

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

Effective date : 12.05.2014

Sulfuric Acid,50%v/v(1:1),15mL

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

Product name: Sulfuric Acid,50%v/v(1:1),15mL

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: SA1940-AA

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:



Health hazard
Carcinogenicity, category 1A



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

Acute hazards to the aquatic environment, category 3

Skin Corrosion 1A.

Carcinogenic 1 (Strong inorganic acid mists/aerosols containing sulfuric acid).

Corrosive to metals. 1.

Eye corrosion 1.

Acute aquatic toxicity 3.

Signal word: Danger

Hazard statements:

May be corrosive to metals.
May cause cancer.
Causes severe skin burns and eye damage.
Causes serious eye damage.
Harmful to aquatic life.

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.

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Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
Do not breathe dust/fume/gas/mist/vapours/spray.
Keep only in original container.
Avoid release to the environment.
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.
Wash contaminated clothing before reuse.
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).
IF exposed or concerned: Get medical advice/attention.
Absorb spillage to prevent material damage.
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 7664-93-9	Sulfuric Acid	92 %
CAS 7732-18-5	water, Purified	8 %
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. Provide oxygen if breathing is difficult. Seek immediate medical advice.

After skin contact:

Rinse thoroughly. Rinse/flush exposed area gently using water for at least 30 minutes. Seek immediate medical assistance. Remove contaminated clothing and discard. Neutralize the soaking solution with sodium hydroxide solution.

After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Rinse/flush exposed eye(s) gently using water for at least 30 minutes. Seek immediate medical assistance. Rinse under the eyelids during flushing.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Do not induce

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vomiting. Seek immediate medical assistance.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath. Burning of eyes or skin. Coughing. Strong inorganic acid mists containing sulfuric acid can cause cancer. Lung damage, chronic bronchitis. Damage to teeth and stomach.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Use of soap may assist with neutralization on exposed skin in conjunction with flushing.

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. Use dry Chemical, foam, or carbon dioxide to extinguish fire.

Unsuitable extinguishing agents:

Do not use water directly on sulfuric acid.

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. Poisonous sulfur oxides are combustion products. Aerosols or mist may be produced in a fire. Sulfuric acid may ignite combustibles.

Advice for firefighters:

Protective equipment:

Use respiratory protective device against the effects of fumes/dust/aerosol. Wear protective equipment for fire and chemical resistance.

Additional information (precautions):

Containers may explode.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Neutralize with lime or soda ash. 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. Always obey local regulations. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor. Do not use water. Neutralize with lime or soda ash. Add water to form slurry. Decant water to drain with excess water. Dispose of remaining solid as normal refuse.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Do not mix with bases. Wash hands after handling. Avoid contact with eyes, skin, and clothing. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. Wear protective clothing and equipment. Do not

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handle with incompatibles (see Section 10). Avoid ingestion and inhalation.

Conditions for safe storage, including any incompatibilities:

Protect from freezing. Keep container tightly closed. 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. Do not store near incompatible materials (see Section 10). Store away from reducing agents.

SECTION 8: Exposure controls/personal protection



Control parameters:

7664-93-9, Sulfuric Acid., OSHA PEL: 1mg/m³.
7664-93-9, Sulfuric Acid., ACGIH TLV: 0.2 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 mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above. Use under a fume hood. Ensure eye wash and safety showers are available.

Respiratory protection:

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. Use under a fume hood. Respirator with acid gas cartridges.

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. Wear protective equipment to prevent contact with skin, eyes, or hair.

Eye protection:

Safety glasses with side shields or goggles. Face shield.

General hygienic measures:

Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	Explosion limit lower:	Not determined
		Explosion limit upper:	Not determined
Odor:	Odorless	Vapor pressure at 20°C:	Not determined
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	<3	Relative density:	1.04 - 1.06
Melting/Freezing point:	Below 0	Solubilities:	Soluble in water.
Boiling point/Boiling range:	Approx 100C	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

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Density at 20°C:	Not determined
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SECTION 10: Stability and reactivity

Reactivity:

Reacts violently with water with evolution of heat. Corrosive to metals.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

Reacts violently or explosively with incompatibles. Reacts with most metals to produce hydrogen gas, which may form explosive mixtures with air.

Conditions to avoid:

Store away from incompatible substances. excess heat.

Incompatible materials:

Organics. Metals. Strong acids. Strong bases. Alcohols. Chlorine. halogenated compounds. Combustible materials. Chlorates. Alkalines. Carbides. Fulminates. Reducing agents. Nitrates. Acetic acid. Oxidizing agents.

Hazardous decomposition products:

Oxides of sulfur. Carcinogenic mists/aerosols. Oxygen.

SECTION 11: Toxicological information

Acute Toxicity: No additional information.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Rabbit - Extremely corrosive and destructive to tissue. 7664-93-9.

Serious eye damage/irritation:

Rabbit - Corrosive to eyes. 7664-93-9.

Respiratory or skin sensitization: No additional information.

Carcinogenicity:

Strong inorganic acid mists containing sulfuric acid.: IARC Group 1

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:

7664-93-9, EC50 - Daphnia magna (Water flea) - 29 mg/l - 24 h.

7664-93-9, LC50 - Gambusia affinis (Mosquito fish) - 42 mg/l - 96 h.

Persistence and degradability:

Not applicable for test method.

Bioaccumulative potential:

Not expected to bio accumulate.

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Mobility in soil:

Aqueous solution has high mobility in soil.

Other adverse effects:

Concentrated sulfuric acid has moderate acute and chronic toxicity to aquatic life, which is driven by the pH of the aquatic environment, as a result of the presence of the acid. Small quantities will be neutralized by natural alkalinity.

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.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA 2796

Limited Quantity Exception: None

Bulk:

RQ (if applicable): None

Proper shipping Name: Sulfuric Acid Solution.

Hazard Class: 8

Packing Group: II.

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: Sulfuric Acid Solution.

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):

Reactive,Acute,Chronic

SARA Section 313 (Specific toxic chemical listings):

7664-93-9 Sulfuric acid.

RCRA (hazardous waste code):

None of the ingredients are listed.

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TSCA (Toxic Substances Control Act) :

All ingredients are listed.

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

7664-93-9 sulfuric acid 1000 lb.

Proposition 65 (California):

Chemicals known to cause cancer:

7664-93-9 sulfuric acid.

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: 3-0-2

HMIS: 3-0-2

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.

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CAS Chemical Abstracts Service (division of the American Chemical Society).

NFPA National Fire Protection Association (USA).

HMS Hazardous Materials Identification System (USA).

WHMIS Workplace Hazardous Materials Information System (Canada).

DNEL Derived No-Effect Level (REACH).

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Hydrochloric Acid Concentrated, ACS Grade

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

Product name: Hydrochloric Acid Concentrated, ACS Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: HA1000-4ML

Recommended uses of the product and restrictions on use: Laboratory

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
Corrosive to metals, category 1
Skin corrosion, category 1B



Irritant

Specific target organ toxicity following single exposure, category 3

Corr. Metals 1.

Corr. Skin 1B.

Eye Damage 1.

STOT. SE 3.

AcTox Oral. 4.

Signal word: Danger

Hazard statements:

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

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

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Keep only in original container.

Do not get in eyes, on skin, or on clothing.

Wash skin thoroughly after handling.

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 corrosive resistant stainless steel container with a resistant inner liner.

Dispose of contents and container to an approved waste disposal plant.

Other Non-GHS Classification: None**SECTION 3: Composition/information on ingredients****Ingredients:**

Ingredients:		
CAS 7647-01-0	Hydrochloric Acid, ACS	30-50 %
CAS 7732-18-5	Water	50-70 %
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 attention if irritation or coughing persists. Do not use mouth-to-mouth resuscitation. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

After skin contact:

Wash affected area with soap and water. Immediately remove contaminated clothing and shoes. Rinse thoroughly with plenty of water for at least 15 minutes. Immediately seek medical attention.

After eye contact:

Protect unexposed eye. Flush thoroughly with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do, and continue rinsing. Continue rinsing eyes during transport to hospital.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Immediately seek medical attention.

Most important symptoms and effects, both acute and delayed:

Inhalation may cause irritation to nose and upper respiratory tract, ulceration, coughing, chest tightness and shortness of breath. Higher concentrations cause tachypnoea, pulmonary oedema and suffocation. Ingestion may cause corrosion of lips, mouth, esophagus and stomach, dysphagia and vomiting. Pain, eye ulceration,

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conjunctival irritation, cataracts and glaucoma may occur following eye exposure. Erythema and skin irritation, as well as chemical burns to skin and mucous membranes may arise following skin exposure. Potential sequelae following ingestion of hydrochloric acid include perforation, scarring of the esophagus or stomach and stricture formation causing dysphagia or gastric outlet obstruction. Symptoms of burning sensation, cough, wheezing, laryngitis, shortness of breath, spasm, inflammation, edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. In some cases, RADS may develop. Respiratory symptoms may take up to 36 hours to develop. Material is extremely destructive to tissue of the mucous membranes, upper respiratory tract, eyes, and skin.

Indication of any immediate medical attention and special treatment needed:

Provide SDS 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:

Combustion products may include carbon oxides or other toxic vapors. If in contact with metals toxic fumes may be released.

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing. Refer to Section 8. Wear respiratory protection.

Additional information (precautions):

Thermal decomposition can produce poisoning chlorine. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing. Hydrochloric acid reacts also with many organic materials with liberation of heat.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational. Do not get in eyes, on skin or on clothing.

Environmental precautions:

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

Methods and material for containment and cleaning up:

Always obey local regulations. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Containerize for disposal. Refer to Section 13. Keep in suitable closed containers for disposal. Soak up with inert absorbent material and dispose of as hazardous waste. Cover spill with suitable absorbing agent. Mix and add water to form slurry. Wear protective eyewear, gloves, and clothing. Refer to Section 8.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Never use hot water and never add water to the acid. Do not allow contact between hydrochloric acid, metal, and organics. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Use only under a chemical fume hood. Wear personal protective equipment. Wash hands after handling. Do not get on skin, clothes or in eyes. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid splashes or spray in enclosed areas.

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Conditions for safe storage, including any incompatibilities:

Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Store away from incompatible materials. Corrosives area. Provide ventilation for containers. Keep container tightly closed. Containers for hydrochloric acid must be made from corrosion resistant materials: glass, polyethylene, polypropylene, and polyvinyl chloride, carbon steel lined with rubber or ebonite.

SECTION 8: Exposure controls/personal protection



Control parameters:

7647-01-0, Hydrochloric Acid, ACGIH: 2 ppm Ceiling.
7647-01-0, Hydrochloric Acid, NIOSH: 5 ppm Ceiling; 7 mg/m³ Ceiling.

Appropriate engineering controls:

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

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:

Face shield (8-inch minimum). Tightly fitting safety goggles.

General hygienic measures:

Perform routine housekeeping. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Before rewearing 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:	Alcohol	Vapor pressure at 20°C:	5.7mmHg @ 0C
Odor threshold:	0.3 - 14.9 mg/m ³	Vapor density:	1.27 (Air=1)
pH-value:	< 1	Relative density:	1.0 - 1.2
Melting/Freezing point:	- 74 C	Solubilities:	Infinite.
Boiling point/Boiling range:	81.5 - 110 C	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	Not applicable	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	>1.00	Decomposition temperature:	Not determined

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Flammability (solid, gaseous):	Non combustible	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		
Hydrochloric Acid	MW is 36.46		

SECTION 10: Stability and reactivity

Reactivity:

Reacts violently with bases and is corrosive.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

Attacks many metals in the presence of water forming flammable explosive gas (hydrogen). Reacts violently with oxidants forming toxic gas (chlorine).

Conditions to avoid:

Incompatible materials.

Incompatible materials:

Bases, Amines, Alkali metals, Metals, permanganates (potassium permanganate), Fluorine, Metal acetylides, Hexalithium disilicide. Most metals, reducing agents, strong oxidizing agents.

Hazardous decomposition products:

Hydrogen chloride gas. Carbon oxides.

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

LD50 Rabbit >5010 mg/kg 7647-01-0.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

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

Irritation causes burns by all exposure routes.

Serious eye damage/irritation:

Eyes - rabbit Result: Corrosive to eyes 7647-01-0.

Irritation causes burns by all exposure routes.

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

Germ cell mutagenicity:

Mutagenic effects have occurred in lab experimental animals.

Teratogenic effects have been observed in experimental animals.

Reproductive Toxicity:

Experiments have shown reproductive toxicity effects on lab animals.

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(Immediate/Delayed) Developmental effects have been observed in lab animals.

STOT-single and repeated exposure:

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

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

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:

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. Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. 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

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



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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 - Weight: 36.5 - 38% Threshold: 1.0.

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 1000 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.

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:

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.08.2015**Hydrochloric Acid Concentrated, ACS Grade**

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, 50% v/v (1:

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

Product name: Hydrochloric Acid, 50% v/v (1:
Manufacturer/Supplier Trade name:
Manufacturer/Supplier Article number: HA6350-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, 50% v/v (1:

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	<59 %
CAS 7732-18-5	Deionized Water	>41 %
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, 50% v/v (1:

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, 50% v/v (1:

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 to greenish yellow liquid	Explosion limit lower:	Not determined
Odor:	Pungent	Explosion limit upper:	Not determined
Odor threshold:	Not determined	Vapor pressure at 20°C:	Not determined
pH-value:	< 1	Vapor density:	Not determined
Melting/Freezing point:	Approx. 0C	Relative density:	Not determined
Boiling point/Boiling range:	Approx. 100C	Solubilities:	Soluble in water.
Flash point (closed cup):	Not determined	Partition coefficient (n-octanol/water):	Not determined
Evaporation rate:	> 1	Auto/Self-ignition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Decomposition temperature:	Not determined
Density at 20°C:	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: 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, 50% v/v (1:

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, 50% v/v (1:

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.

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:

None of the ingredients are listed.

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 01.12.2015

Hydrochloric Acid, 50% v/v (1:

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: 3-0-0

HMIS: 3-0-0

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 : 12.14.2014

Sodium Hydroxide6M

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

Product name: Sodium Hydroxide6M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: SH6310-AA

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:



Corrosive

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

Eye corr. 1.

Skin Corr.1A.

Metal Corr. 1.

Signal word: Danger

Hazard statements:

May be corrosive to metals.
Causes severe skin burns and eye damage.
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.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not breathe dust/fume/gas/mist/vapours/spray.
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.
Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

Effective date : 12.14.2014

Sodium Hydroxide6M

IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
Immediately call a POISON CENTER or doctor/physician.
Specific treatment (see supplemental first aid instructions on this label).
Absorb spillage to prevent material damage.
Store in a corrosive resistant container with a resistant inner liner.
Store locked up.
Dispose of contents/container.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 1310-73-2	Sodium Hydroxide	24 %
CAS 7732-18-5	Deionized Water	76 %
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:

Carbon dioxide. Carbon dioxide.

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

Effective date : 12.14.2014

Sodium Hydroxide6M

Special hazards arising from the substance or mixture:

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. Use under a chemical fume hood.

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Effective date : 12.14.2014

Sodium Hydroxide6M

Respiratory protection:	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. Use under a chemical fume hood.
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:	13.3	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.

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide6M

SECTION 11: Toxicological information

Acute Toxicity: No additional information.

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:

Not listed as a carcinogen.: 1310-73-2

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:

Not expected to bio accumulate.

Mobility in soil:

-1.87 (water).

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

1824

Limited Quantity Exception:

None

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide6M

Bulk:**RQ (if applicable):** None**Proper shipping Name:** Sodium hydroxide solution.**Hazard Class:** 8**Packing Group:** II.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**Non Bulk:****RQ (if applicable):** None**Proper shipping Name:** Sodium hydroxide solution.**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):**

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

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

Effective date : 12.14.2014

Sodium Hydroxide6M

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.
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 : 01.31.2015

Silver Nitrate,2M,4mL

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

Product name: Silver Nitrate,2M,4mL

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: SN3550-4ML

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:



Corrosive

Serious eye damage, category 1
Skin corrosion, category 1B



Environmentally Damaging

Chronic hazards to the aquatic environment, category 2
Acute hazards to the aquatic environment, category 2

Eye Dam. 1.
Aquatic Acute 2.
Aquatic Chronic 2.
Skin Corrosion 1B.

Signal word: Danger

Hazard statements:

Causes skin irritation.
Causes severe skin burns and eye damage.
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.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash skin thoroughly after handling.
Avoid release to the environment.
Do not breathe dust/fume/gas/mist/vapours/spray.

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Effective date : 01.31.2015

Silver Nitrate, 2M, 4mL

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN: Wash with soap and water.
Specific treatment (see supplemental first aid instructions on this label).
Collect spillage.
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. Store locked up.
Dispose of contents and container to an approved waste disposal plant.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7732-18-5	Deionized Water	73.05520131 %
CAS 7761-88-8	Silver Nitrate	26.94479869 %
Percentages are by weight		

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

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

After skin contact:

Wash hands and exposed skin with soap and plenty of water. Seek medical attention if irritation persists or if concerned. Seek immediate medical assistance.

After eye contact:

Protect unexposed eye. Flush exposed eye gently using water for 15-20 minutes. Remove contact lenses, if present and easy to do, and continue rinsing. Seek immediate medical assistance.

After swallowing:

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

Most important symptoms and effects, both acute and delayed:

Irritation. Shortness of breath. Headache. Nausea. Dizziness. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

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

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

Effective date : 01.31.2015

Silver Nitrate, 2M, 4mL

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. nitrogen oxides (NOx), Silver/silver oxides.

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing. 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. Avoid contact with eyes, skin, and clothing.

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. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Containerize for disposal. Refer to Section 13. Keep in suitable closed containers for disposal. Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Refer to Section 8.

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 sealed. Store away from incompatible materials. Protect from light. Recommended storage temperature: 2 - 8 °C.

SECTION 8: Exposure controls/personal protection



Control parameters:

7761-88-8, Silver nitrate, ACGIH TLV TWA 0.01 mg/m3.
7761-88-8, Silver nitrate, OSHA REL TWA 0.01 mg/m3.

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Effective date : 01.31.2015

Silver Nitrate,2M,4mL

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.
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 immediately after handling the product. Avoid contact with skin, eyes, and clothing. Before re-wearing wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	Explosion limit lower:	Not determined
		Explosion limit upper:	Not determined
Odor:	Odorless	Vapor pressure at 20°C:	14mmHg @ 20C
Odor threshold:	Not determined	Vapor density:	0.7
pH-value:	Not determined	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:	>1	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: n b. Dynamic: Not determined
Density at 20°C:	Not determined		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

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Silver Nitrate, 2M, 4mL

Incompatible materials. Excess heat. Light.

Incompatible materials:

Ammonium Hydroxide, organic materials, sulfides, charcoal, acetylene, ethanol, reducing agents, calcium carbide, alkalis, antimony salts, carbonates, bromides, arsenites, chlorides, ferrous salts, thiocyanates, Iodides, tartrates, tannic acid and phosphates.

Hazardous decomposition products: None

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:

There are no known carcinogenic chemicals in this product.:

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: No additional information.

Bioaccumulative potential: No additional information.

Mobility in soil: No additional information.

Other adverse effects:

Toxicity of Silver to aquatic life depends on hardness: the higher the concentration of hardness, the higher the concentration of silver needed to be considered toxic. Has high chronic toxicity to aquatic life which can cause shorten life span, reproductive problems, lower fertility, and changes in appearances and behavior.

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 together 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

US DOT

UN Number:

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Silver Nitrate,2M,4mL

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):

Acute,Chronic

SARA Section 313 (Specific toxic chemical listings):

N740 Silver Compounds.

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):

7761-88-8 Silver nitrate 1000 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.

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

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Effective date : 01.31.2015

Silver Nitrate,2M,4mL

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: None

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

Effective date : 02.11.2015

Aluminum Potassium Sulfate

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

Product name: Aluminum Potassium Sulfate
Manufacturer/Supplier Trade name:
Manufacturer/Supplier Article number: AL6000-400G
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: Not classified for physical or health hazards under GHS.

Signal word: None

Hazard statements: None

Precautionary statements: None

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7784-24-9	Aluminum Potassium Sulfate	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. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Do not perform mouth-to-mouth on an unconscious person.

After skin contact:

Wash affected area with soap and water. Seek medical attention if irritation persists or if concerned.

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.11.2015

Aluminum Potassium Sulfate

After eye contact:

Protect unexposed eye. Rinse or flush exposed eye gently using water for 15-20 minutes. Remove contact lenses, if present and easy to do, and continue rinsing. Occasionally lift the upper and lower eyelids while rinsing. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Immediately get medical assistance. Provide SDS document to physician.

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:

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

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture: None

Advice for firefighters:

Protective equipment:

Wear protective eyewear, gloves, and clothing.

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:

Use spark-proof tools and explosion-proof equipment.

Environmental precautions:

Should not be released into environment. Collect contaminated soil for characterization per Section 13.

Methods and material for containment and cleaning up:

Follow Chemical Hygiene Plan. Avoid dispersal of dust in the air. Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately. Always obey local regulations. If necessary use trained response staff or contractor. Do not clear dust on surfaces with compressed air. Observe precautions for protective equipment.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Dust deposits should not be allowed to accumulate on surfaces. Follow Chemical Hygiene Plan. Do not inhale gases, fumes, dust, mist, vapor, and aerosols. Dust may form an explosive mixture if sufficient concentration is released into the atmosphere. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Follow good hygiene procedures when handling chemical materials. 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:

Keep container tightly closed in a cool, dry, well-ventilated area. Store away from incompatible materials. Keep away from food, beverages, and feed sources.

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

Effective date : 02.11.2015

Aluminum Potassium Sulfate

SECTION 8: Exposure controls/personal protection



Control parameters:	, Nuisance dust, ACGIH TLV TWA:10mg/m ³ (inhalable particles). , Nuisance dust, OSHA PEL TWA: 15 mg/m ³ (total dust).
Appropriate engineering controls:	It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling. Normal ventilation is adequate.
Respiratory protection:	Not required under normal conditions of use.
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:	The usual precautionary measures are to be adhered to when handling chemicals. Wash hands before breaks and at the end of work. Wash hands and exposed skin with soap and plenty of water. Keep away from food, beverages, and feed sources.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	White powder	Explosion limit lower:	Non Explosive
		Explosion limit upper:	Non Explosive
Odor:	Odorless	Vapor pressure at 20°C:	Not applicable
Odor threshold:	Not applicable	Vapor density:	16.4
pH-value:	3.3 at 94.88 g/l	Relative density:	Not applicable
Melting/Freezing point:	92 °C (198 °F) - lit.	Solubilities:	Soluble in water.
Boiling point/Boiling range:	Decomposes	Partition coefficient (n-octanol/water):	Not applicable
Flash point (closed cup):	Not applicable	Auto/Self-ignition temperature:	Not applicable
Evaporation rate:	Not applicable	Decomposition temperature:	No information
Flammability (solid, gaseous):	No information	Viscosity:	a. Kinematic: Not applicable b. Dynamic: Not applicable
Density at 20°C:	1.757 g/mL at 25 °C (77 °F)		

SECTION 10: Stability and reactivity

Reactivity: None

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions: None

Conditions to avoid:

Excessive heat.

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according to 29CFR1910/1200 and GHS Rev. 3

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Aluminum Potassium Sulfate

Incompatible materials: None

Hazardous decomposition products:

Aluminum oxide. Sulfur 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:

Fetotoxicity: Rat oral administration resulted in effects on embryo or fetus (except death, e.g., stunted fetus)

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: 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:

Dilute with water and flush to sewer. 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

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA

None

Limited Quantity Exception:

None

Bulk:

RQ (if applicable): None

Proper shipping Name: None

Hazard Class: None

Packing Group: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: None

Hazard Class: None

Packing Group: None

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Effective date : 02.11.2015

Aluminum Potassium Sulfate

Marine Pollutant (if applicable): No
additional information.

Comments: None

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):

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

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

Effective date : 02.11.2015

Aluminum Potassium Sulfate

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 : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

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

Product name: Cobalt Chloride, Hexahydrate, ACS Grade
Manufacturer/Supplier Trade name:
Manufacturer/Supplier Article number: CC1625-25G
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:



Irritant

Acute toxicity (oral, dermal, inhalation), category 4
Skin sensitization, category 1
Respiratory sensitization, category 1



Environmentally Damaging

Chronic aquatic hazard, category 2



Health hazard

Germ cell mutagenicity, category 2
Carcinogenicity, category 1B
Reproductive toxicity, category 1B

Acute aquatic hazard, category 2

Acute Tox. 4 H302.

Hazards Not Otherwise Classified - Combustible Dust.

Aquatic Acute 2 H401.

Aquatic Chronic 2 H411.

Skin Sens. 1 H317.

Resp. Sens. 1 H334.

Muta. 2 H341.

Carc. 1B H350.

Repr. 1B H360.

Signal word: Danger

Hazard statements:

Harmful if swallowed.

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
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.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
Specific treatment (see supplemental first aid instructions on this label).
Rinse mouth.
Collect spillage.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN: Wash with soap and water.
If skin irritation or a rash occurs: Get medical advice/attention.
Store in a dry place.
Store locked up.
Dispose of contents/container.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7791-13-1	Cobalt dichloride hexahydrate	100 %
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. DO NOT use mouth-to-mouth resuscitation.

After skin contact:

Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Seek medical advice if discomfort or irritation persists. Remove contaminated clothing and shoes, wash clothing before reuse.

After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Rinse/flush exposed eye(s)

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Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

gently using water for 15-20 minutes occasionally lifting the upper and lower eyelids. Seek 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:

Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

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. Use spark-proof tools and explosion-proof equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Transfer to a disposal or recovery container. Use spark-proof tools and explosion-proof 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.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into environment.

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. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air. Collect solids in powder form using vacuum with HEPA filter.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Minimize dust generation and accumulation. Wash hands after handling. Avoid dispersal of dust in the air. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders

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

Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

can build static electricity charges when subjected to the friction of transfer and mixing operations. 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 generation of dust or fine particulate. 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. Store with like hazards.

SECTION 8: Exposure controls/personal protection



Control parameters:

7791-13-1, Cobalt (II) chloride hexahydrate, ACGIH TLV: 0.02 mg/m³, OSHA PEL: NA.

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. Use under a fume hood. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

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):	Pink to red crystals	Explosion limit lower:	Not determined
		Explosion limit upper:	Not determined
Odor:	Odorless	Vapor pressure at 20°C:	Not determined
Odor threshold:	Not determined	Vapor density:	Not determined

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

Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

pH-value:	4.6 (0.2M solution)	Relative density:	1.924
Melting/Freezing point:	87°C (189°F)	Solubilities:	76.7g/ 100mL (0°C)
Boiling point/Boiling range:	1049°C (1920°F)	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:	110°C (230°F)
Flammability (solid, gaseous):	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		
Molecular Weight:	237.95		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

Nonreactive under normal conditions.

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases. moisture. Dust generation, moisture, excessive heat.

Incompatible materials:

Strong acids. Strong bases. potassium and metal halides. sodium dispersions. t-butyl hydroperoxide. strong mineral acids.

Hazardous decomposition products:

Carbon oxides (CO, CO₂). Heating to decomposition may lead to the release of toxic fumes of Chlorides and Cobalt Oxides.

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

LD50 Rat >2,000 mg/kg.

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:

IARC: Possibly carcinogenic to humans.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity:

Presumed human reproductive toxicant.

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Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

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

SECTION 12: Ecological information

Ecotoxicity:

Fish., LC50 - Cyprinus carpio (Carp) - 0.33 mg/l - 96.0 h.
Invertebrates, EC50 - Daphnia magna (Water flea) - 1.1 - 1.6 mg/l - 48 h.
Algae, EC50 - Chlorella vulgaris (Fresh water algae) - 0.5 mg/l - 96 h.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential:

Cobalt is expected to bioaccumulate in fish.

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.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA None

Limited Quantity Exception: None

Bulk:

RQ (if applicable): None

Proper shipping Name: None

Hazard Class: None

Packing Group: None

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: None

Hazard Class: None

Packing Group: None

Marine Pollutant (if applicable): No additional information.

Comments: None

SECTION 15: Regulatory information

United States (USA)

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

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

Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

None of the ingredients are listed.

SARA Section 313 (Specific toxic chemical listings):

7791-13-1 Cobalt(II) Chloride Hexahydrate.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) :

7791-13-1 Cobalt(II) Chloride Hexahydrate: not 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) :

7791-13-1 Cobalt(II) Chloride Hexahydrate: 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: 3-0-0

HMIS: 3-0-0

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).

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.28.2014

Cobalt Chloride, Hexahydrate, ACS Grade

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 : 12.05.2014

Sodium Chloride

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

Product name: Sodium Chloride

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: SC1010-650G

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:



Irritant

Eye irritation, category 2B

Eye Irritation 2.

Signal word: Warning

Hazard statements:

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.

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

Do not eat, drink or smoke when using this product.

Wash skin thoroughly after handling.

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

If eye irritation persists get medical advice/attention.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

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

Effective date : 12.05.2014

Sodium Chloride

Ingredients:

CAS 7647-14-5	Sodium Chloride, ACS	100 %
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. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.

After skin contact:

Wash affected area with soap and water. Wash affected area with soap and water. Rinse thoroughly. Seek medical attention if irritation persists or if concerned. Flush with water for 15 minutes. Rinse thoroughly. Seek medical attention if symptoms develop or persist.

After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned. Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Seek medical assistance. Dilute with water or milk.

Most important symptoms and effects, both acute and delayed:

Nausea. Headache. Shortness of breath. Irritation- all routes of exposure.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Note 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 sodium oxides or other toxic vapors. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Advice for firefighters:

Protective equipment:

Use NIOSH-approved breathing equipment.

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use non-sparking equipment/tools.

SECTION 6: Accidental release measures

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

Effective date : 12.05.2014

Sodium Chloride

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Avoid contact with skin and eyes. Always obey local regulations. Avoid contact skin, eyes, and clothing. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. 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. Should not be released into the environment.

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. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air. Always obey local regulations.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Follow good hygiene procedures when handling chemical materials. Protect from freezing and physical damage. Keep away from sources of ignition. Store protected from moisture and direct sunlight. Wash hands after handling. 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 generation of dust or fine particulate. Avoid dispersal of dust in the air. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. 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. Keep away from sources of ignition. Store protected from moisture and direct sunlight.

SECTION 8: Exposure controls/personal protection



Control parameters:

7647-14-5, ACGIH TLV TWA (inhalable particles), 10 mg/m³.
7647-14-5, OSHA PEL TWA (Total Dust), 15 mg/m³ (50 mppcf*).
, , *mppcf = Millions of particles per cubic foot of air.

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. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

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Effective date : 12.05.2014

Sodium Chloride

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. Wear protective clothing.
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):	White solid	Explosion limit lower:	Not determined
		Explosion limit upper:	Not determined
Odor:	Odorless	Vapor pressure at 20°C:	1 mmHg @ 865°C
Odor threshold:	Not determined	Vapor density:	>1
pH-value:	Not determined	Relative density:	Not determined
Melting/Freezing point:	801°C	Solubilities:	Soluble in water.
Boiling point/Boiling range:	1461°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		
Specific Gravity	2.165		
Molecular Weight:	58.44 g/mol		

SECTION 10: Stability and reactivity

Reactivity:

Material is hygroscopic.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases. Incompatible materials, dust generation, combustible materials, exposure to moist air or water. Excess heat.

Incompatible materials:

Metals. Strong oxidizers. Strong acids. Strong bases. Incompatible materials, dust generation, combustible

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Effective date : 12.05.2014

Sodium Chloride

materials, exposure to moist air or water.

Hazardous decomposition products:

May evolve chlorine gas when in contact with strong acids. Sodium/sodium oxides. Hydrogen chloride gas.

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

LD50 dermal-rabbit (7647-14-5) > 10gm/kg.

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:

Fish (acute 7647-14-5), 96 Hr LC50 *Lepomis macrochirus*: 5560 - 6080 mg/L [flow-through]; 96 Hr LC50 *Lepomis macrochirus*: 12946 mg/L [static]; 96 Hr LC50 *Pimephales promelas*: 6020 - 7070 mg/L [static]; 96 Hr LC50 *Pimephales promelas*: 7050 mg/L [semi-static]; 96 Hr LC50 *Pimephales promelas*: 6420 - 6700 mg/L [static]; 96 Hr LC50 *Oncorhynchus mykiss*: 4747 - 7824 mg/L [flow-through].

Crustacea (acute 7647-14-5): , 48 Hr EC50 *Daphnia magna*: 1000 mg/L; 48 Hr EC50 *Daphnia magna*: 340.7 - 469.2 mg/L [Static].

Persistence and degradability:

Can attenuate over time. Large amounts can persist in the environment.

Bioaccumulative potential: No additional information.

Mobility in soil:

Soluble in water; thus mobile along soil/water interface.

Other adverse effects:

Should not be released into environment.

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.

SECTION 14: Transport information

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

Effective date : 12.05.2014

Sodium Chloride

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):

Acute

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

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

Effective date : 12.05.2014

Sodium Chloride

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: 1-0-1

HMIS: 1-0-1

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).

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

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

Product name: Methyl Red Indicator Solution, 0.1% w/v

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: MR6200-4ML

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:



Flammable

Flammable liquids, category 3

Flammable Liquids Cat. 3.

Signal word: Warning

Hazard statements:

Flammable liquid and vapour.

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 away from heat/sparks/open flames/hot surfaces. No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Keep container tightly closed.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire, use agents recommended in section 5 for extinction.
Store in a well ventilated place. Keep cool.
Dispose of contents and container to an approved waste disposal plant.

Other Non-GHS Classification: None

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 64-17-5	Ethanol	47.34 %
CAS 7732-18-5	Water	52.56 %
CAS 845-10-3	Methyl Red, Sodium Salt	0.1 %
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. If breathing is difficult give oxygen. Seek medical attention if cough or respiratory irritation develops.

After skin contact:

Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Seek medical attention if irritation persists or if concerned.

After eye contact:

Protect unexposed eye. Remove contact lens(es) if able to do so during rinsing. Rinse or flush exposed eye gently using water for 15-20 minutes. Consult a physician if irritation persists.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Dilute mouth with water or milk after rinsing. Immediately get medical assistance.

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. 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. Water spray can keep containers cool.

Unsuitable extinguishing agents:

Water may be ineffective on fire.

Special hazards arising from the substance or mixture:

Vapors are heavier than air. Be aware of vapor accumulating in low-lying areas. Flashback may occur along vapor trail. Remove sources of ignition.

Advice for firefighters:

Protective equipment:

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

Additional information (precautions):

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation.

Environmental precautions:

Prevent from reaching drains, sewer or waterway.

Methods and material for containment and cleaning up:

Refer to Section 8. Wear protective eyewear, gloves, and clothing. Absorb with suitable material and place in chemical waste container. Ventilate area of spill. Dispose of empty containers as unused product. Refer to Section 13.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Wear protective eyewear, gloves, and clothing. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes, and clothing. Refer to Section 8.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Keep container tightly closed. Store with like hazards. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection



Control parameters:

64-17-5, Ethanol, ACGIH TLV: 1880mg/m³.
64-17-5, Ethanol, OSHA PEL: 1900mg/m³.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide adequate ventilation to ensure the Lower Explosive Limit (LEL) is not reached or Occupational Exposure Level (OEL) is reached. Ensure equipment is approved for use with flammable liquids.

Respiratory protection:

Use suitable respiratory protective device when high concentrations are present. If exposure limit is exceeded, a full-face respirator with organic cartridge may be worn.

Protection of skin:

Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Wear protective clothing.

Eye protection:

Safety glasses with side shields or goggles.

General hygienic measures:

Wash hands before breaks and at the end of work. Before wearing wash contaminated clothing. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):

Clear red liquid

Explosion limit lower:
Explosion limit upper:

Not determined
Not determined

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

Odor:	Alcohol	Vapor pressure at 20°C:	Not determined
Odor threshold:	Not determined	Vapor density:	Not determined
pH-value:	Not determined	Relative density:	Not determined
Melting/Freezing point:	Not determined	Solubilities:	Not Determined
Boiling point/Boiling range:	Not determined	Partition coefficient (n-octanol/water):	Not determined
Flash point (closed cup):	~24C	Auto/Self-ignition temperature:	Not determined
Evaporation rate:	Not determined	Decomposition temperature:	Not determined
Flammability (solid, gaseous):	Flammable	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		

SECTION 10: Stability and reactivity

Reactivity: None

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None known.

Conditions to avoid:

Incompatible materials. Heat, hot surfaces, open flames, and sources of ignition.

Incompatible materials:

Strong oxidizers, acids, and bases. Acetyl chloride, acetyl bromide, concentrated sulfuric acid and strong hydrogen peroxide.

Hazardous decomposition products:

Carbon oxides (CO, CO₂). Acrid and irritating fumes.

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

64-17-5 Ethanol LD-50 15800 mg/kg (rabbit).

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

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

Ecotoxicity:

Aquatic Tox., Ethanol has a slight acute and chronic toxicity to aquatic life.

Persistence and degradability: No additional information.

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:

It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Absorb with suitable absorbent material such as sand or earth and containerize for disposal. Ventilate area of leak or spill. Have fire extinguishing agent available in case of fire. Eliminate all sources of ignition. Use spark-proof tools and explosion-proof equipment. 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

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA

UN1170

Limited Quantity Exception:

None

Bulk:

RQ (if applicable): None

Proper shipping Name: Ethanol Solution.

Hazard Class: 3

Packing Group: III.

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: Ethanol Solution.

Hazard Class: 3

Packing Group: III.

Marine Pollutant (if applicable): No additional information.

Comments: None



SECTION 15: Regulatory information

United States (USA)

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

Fire

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

RCRA (hazardous waste code):

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

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:

64-17-5 Ethanol.

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.

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

Effective date : 01.06.2015

Methyl Red Indicator Solution, 0.1% w/v

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

Bromthymol Blue Indicator Solution, 0.04% w/v

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

Product name: Bromthymol Blue Indicator Solution, 0.04% w/v

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: BB5025-4ML

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: 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 34722-90-2	Bromothymol Blue, Sodium Salt	0.04 %
CAS 7732-18-5	Deionized Water	99.96 %
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

Bromthymol Blue Indicator Solution, 0.04% w/v

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:

Prevent formation of aerosols. Follow good hygiene procedures when handling chemical materials. Do not eat,

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

Effective date : 10.24.2014

Bromthymol Blue Indicator Solution, 0.04% w/v

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):	Dark green liquid	Explosion limit lower:	0 Vol %
		Explosion limit upper:	0 Vol %
Odor:	Odorless	Vapor pressure at 20°C:	Not determined
Odor threshold:	Not determined	Vapor density:	14mmHg @ 20C
pH-value:	Not determined	Relative density:	1
Melting/Freezing point:	0 °C (32 °F)	Solubilities:	Soluble in Water
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

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

Effective date : 10.24.2014

Bromthymol Blue Indicator Solution, 0.04% w/v

Flammability (solid, gaseous):	Not applicable	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:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

No information available.

Incompatible materials:

None identified.

Hazardous decomposition products:

Carbon oxides (CO, CO₂).

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: 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

Bromthymol Blue Indicator Solution, 0.04% w/v

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):

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:

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

Effective date : 10.24.2014

Bromthymol Blue Indicator Solution, 0.04% w/v

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.
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 Nitrate,ACS,25g

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

Product name: Sodium Nitrate,ACS,25g

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: SN4000-25G

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:



Oxidizing
Oxidizing solids, category 2



Irritant
Eye irritation, category 2A

Signal word: Danger

Hazard statements:

May intensify fire; oxidizer.
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 away from heat/sparks/open flames/hot surfaces. No smoking.
Keep wetted with
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.
In case of fire: Use ... for extinction.
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.

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

Effective date : 12.14.2014

Sodium Nitrate,ACS,25g

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7631-99-4	Sodium Nitrate	>95 %
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. If breathing difficult, give oxygen. Remove to fresh air. Give artificial respiration if necessary. Seek immediate medical attention or advice.

After skin contact:

Rinse area with water for 10-15 minutes. Seek immediate medical attention or advice.

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. Seek immediate medical attention or advice.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Seek immediate medical attention or advice. Have exposed individual drink sips of water or milk.

Most important symptoms and effects, both acute and delayed:

Nausea. Headache. Shortness of breath. Redness, tearing. Pain. Irritation, all routes of exposure. Prolonged exposure can lead to methemoglobinemia.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician. Note 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. Thermal decomposition can lead to release of irritating gases and vapors. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Advice for firefighters:

Protective equipment:

Use NIOSH-approved respiratory protection/breathing apparatus.

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

Effective date : 12.14.2014

Sodium Nitrate,ACS,25g

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use spark-proof tools and explosion-proof equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Transfer to a disposal or recovery container. Avoid contact with skin and eyes, and clothing. Use spark-proof tools and explosion-proof 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.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Do not allow this material to enter the environment.

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. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air. Clean up spills immediately, observing precautions in Section 8. Always obey local regulations.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Minimize dust generation and accumulation. Wash hands after handling. Avoid dispersal of dust in the air. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. 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 generation of dust or fine particulate. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Avoid storage on wood floors. Provide ventilation for containers. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly closed. Store away from combustible materials. Protect from freezing and physical damage. Keep away from sources of ignition. Store protected from moisture and direct sunlight.

SECTION 8: Exposure controls/personal protection



Control parameters:

No applicable occupational exposure limits.

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

Effective date : 12.14.2014

Sodium Nitrate, ACS, 25g

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. Use under a fume hood. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).
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):	White solid	Explosion limit lower:	Not determined
Odor:	Odorless	Explosion limit upper:	Not determined
Odor threshold:	Not determined	Vapor pressure at 20°C:	Not determined
pH-value:	5.5 - 8 5% aq. solution	Vapor density:	Not determined
Melting/Freezing point:	306 C / 582.8 F	Relative density:	Not determined
Boiling point/Boiling range:	380 C / 716 F	Solubilities:	Soluble in water.
Flash point (closed cup):	Not determined	Partition coefficient (n-octanol/water):	Not determined
Evaporation rate:	Not determined	Auto/Self-ignition temperature:	Not determined
Flammability (solid, gaseous):	Not determined	Decomposition temperature:	380 C
Density at 20°C:	Not determined	Viscosity:	a. Kinematic: Not determined b. Dynamic: Not determined
Specific Gravity	2.2600 g/cm ³		

SECTION 10: Stability and reactivity

Reactivity:

Oxidizer. Contact with combustible/organic material may cause fire.

Chemical stability:

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

Effective date : 12.14.2014

Sodium Nitrate,ACS,25g

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

This material is an oxidizer; it greatly increases the burning rate of combustible materials. Reacts with acids to emit toxic nitrogen dioxide fumes. Contact with incompatibles may cause an explosion.

Conditions to avoid:

Combustible materials. Incompatible materials. Dust generation. Excess heat. Exposure to moist air or water.

Incompatible materials:

Strong acids. Fibrous organic material (jute, wood, paper, etc.) can become highly combustible by nitrate impregnation. Reducing agents, finely powdered metals, combustible materials, easily oxidizing materials, organic materials. Reacts with acids to emit toxic nitrogen dioxide fumes. Strong bases. Boron phosphide. Cyanides. Barium rhodanide. Sodium thiosulfate. Sodium hypophosphite. Sulfur plus charcoal. Powdered aluminum and aluminum oxide.

Hazardous decomposition products:

Carbon oxides (CO, CO₂). Nitrogen oxides (NO_x). sodium 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:

Classified as an eye irritant. Section 2.

Respiratory or skin sensitization: No additional information.

Carcinogenicity:

May cause cancer. : Tumorigenic effects have been reported in experimental animals.

Germ cell mutagenicity: No additional information.

Reproductive Toxicity:

Experiments have shown reproductive toxicity effects on laboratory animals.

STOT-single and repeated exposure:

May cause adverse kidney and liver effects.

May cause central nervous system depression.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Fish: LC50 (96h) L. macrochius, 2000 mg/L.

Fish: LC50 (96h) O. mykiss , 994.4-1107 mg/L.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential: No additional information.

Mobility in soil: No additional information.

Other adverse effects: No additional information.

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

Effective date : 12.14.2014

Sodium Nitrate,ACS,25g

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). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Dilute with water and flush to sewer if regulations allow.

SECTION 14: Transport information

US DOT

UN Number:

ADR, ADN, DOT, IMDG, IATA

1498

Limited Quantity Exception:

None

Bulk:

RQ (if applicable): None

Proper shipping Name: Sodium Nitrate.

Hazard Class: 5

Packing Group: III.

Marine Pollutant (if applicable): No additional information.

Comments: None

Non Bulk:

RQ (if applicable): None

Proper shipping Name: Sodium Nitrate.

Hazard Class: 5

Packing Group: III.

Marine Pollutant (if applicable): No additional information.

Comments: None



SECTION 15: Regulatory information

United States (USA)

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

Reactive,Acute

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:

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

Effective date : 12.14.2014

Sodium Nitrate,ACS,25g

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: 2-0-3

HMIS: 2-0-3

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).