according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 01.07.2015

Hydroxylammonium Chloride,ACS

SECTION 1: Identification of the substance/mixture and of the supplier

Product name:

Hydroxylammonium Chloride, ACS

Manufacturer/Supplier Article number: HH8595SS

Recommended uses of the product and restrictions on use: Laboratory

Manufacturer Details:

AquaPhoenix Scientific, Inc. 860 Gitts Run Road Hanover, PA 17331 1-717-632-1291

Emergency telephone number:

ChemTel: (24-hour)

+1(800)255-3924 +1(813)248-0585 (International)

SECTION 2: Hazards identification

Classification of the substance or mixture:



Corrosive Corrosive to metals, category 1



Toxic Acute toxicity (oral), category 3

Irritant

Acute toxicity (dermal), category 4 Skin irritation, category 2 Eye irritation, category 2A Skin sensitization, category 1



Health hazard Carcinogenicity, category 2

Specific target organ toxicity following repeated exposure, category 2



Environmentally Damaging

Acute hazards to the aquatic environment, category 1 Chronic hazards to the aquatic environment, category 1 $\!\!\!$

Corr. Metals 1. AcTox Dermal. 4. Skin Irrit. 2. Eye Irrit. 2A. Skin Sens. 1. Carc. 2. Specific Target. Organ tox. 2. Aquatic AcTox. 1. Aquatic ChrTox. 1. AcTox Oral 3.

Signal word: Danger

Hazard statements:

according to 29CFR1910/1200 and GHS Rev. 3

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| | May be corrosive to metals. |
|---|---|
| | Harmful in contact with skin. |
| | Causes skin irritation. |
| | May cause an allergic skin reaction. |
| | Suspected of causing cancer. |
| | May cause damage to organs through prolonged or repeated exposure. |
| | Causes serious eye irritation. |
| | Toxic if swallowed. |
| | Very toxic to aquatic life. |
| | Very toxic to aquatic life with long lasting effects. |
| Ρ | recautionary statements: |
| | If medical advice is needed have product container or label at hand. |
| | Keep out of reach of children. |
| | Read label before use. |
| | Keep only in original container. |
| | Use personal protective equipment as required. |
| | Contaminated work clothing should not be allowed out of the workplace. |
| | Wear protective gloves/protective clothing/eye protection/face protection. |
| | Do not breathe dust/fume/gas/mist/vapors/spray. |
| | Wash thoroughly after handling. |
| | Obtain special instructions before use. |
| | Do not handle until all safety precautions have been read and understood. |
| | Do not eat, drink or smoke when using this product. |
| | Avoid release to the environment. |
| | IF exposed or concerned: Get medical advice/attention. |
| | Rinse mouth. |
| | Absorb spillage to prevent material damage. |
| | 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 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 a rash occurs: Get medical advice/attention. |
| | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |
| | Store locked up. |
| | Store in a corrosive resistant container with a resistant inner liner. |
| | Dispose of contents/container. |
| | |

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

| Ingredients: | | | | |
|-----------------|--------------------------------|---------------------|-------|--|
| CAS 5470-11-1 | Hydroxylammonium Chloride, ACS | | 100 % | |
| Percentages are | | tages are by weight | | |

SECTION 4: First aid measures

according to 29CFR1910/1200 and GHS Rev. 3

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Description of first aid measures

After inhalation:

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists. If breathing difficult, give oxygen. Give artificial respiration if necessary.

After skin contact:

Wash hands and exposed skin with soap and plenty of water for 15-20 minutes. Seek medical attention if irritation persists or if concerned.

After eye contact:

Protect unexposed eye. Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Dilute mouth with water. Immediately get medical assistance.

Most important symptoms and effects, both acute and delayed:

Shortness of breath. Irritation. Nausea. Headache.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors. Container explosion may occur under fire conditions.

Advice for firefighters:

Protective equipment:

Wear protective eyeware, gloves, and clothing. Refer to Section 8.

Additional information (precautions):

Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Use personal protective equipment. Avoid contact with eyes, skin, and clothing.

Environmental precautions:

Prevent from reaching drains, sewer or waterway.

Methods and material for containment and cleaning up:

If necessary use trained response staff or contractor. Wear protective eyewear, gloves, and clothing. Absorb with suitable absorbent material such as sand or earth and containerize for disposal. Always obey local regulations.

Reference to other sections: None

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 01.07.2015

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SECTION 7: Handling and storage

Precautions for safe handling:

Wash hands after handling. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Avoid generating dust. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use only in well ventilated areas.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Store away from foodstuffs. Store away from oxidizing agents. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection

| Control parameters: | , , OSHA PEL TWA (Total Dust) 15 mg/m³ (50 mppcf*). , , ACGIH TLV TWA (inhalable particles) 10 mg/m3. | | |
|-----------------------------------|--|--|--|
| Appropriate engineering controls: | Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Ensure that dust-handling systems (exhaust ducts, dust collectors, vessels, and processing equipment) are designed to prevent the escape of dust into the work area. | | |
| Respiratory protection: | Use under a fume hood. | | |
| Protection of skin: | Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. | | |
| Eye protection: | Safety glasses with side shields or goggles. | | |
| General hygienic measures: | Wash hands before breaks and at the end of work. Wash hands and exposed skin with soap and plenty of water. Perform routine housekeeping to prevent dust generation. Before re-wearing, wash contaminated clothing. | | |

SECTION 9: Physical and chemical properties

| Appearance (physical state, color): | Clear colorless liquid | Explosion limit lower: Explosion limit upper: | Non Explosive Non Explosive |
|-------------------------------------|---------------------------------|--|--|
| Odor: | Odorless to slightly pungent | Vapor pressure at 20°C: | Not applicable |
| Odor threshold: | Not applicable | Vapor density: | Not applicable |
| pH-value: | 2.5 - 3.5 at 50 g/l at 20°C | Relative density: | 1.67 g/cm3 at 25°C |
| Melting/Freezing point: | Approx 0°C | Solubilities: | Soluble in water. |
| Boiling point/Boiling range: | Approx 100°C | Partition coefficient (n- octanol/water): | Not available |
| Flash point (closed cup): | Not applicable | Auto/Self-ignition temperature: | Not applicable |
| Evaporation rate: | 3.2 | Decomposition temperature: | >150°C |
| Flammability (solid, gaseous): | Not available | Viscosity: | a. Kinematic: Not applicable b. Dynamic: Not applicable |

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 01.07.2015

| Hydroxylammonium Chloride,ACS | | | | | |
|-------------------------------|---------------|--|--|--|--|
| Density at 20°C: | Not available | | | | |

SECTION 10: Stability and reactivity

Reactivity:

None under normal processing.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Exposure to moisture or water.

Incompatible materials:

Strong oxidizers. Phosphorous pentachloride. Calcium. Anhydrous copper(II) sulfate.

Hazardous decomposition products:

Nitrogen oxides (NOx), Hydrogen Chloride gas.

SECTION 11: Toxicological information

Acute Toxicity: No additional information. Chronic Toxicity: No additional information. Skin corrosion/irritation: No additional information. Serious eye damage/irritation: No additional information. Respiratory or skin sensitization: No additional information. Carcinogenicity:

Hydroxylammonium Chloride: Suspected human carcinogens.

Germ cell mutagenicity:

Rat: Embryo Morphological transformation. Hamster: Lungs Sister chromatid exchange

Reproductive Toxicity: No additional information. **STOT-single and repeated exposure**: No additional information. **Additional toxicological information:**

No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Aquatic Tox., LC50 - Leuciscus idus (Golden orfe) - 1 - 10 mg/l - 48.0 h.

Persistence and degradability: No additional information.

Bioaccumulative potential:

Not expected to bio accumulate.

Mobility in soil: No additional information.

Other adverse effects:

Very toxic to aquatic life with long lasting effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 01.07.2015

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SECTION 13: Disposal considerations

Waste disposal recommendations:

Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). 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. Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

US DOT

UN Number: ADR, ADN, DOT, IMDG, IATA

Not regulated

Limited Quantity Exception:

None

Bulk: RQ (if applicable): None Proper shipping Name: Not regulated. Hazard Class: None Packing Group: Not regulated. Marine Pollutant (if applicable): No Comments: None Non Bulk: RQ (if applicable): None Proper shipping Name: Not regulated. Hazard Class: None Packing Group: Not regulated. Marine Pollutant (if applicable): No Comments: None

SECTION 15: Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute,Chronic

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) :

All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

according to 29CFR1910/1200 and GHS Rev. 3

Initial preparation date: : 01.07.2015

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None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL) :

All ingredients are listed.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 3-0-1 HMIS: 3-0-1 GHS Full Text Phrases: None

Abbreviations and Acronyms:

- IMDG International Maritime Code for Dangerous Goods.
- PNEC. Predicted No-Effect Concentration (REACH).
- CFR Code of Federal Regulations (USA)
- SARA Superfund Amendments and Reauthorization Act (USA).
- RCRA. Resource Conservation and Recovery Act (USA).
- TSCA. Toxic Substances Control Act (USA).
- NPRI National Pollutant Release Inventory (Canada).
- DOT US Department of Transportation.
- IATA International Air Transport Association.
- GHS Globally Harmonized System of Classification and Labelling of Chemicals.
- ACGIH American Conference of Governmental Industrial Hygienists
- CAS Chemical Abstracts Service (division of the American Chemical Society).
- NFPA National Fire Protection Association (USA).
- HMIS Hazardous Materials Identification System (USA).
- WHMIS Workplace Hazardous Materials Information System (Canada).
- DNEL Derived No-Effect Level (REACH).