components of this solution are listed on the TSCA inventory.

**OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:**

**29 CFR 1910.119: PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS:** Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

None of the components of this solution is listed in Appendix A as a highly hazardous chemical.

**STATE REGULATIONS:**

**CALIFORNIA:** None of the components of this solution is listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 65).

**PENNSYLVANIA:** The components of this solution are subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

<b>16. Other Information</b>
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Be sure to read and understand all labels and instructions supplied with all containers of this product.

**OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE:** *Toxic, irritating liquid and vapor.* Do not get liquid or vapor in eyes, on skin, or on clothing. Have safety showers and eyewash fountains immediately available to exposed workers. Wash thoroughly after handling. *Store and use with adequate ventilation at all times.* (See section 8.) Keep container closed when not in use, even when empty. *Use piping and equipment compatible with the components of this solution.*

**NOTE:** *Prior to using any plastics, confirm their compatibility with the components of this solution.*

**MIXTURES:** When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, solids, liquids, and vapors have properties that can cause serious injury or death.

**HAZARD RATING SYSTEMS:**

**NFPA RATINGS:**

HEALTH = 2  
FLAMMABILITY = 0  
INSTABILITY = 0  
SPECIAL = None

**HMIS RATINGS:**

HEALTH = 2  
FLAMMABILITY = 0  
PHYSICAL HAZARD = 0

Praxair asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

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The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

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