

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

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

Product name: REPLACE WITH ZN-5012-S

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: ZN-5014-S

Recommended uses of the product and restrictions on use: Laboratory Chemicals

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

AquaPhoenix Scientific, Inc
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Emergency telephone number:

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazards identification

Classification of the substance or mixture:



Corrosive

Serious eye damage, category 1



Irritant

Acute toxicity (oral, dermal, inhalation), category 4



Environmentally Damaging

Acute hazards to the aquatic environment, category 1
Chronic hazards to the aquatic environment, category 1

Eye Damage 1.
Acute Toxicity 4 (oral).
Aquatic Acute Toxicity 1.
Aquatic Chronic Toxicity 1.

Signal word: Danger

Hazard statements:

Causes serious eye damage.
Harmful if swallowed.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not eat, drink or smoke when using this product.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

Wear protective gloves/protective clothing/eye protection/face protection.
Wash skin thoroughly after handling.
Avoid release to the environment.
Rinse mouth.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Dispose of contents and container as instructed in Section 13.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7446-20-0	Zinc sulfate heptahydrate	100 %
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

After skin contact:

Rinse/flush exposed skin gently using soap and water for 15-20 minutes. Seek medical advice if discomfort or irritation persists.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation, discomfort, or vomiting persists. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Irritation- all routes of exposure. Inhalation of fumes may cause metal fume fever, which is characterized by flu-like symptoms with metallic taste, fever, chills, cough, weakness, chest pain, muscle pain and increased white blood cell count. Headache. Nausea. Shortness of breath. May cause bronchitis.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

Use agent most suitable for extinguishing surrounding fire. Use water spray to keep fire-exposed containers

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

cool.

Unsuitable extinguishing agents:

None identified.

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors. Containers may explode in the heat of a fire.

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing. Use NIOSH-approved respiratory protection/breathing apparatus. Refer to Section 8.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Always obey local regulations. Containerize for disposal. Refer to Section 13. Sweep up and containerize for disposal. Avoid generating dust. Refer to Section 8. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Do not eat, drink, smoke, or use personal products when handling chemical substances. Refer to Section 13.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly closed. Store away from incompatible materials.

SECTION 8: Exposure controls/personal protection



Control parameters:

7446-20-0, Zinc, ACGIH TLV: NA, OSHA PEL: NA.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. 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.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

Respiratory protection:	Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.
Protection of skin:	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.
Eye protection:	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.
General hygienic measures:	Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Gray solid	Explosion limit lower:	Not determined
		Explosion limit upper:	Not determined
Odor:	Odorless	Vapor pressure at 20°C:	1 mmHg @ 487C
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	Not determined	Relative density:	Not determined
Melting/Freezing point:	419C	Solubilities:	Reacts with water
Boiling point/Boiling range:	908C	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not determined	Auto/Self-ignition temperature:	46 C
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	7.14 g/cm ³ at 20 °C		
Specific Gravity:	7.14		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions. Reacts with water.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Incompatible materials. Excess heat.

Incompatible materials:

Oxidizing agents. Strong acids or bases.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

Hazardous decomposition products:

Zinc oxides.

SECTION 11: Toxicological information

Acute Toxicity: None

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: No additional information.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity:

Reproductive effects shown in laboratory animals.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Fish (acute 7440-66-6): , 96 Hr LC50 Pimephales promelas: 2.16 - 3.05 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 0.211 - 0.269 mg/L [semi-static]; 96 Hr LC50 Pimephales promelas: 2.66 mg/L [static]; 96 Hr LC50 Cyprinus carpio: 30 mg/L; 96 Hr LC50 Cyprinus carpio: 0.45 mg/L [semi-static]; 96 Hr LC50 Cyprinus carpio: 7.8 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 3.5 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 0.24 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 0.59 mg/L [semi-static]; 96 Hr LC50 Oncorhynchus mykiss: 0.41 mg/L [static].

Crustacea (acute 7440-66-6): , 48 Hr EC50 Daphnia magna: 0.139 - 0.908 mg/L [Static].

Algae (acute 7440-66-6), 96 Hr EC50 Pseudokirchneriella subcapitata: 0.11 - 0.271 mg/L [static]; 72 Hr EC50 Pseudokirchneriella subcapitata: 0.09 - 0.125 mg/L [static].

Persistence and degradability: No additional information.

Bioaccumulative potential: No additional information.

Mobility in soil: No additional information.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

SECTION 14: Transport information

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

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 additional information.

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 additional information.

Comments: None

SECTION 15: Regulatory information

United States (USA)

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

None of the ingredients are listed.

SARA Section 313 (Specific toxic chemical listings):

7440-66-6 Zinc Compounds (N982).

RCRA (hazardous waste code):

7440-66-6 Zinc [Phase 4 LDR Rule - Universal Treatment Standards 2.61 mg/L (wastewater); 4.3 mg/L TCLP (nonwastewater)].

TSCA (Toxic Substances Control Act) :

All ingredients are listed.

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

7440-66-6 Zinc 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm).

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:

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.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

REPLACE WITH ZN-5012-S

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: 3-0-0

HMIS: 3-0-0

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
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).
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.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

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

Product name: Aluminum Chloride,0.1M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMAC7350-B

Recommended uses of the product and restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

AquaPhoenix Scientific Inc.
9 Barnhart Drive, Hanover PA 17331
(717) 632-1291

Emergency telephone number:

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazards identification

Classification of the substance or mixture: Not classified for physical or health hazards under GHS.

Signal word: None

Hazard statements: None

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not eat, drink or smoke when using this product.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7784-13-6	Aluminum Chloride Hexahydrate	2.4 %
CAS 7732-18-5	Deionized Water	97.6 %
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

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. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

After skin contact:

Wash affected area with soap and water. Rinse thoroughly. Seek medical attention if irritation, discomfort or vomiting persists.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists. Dilute with milk and water. Seek medical attention immediately.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Notes to Physician: Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors.

Advice for firefighters:

Protective equipment: None

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Avoid contact with eyes, skin, and clothing. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Aluminum Chloride has moderate acute and high chronic toxicity to aquatic life.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Cover the spill with sodium bicarbonate. Mix and add water to form slurry. Flush to sewer with

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

large quantities of water. Treat solid residue as normal refuse. Always obey local regulations.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Wash hands after handling. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly closed. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection



Control parameters:

7784-13-6, Aluminum Chloride, ACGIH TLV: 2mg/m3.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Eye protection:

Safety glasses with side shields or goggles.

General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	Explosion limit lower: Explosion limit upper:	0 Vol % 0 Vol %
Odor:	Odorless	Vapor pressure at 20°C:	2.3 kPa (@ 20°C) or 23 hPa (17 mm Hg) at 20 °C (68 °F)
Odor threshold:	Not determined	Vapor density:	0.62 (Air = 1)
pH-value:	7 [Neutral] (1% soln/water)	Relative density:	1 (Water = 1)

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

Melting/Freezing point:	0 °C (32 °F)	Solubilities:	Infinite solubility.
Boiling point/Boiling range:	100°C (212°F)	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not applicable	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not applicable	Viscosity:	a. Kinematic: Not determined b. Dynamic: 0.952 mPas at 20 °C (68 °F)
Density at 20°C:	1 g/cm ³ (8.345 lbs/gal) at 20 °C (68 °F)		

SECTION 10: Stability and reactivity

Reactivity: None

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions: None

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases.

Incompatible materials:

Strong acids. Strong bases.

Hazardous decomposition products:

Carbon oxides (CO, CO₂). Chlorides.

SECTION 11: Toxicological information

Acute Toxicity: No additional information.

Chronic Toxicity:

Dermal:

See Section 2.

Skin corrosion/irritation:

See Section 2.

Serious eye damage/irritation:

See Section 2.

Respiratory or skin sensitization:

See Section 2.

Carcinogenicity: No additional information.

Germ cell mutagenicity:

See Section 2.

Reproductive Toxicity:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

See Section 2.

STOT-single and repeated exposure:

See Section 2.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Ecotoxicity, Aluminum Chloride has moderate acute and high chronic toxicity to aquatic life.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential: No additional information.

Mobility in soil:

Aqueous solution has high mobility in soil.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. 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). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Waste Disposal/Waste Disposal of Packaging.

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 additional information.

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 additional information.

Comments: None

SECTION 15: Regulatory information

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

United States (USA)

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

None of the ingredients are listed.

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:

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: 2-0-0

HMIS: 2-0-0

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.

IATA International Air Transport Association.

GHS Globally Harmonized System of Classification and Labelling of Chemicals.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Aluminum Chloride,0.1M

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).
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.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Ammonium Hydroxide, 1.0M

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

Product name: Ammonium Hydroxide, 1.0M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: AH1090-B

Recommended uses of the product and restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

AquaPhoenix Scientific, Inc
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Emergency telephone number:

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazards identification

Classification of the substance or mixture: Not classified for physical or health hazards under GHS.

Signal word: None

Hazard statements: None

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not eat, drink or smoke when using this product.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 1336-21-6	Ammonium Hydroxide, ACS	5.9 %
CAS 7732-18-5	Deionized Water	94.1 %
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Ammonium Hydroxide, 1.0M

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. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

After skin contact:

Wash affected area with soap and water. Rinse thoroughly. Seek medical attention if irritation, discomfort or vomiting persists. Flush for 15 minutes.

After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Immediately flush exposed eye(s) gently using water for 15-20 minutes. Immediately get medical assistance if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual dilute with milk or water. Get medical assistance if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Notes to Physician: Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors.

Advice for firefighters:

Protective equipment: None

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Avoid contact with skin, eyes, and clothing. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Cover spill.....solid as normal refuse. Ventilate area of spill.

Reference to other sections: None

SECTION 7: Handling and storage

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Ammonium Hydroxide, 1.0M

Precautions for safe handling:

Prevent formation of aerosols. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Wash hands after handling. Avoid contact with eyes, skin, and clothing. Empty containers may be hazardous because....

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Store below 25C. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly closed. Protect from freezing.

SECTION 8: Exposure controls/personal protection



Control parameters:

1336-21-6, Ammonium Hydroxide, ACGIH TLV: 17 mg/m³, OSHA PEL: 35mg/m³.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable. Local/general exhaust is recommended, if the TLV is exceeded.

Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Eye protection:

Safety glasses with side shields or goggles.

General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	Explosion limit lower:	0 Vol %
		Explosion limit upper:	0 Vol %
Odor:	Odorless	Vapor pressure at 20°C:	2.3 kPa (@ 20°C) or 23 hPa (17 mm Hg) at 20 °C (68 °F)
Odor threshold:	Not determined	Vapor density:	0.62 (Air = 1)
pH-value:	7 [Neutral] (1% soln/water)	Relative density:	1 (Water = 1)

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Ammonium Hydroxide, 1.0M

Melting/Freezing point:	0 °C (32 °F)	Solubilities:	None
Boiling point/Boiling range:	100°C (212°F)	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not applicable	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not applicable	Viscosity:	a. Kinematic: Not determined b. Dynamic: 0.952 mPas at 20 °C (68 °F)
Density at 20°C:	1 g/cm ³ (8.345 lbs/gal) at 20 °C (68 °F)		

SECTION 10: Stability and reactivity

Reactivity: None

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions: None

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases, and excess heat.

Incompatible materials:

Strong oxidizers, strong acids, strong bases, gold, mercury, halogens, silver, and calcium.

Hazardous decomposition products:

Carbon oxides (CO, CO₂). Ammonia and nitrogen oxides.

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:

Irritation: Mildly irritating.

Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Ecotoxicity, Very toxic to aquatic life.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential: No additional information.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Ammonium Hydroxide, 1.0M

Mobility in soil:

Aqueous solution has high mobility in soil.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. 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). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Ventilate area of spill. Cover spill.....normal refuse.

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 additional information.

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 additional information.

Comments: None

SECTION 15: Regulatory information

United States (USA)

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

None of the ingredients are listed.

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):

1336-21-6 Ammonium Hydroxide 1000 lbs.

Proposition 65 (California):

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Ammonium Hydroxide, 1.0M

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:

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: 0-0-0

HMIS: 0-0-0

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
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).
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.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

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

Product name: Sodium Hydroxide,0.1N
Manufacturer/Supplier Trade name:
Manufacturer/Supplier Article number: KEMSH6200-B
Recommended uses of the product and restrictions on use: Laboratory chemicals

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

AquaPhoenix Scientific Inc.
9 Barnhart Drive, Hanover PA 17331
(717) 632-1291

Emergency telephone number:

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazards identification

Classification of the substance or mixture:



Corrosive

Corrosive to metals, category 1



Irritant

Skin irritation, category 2
Eye irritation, category 2A

Skin Irrit. 2.

Eye Irrit. 2A.

Metal Corr. 1.

Signal word: Warning

Hazard statements:

May be corrosive to metals.
Causes skin irritation.
Causes serious eye irritation.

Precautionary 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.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Absorb spillage to prevent material damage.
IF ON SKIN: Wash with soap and water.
Specific treatment (see supplemental first aid instructions on this label).

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
If eye irritation persists get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing.
Store in a corrosive resistant container with a resistant inner liner.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 1310-73-2	Sodium Hydroxide	0.4 %
CAS 7732-18-5	Deionized Water	99.6 %
Percentages are by weight		

SECTION 4: First aid measures

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.

After skin contact:

Take off contaminated clothing and shoes immediately. Wash affected area with soap and water. Seek medical attention if irritation, discomfort persist.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

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:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors. Sodium oxides.

Advice for firefighters:

Protective equipment:

Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Transfer to a disposal or recovery container. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Collect liquid and dilute with water. Neutralize with dilute acid solutions. Decant water to drain with excess water. Absorb with suitable material. Dispose of remaining solid as normal refuse. Always obey local regulations.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Absorb spillage to prevent material damage due to corrosiveness to metal. Avoid contact with eyes, skin, and clothing. Wash hands after handling. Do not mix with acids. Follow good hygiene procedures when handling chemical materials. Use only in well ventilated areas.

Conditions for safe storage, including any incompatibilities:

Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Store with Corrosives.

SECTION 8: Exposure controls/personal protection



Control parameters:

1310-73-2, Sodium Hydroxide, OSHA PEL TWA 2 mg/m³.
1310-73-2, Sodium Hydroxide, ACGIH TLV TWA 2 mg/m³.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

Respiratory protection:	Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.
Protection of skin:	The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
Eye protection:	Safety glasses with side shields or goggles.
General hygienic measures:	The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	Explosion limit lower:	Non Explosive
		Explosion limit upper:	Non Explosive
Odor:	Odorless	Vapor pressure at 20°C:	14mmHg @ 20C
Odor threshold:	Not determined	Vapor density:	>1
pH-value:	>12	Relative density:	Approx 1
Melting/Freezing point:	Approx 0°C	Solubilities:	Soluble in Water
Boiling point/Boiling range:	Approx 100°C	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not determined	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		

SECTION 10: Stability and reactivity

Reactivity:

Solution attacks metals such as aluminum, tin, lead and zinc. Also generates heat on exposure to acids.
Aqueous solutions react violently with acids.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions: None

Conditions to avoid:

Incompatible materials, excess heat.

Incompatible materials:

acids, Organic materials, Chlorinated solvents, Aluminum, Phosphorus, Tin/tin oxides, Zinc.

Hazardous decomposition products:

sodium oxides, hydrogen.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

Dermal LD50 Rabbit 1350 mg/kg 1310-73-2.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Rabbit: Causes Burns. 1310-73-2.

Serious eye damage/irritation:

Rabbit: Corrosive to eyes. 1310-73-2.

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Fish (acute 1310-73-2): , 96 Hr LC50 Oncorhynchus mykiss: 45.4 mg/L.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential:

Not expected to bio accumulate.

Mobility in soil: No additional information.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. 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). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Neutralize with dilute acid solutions.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA

Not Regulated.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

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 additional information.

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 additional information.

Comments: None

SECTION 15: Regulatory information

United States (USA)

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

None of the ingredients are listed.

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):

1310-73-2 Sodium Hydroxide 1000 lb.

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:

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

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide,0.1N

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: 1-0-0

HMIS: 1-0-0

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).

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

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

Product name: Hydrochloric Acid, 1.0N
Manufacturer/Supplier Trade name:
Manufacturer/Supplier Article number: KEMHA6141-B
Recommended uses of the product and restrictions on use: Laboratory chemicals

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

AquaPhoenix Scientific Inc.
9 Barnhart Drive, Hanover PA 17331
(717) 632-1291

Emergency telephone number:

Emergency Telephone No.: 800-255-3924

SECTION 2: Hazards identification

Classification of the substance or mixture:



Corrosive

Corrosive to metals, category 1
Skin corrosion, category 1B
Serious eye damage, category 1



Irritant

Specific target organ toxicity following single exposure, category 3

Corr Metals. 1.
Skin Corr. 1B.
Eye Damage. 1.
Stot SE. 3.

Signal word: Danger

Hazard statements:

May be corrosive to metals.
Causes severe skin burns and eye damage.
May cause respiratory irritation.
Causes serious eye damage.

Precautionary 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.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

Wear protective gloves/protective clothing/eye protection/face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

Specific treatment (see supplemental first aid instructions on this label).

Wash contaminated clothing before reuse.

Absorb spillage to prevent material damage.

Store in a well ventilated place. Keep container tightly closed.

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 7647-01-0	Hydrochloric Acid, ACS	9.75 %
CAS 7732-18-5	Deionized Water	90.25 %
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Consult a physician.

After skin contact:

Rinse hands with water for 20 minutes. Enter emergency shower rinsing while removing contaminated clothing and shoes. Immediately seek medical attention.

After eye contact:

Protect unexposed eye. Remove contact lenses, if present and easy to do, and continue rinsing. Continue rinsing eyes during transport to hospital. Immediately seek medical attention.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.

Most important symptoms and effects, both acute and delayed:

Headache. Nausea. Shortness of breath. Irritation/burns, all routes of exposure. Spasm, inflammation and edema of the larynx. Inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. (Hydrochloric acid).

Indication of any immediate medical attention and special treatment needed:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

If seeking medical attention provide SDS document to physician. Physician should treat symptomatically.

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:

Hydrogen chloride gas may be released.

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing. Poisonous gas may be produced in fire. Refer to Section 8.

Additional information (precautions):

Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing. Dust deposits should not be allowed to accumulate on surfaces.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

Methods and material for containment and cleaning up:

Wear protective eyewear, gloves, and clothing. Follow advice and precautions. If necessary use trained response staff or contractor. Absorb with suitable absorbent material such as sand or earth and containerize for disposal. Refer to Section 13. Sweep up and containerize for disposal. Avoid generating dust. Refer to Section 8. Refer to Section 5.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Wash hands after handling. Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice. Wear protective equipment. See Section 8. Refer to Section 13.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Store with like hazards. Keep away from open flames, hot surfaces, and sources of ignition. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly closed. Store away from incompatible materials.

SECTION 8: Exposure controls/personal protection



Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

Control parameters:	7647-01-0, Hydrochloric Acid, C 2 ppm USA. ACGIH. 7647-01-0, Hydrochloric Acid, C 5 ppm 7 mg/m ³ USA. NIOSH. 7647-01-0, Hydrochloric Acid, C 5 ppm 7 mg/m ³ USA. OSHA.
Appropriate engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Use under fume hood designed for hazardous chemicals with an average face velocity of 100 feet per minute or greater. Ensure that evacuation/ventilation systems are designed to prevent the escape of dust/mist/aerosols into the work area.
Respiratory protection:	Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.
Protection of skin:	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing. Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Eye protection:	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Wear tightly fitting safety goggles and a faceshield (8-inch minimum).
General hygienic measures:	Wash hands before breaks and at the end of work. Perform routine housekeeping to prevent dust generation. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear colorless liquid	Explosion limit lower: Explosion limit upper:	Not determined Not determined
Odor:	Pungent	Vapor pressure at 20°C:	4.0 atm @ 17.8C
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	1.1 (0.1N)	Relative density:	Not determined
Melting/Freezing point:	Approx. 0 °C	Solubilities:	Soluble in water.
Boiling point/Boiling range:	Approx. 100 °C	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not determined	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	> 1	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

Stable under normal conditions.

Possible hazardous reactions: None

Conditions to avoid:

Incompatible materials. Excess heat.

Incompatible materials:

Most metals, alkalis, cyanides, sulfides, sulfites, metal oxides, formaldehydes.

Hazardous decomposition products:

Fumes of hydrogen chloride and hydrogen in contact with metals. Chloride gas from oxidizers.

SECTION 11: Toxicological information

Acute Toxicity: No additional information.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Skin - rabbit Result: Causes burns. 7647-01-0.

Serious eye damage/irritation:

Eyes - rabbit (Hydrochloric acid) Result: Corrosive to eyes 7647-01-0.

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

STOT-single and repeated exposure:

7647-01-0: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. (Hydrochloric acid)

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Toxicity to fish LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h (Hydrochloric acid), 7647-01-0.

Persistence and degradability: No additional information.

Bioaccumulative potential: No additional information.

Mobility in soil: No additional information.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Treat the solid residue as normal refuse. Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification. Cover

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

spill with soda ash or calcium carbonate. Mix and add water to form slurry. Decant to drain.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA 1789

Limited Quantity Exception: None

Bulk:

RQ (if applicable): None

Proper shipping Name: Hydrochloric acid.

Hazard Class: 8

Packing Group: II.

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: Hydrochloric acid.

Hazard Class: 8

Packing Group: II.

Marine Pollutant (if applicable): No additional information.

Comments: None



SECTION 15: Regulatory information

United States (USA)

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

Acute

SARA Section 313 (Specific toxic chemical listings):

7647-01-0 Hydrochloric acid.

7647-01-0 Hydrogen Chloride.

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):

7647-01-0 Hydrochloric acid 5000 lb.

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:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 1.0N

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: 1-0-0

HMIS: 1-0-0

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).

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Copper Sulfate 0.4M

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

Product name: Copper Sulfate 0.4M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMCU3680-C

Recommended uses of the product and restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific, Inc.
9 Barnhart Drive
Hanover, PA 17331
1-717-632-1291

Supplier Details:

AquaPhoenix Scientific Inc.
9 Barnhart Drive, Hanover PA 17331
(717) 632-1291

Emergency telephone number:

ChemTel: (24-hour) (US and Canada)
1-(800)-255-3924

SECTION 2: Hazards identification

Classification of the substance or mixture: Not classified for physical or health hazards under GHS.

Signal word: None

Hazard statements: None

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not eat, drink or smoke when using this product.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7758-99-8	Cupric Sulfate, Pentahydrate	10 %
CAS 7732-18-5	Deionized Water	90 %
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Copper Sulfate 0.4M

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.

After skin contact:

Wash affected area with soap and water. Rinse thoroughly. Seek medical attention if irritation, discomfort or vomiting persists.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

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:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors.

Advice for firefighters:

Protective equipment: None

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Copper Sulfate 0.4M

Prevent formation of aerosols. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly closed.

SECTION 8: Exposure controls/personal protection



Control parameters:

No applicable occupational exposure limits.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection:

Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

Protection of skin:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Eye protection:

Safety glasses with side shields or goggles.

General hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, blue liquid	Explosion limit lower: Explosion limit upper:	0 Vol % 0 Vol %
Odor:	Odorless	Vapor pressure at 20°C:	2.3 kPa (@ 20°C) or 23 hPa (17 mm Hg) at 20 °C (68 °F)
Odor threshold:	Not determined	Vapor density:	0.62 (Air = 1)
pH-value:	7 [Neutral] (1% soln/water)	Relative density:	1 (Water = 1)
Melting/Freezing point:	0 °C (32 °F)	Solubilities:	Infinite.
Boiling point/Boiling range:	100°C (212°F)	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not applicable	Auto/Self-ignition temperature:	Not determined

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Copper Sulfate 0.4M

Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not applicable	Viscosity:	a. Kinematic: Not determined b. Dynamic: 0.952 mPas at 20 °C (68 °F)
Density at 20°C:	1 g/cm ³ (8.345 lbs/gal) at 20 °C (68 °F)		

SECTION 10: Stability and reactivity

Reactivity: None

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions: None

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases.

Incompatible materials:

Strong acids. Strong bases.

Hazardous decomposition products:

Carbon oxides (CO, CO₂).

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: No additional information.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity: No additional information.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential: No additional information.

Mobility in soil:

Aqueous solution has high mobility in soil.

Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Copper Sulfate 0.4M

Product/containers must not be disposed together with household garbage. 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). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

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 additional information.

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 additional information.

Comments: None

SECTION 15: Regulatory information

United States (USA)

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

None of the ingredients are listed.

SARA Section 313 (Specific toxic chemical listings):

N100 Copper Compounds.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) :

7758-99-8 Copper sulfate -- TSCA Not listed : not listed.

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

7758-99-8 Cupric sulfate pentahydrate 10 lbs.

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:

None of the ingredients are listed.

Safety Data Sheet
according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Copper Sulfate 0.4M

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL) :

7758-99-8 Copper sulfate -- DSL Not listed : not 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: 2-0-0

HMIS: 2-0-0

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
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).
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.