Honeywell

Material Safety Data Sheet

Hydroxylamine Sulfate Solution

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Hydroxylamine Sulfate Solution

OTHER/GENERIC NAMES: Hydroxylammonium Sulfate Solution

PRODUCT USE: Industrial Chemical

MANUFACTURER: Honeywell Specialty Materials
101 Columbia Road
Box 1053
Morristown, New Jersey 07962-1053

FOR MORE INFORMATION CALL:
(Monday-Friday, 9:00am-4:30pm)
1-800-707-4555

IN CASE OF EMERGENCY CALL:
(24 Hours/Day, 7 Days/Week)
1-800-707-4555 (Honeywell -Domestic)
602-365-4980 (Honeywell - International)
For Transportation Emergencies:
1-800-424-9300 (CHEMTREC - Domestic)
703-527-3887 (CHEMTREC - International)

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Hydroxylamine Sulfate	10039-54-0	30
Water	7732-18-5	70

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Material is a liquid which is corrosive to metal and is harmful if swallowed, inhaled or absorbed through the skin. Test results have indicated that contact with the skin and eyes may cause irritation (see Section 11). May sensitize the skin, causing dermatitis.

POTENTIAL HEALTH HAZARDS

SKIN: May be harmful if absorbed through the skin. Contact with solution or mist may cause irritation. May sensitize the skin, causing dermatitis.

EYES: Contact with solution or mist may cause irritation.

INHALATION: Harmful if inhaled. Material is irritating to tissue of the mucous membranes and upper respiratory tract. May produce effects similar to ingestion.

INGESTION: Harmful if swallowed. May produce blood effects (methemoglobinemia and anemia) reducing the blood's ability to transport oxygen. May cause convulsions.

DELAYED EFFECTS: Based on comparison to hydroxylamine which is not mutagenic in vivo, this material is not considered a mutagenic risk.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT NAME	NTP STATUS	IARC STATUS	OSHA LIST
No ingredients listed in this section.			

4. FIRST AID MEASURES

SKIN: Immediately flush with large quantities of water for at least 15 minutes. Remove contaminated clothing and launder before reuse. Get medical attention for irritation or any other symptom

EYES: Immediately flush with water, continuing for at least 15 minutes. Get immediate medical attention.

INHALATION: Remove to fresh air. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen provided a qualified operator is available. Get medical attention.

INGESTION: If conscious, rinse mouth with water. Give 2 to 4 glasses of water or milk. Do not induce vomiting unless advised to do so by a physician. Get immediate medical attention.

ADVICE TO PHYSICIAN: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Not applicable. (aqueous solution)
FLASH POINT METHOD: Not applicable.
AUTOIGNITION TEMPERATURE: Not determined.
UPPER FLAME LIMIT (volume % in air): Not applicable.
LOWER FLAME LIMIT (volume % in air): Not applicable.
FLAME PROPAGATION RATE (solids): Not applicable.
OSHA FLAMMABILITY CLASS: None.

EXTINGUISHING MEDIA:
Use water spray, dry chemical, carbon dioxide or appropriate foam.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
May explode if confined at or above 284°F (140°C).

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Wear NIOSH approved self-contained breathing apparatus with full facepiece and acid-resistant clothing to prevent contact with skin and eyes. Use water spray to cool fire exposed containers.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Provide ventilation to area. Wear NIOSH approved self-contained breathing apparatus, acid resistant clothing, rubber boots and gloves. Absorb with an inert absorbant and place in an approved, plastic, chemical waste container. For large spills, dike up with inert material and pump into same container. Do not allow pump to overheat. Wash spill site with water after material pickup is complete. Do not allow to enter into sewers or waterways.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)

Avoid contact with skin, eyes and clothing. Do not breathe vapor or mist. Use with adequate ventilation.

STORAGE RECOMMENDATIONS:

Store in a cool, dry, well ventilated area. Protect from physical damage. Keep containers closed and upright.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Use local (point) ventilation at product handling or transfer points. Use general mechanical ventilation for other work areas.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

If contact with solution or mist is possible, wear impervious gloves and work clothing. Do not take contaminated clothing, including protective clothing, home. Shower after work.

EYE PROTECTION:

For normal conditions wear chemical safety glasses or goggles. If contact with liquid is possible, use a full-face shield.

RESPIRATORY PROTECTION:

Not required when used with adequate ventilation. If there is potential for inhalation of vapor or mist, use a full face NIOSH approved respirator.

The respirator must be selected based on contamination levels and use conditions found in the workplace, must not exceed the working limits of the respirator and be approved by the National Institute for Occupational Safety and Health (NIOSH) and used in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.134.

ADDITIONAL RECOMMENDATIONS:

Provide eyewash station and safety showers convenient to work areas.

EXPOSURE GUIDELINES (Guidelines exist for the following ingredients)

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
No ingredients listed in this section.			

* = Limit established by Honeywell.
** = Workplace Environmental Exposure Level (AIHA).
*** = Biological Exposure Index (ACGIH).

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:
None.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Water white solution.
PHYSICAL STATE:	Liquid.
MOLECULAR WEIGHT:	164
CHEMICAL FORMULA:	$(H_2NOH)_2 \cdot H_2SO_4$
ODOR:	Odorless.
SPECIFIC GRAVITY (water = 1.0):	1.19 gm/ml @ 68°F (20°C).
SOLUBILITY IN WATER (weight %):	37% @ 68°F (20°C).
pH:	3.6 (30% aqueous solution).
BOILING POINT:	217.4°F (103°C).
MELTING POINT:	Not determined.
VAPOR PRESSURE:	Not determined.
VAPOR DENSITY (air = 1.0):	Not determined.
EVAPORATION RATE:	Not determined. **COMPARED TO:** Not applicable.
% VOLATILES:	Not applicable.
FLASH POINT:	Not applicable (aqueous solution).

(Flash point method and additional flammability data are found in Section 5.)

10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):
Tests indicate material is stable when stored at 194°F (90°C) for 7 days. Decomposition occurs after 3 hours at 266°F (130°C). Exothermic decomposition occurs after 3 hours at 284°F (140°C). Iron contamination can lower the decomposition temperature to 221°F (105°C).

INCOMPATIBILITIES:
Do not expose to alkalies (particularly when heated), and strong oxidants. Addition of 1% copper salt makes this material combustible.

HAZARDOUS DECOMPOSITION PRODUCTS:
Free hydroxylamine is produced when heated, particularly with alkalies. This may decompose with explosive force. Other potential decomposition products include ammonia, nitrogen, nitrous and sulfur oxides.

HAZARDOUS POLYMERIZATION:
Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:
Oral (rat) LD_{50}: 500-1000 mg/kg.
Rabbit Skin: 4 hr. Mild irritation.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:
Based on comparison to hydroxylamine which is not mutagenic in vivo, this material is not considered a mutagenic risk.

OTHER DATA:
None.

12. ECOLOGICAL INFORMATION

Hydroxylamine Sulfate rapidly degrades in oxygenated natural waters of neutral pH. Toxic to aquatic life.
LC_{50} (96 hrs.):
Flathead minnow - 7.2 ppm.
Daphnia - 1.2 ppm.

13. DISPOSAL CONSIDERATIONS

RCRA
Is the unused product a RCRA hazardous waste if discarded? Yes
If yes, the RCRA ID number is: D002 (Corrosive to metal)

OTHER DISPOSAL CONSIDERATIONS: Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all Local, State and Federal regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

Proper Shipping Description:

DOT: Hydroxylamine Sulfate Solution, 8, UN 2865, III.

Label(s) Required: Class 8, Corrosive.

NA Emergency Response Guidebook: Guide No. 154.

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Listed on the TSCA inventory.
OTHER TSCA ISSUES: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
No ingredients listed in this section.		

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate.

SARA 313 TOXIC CHEMICALS:
The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight % are found in Section 2.

INGREDIENT NAME	COMMENT
No ingredients listed in this section.	

STATE RIGHT-TO-KNOW
In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME	WEIGHT %	COMMENT
No ingredients listed in this section.		

ADDITIONAL REGULATORY INFORMATION:
None.

WHMIS CLASSIFICATION (CANADA):
Not determined.

FOREIGN INVENTORY STATUS:

Hydroxylamine Sulfate is listed on the following inventories:
EINECS. EINECS No. 233-118-8.
Canadian DSL.
Australian.
Korean.
Japanese (ENCS).
Philippine (PICCS).
China (Inventory of Existing Chemical Substances).

16. OTHER INFORMATION

CURRENT ISSUE DATE: March 18, 2002.

MATERIAL SAFETY DATA SHEET

Hydroxylamine Sulfate Solution

PREVIOUS ISSUE DATE: February 10, 2000.

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:

Amended Emergency Telephone Number, Section 2.
Added NFPA & HMIS Rating, Section 16.

OTHER INFORMATION:

NFPA Rating	HMIS Rating
Health: 1	Health: 1
Flammability: 1	Flammability: 1
Reactivity: 1	Reactivity: 1