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

Effective date : 12.16.2014

Lugol's Solution

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

Product name: Lugol's Solution

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMIO2821-A

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:

Irritant
Skin irritation, category 2
Eye irritation, category 2A

Skin Irritation, Category 2.
Eye Irritation, Category 2.

Signal word: Warning

Hazard statements:

Causes serious eye irritation.
Causes skin 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.
Wash skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with soap and water.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
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.

Other Non-GHS Classification: None

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Lugol's Solution

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7681-11-0	Potassium Iodide	3 %
CAS 7732-18-5	Deionized Water	95.5 %
CAS 7553-56-2	Iodine	1.5 %
		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:

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

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. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

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.

Advice for firefighters:

Protective equipment:

Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions):

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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.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Small quantities may be flushed to drains with plenty of water.

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:

Wash hands after handling. Follow good hygiene procedures when handling chemical materials. Use only in well ventilated areas. Avoid contact with eyes, skin, and clothing.

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. Keep container tightly closed. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection

Control parameters:	7681-11-0, Potassium Iodide, ACS, ACGIH NIOSH 0.01 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 fume hood.
Respiratory protection:	Use suitable respiratory protective device when high concentrations are present. For spills, respiratory protection may be advisable. Normal ventilation is adequate.
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. 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.

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Lugol's Solution

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Dark brown liquid	**Explosion limit lower**: **Explosion limit upper**:	Not determined Not determined
Odor:	Weak iodine odor	**Vapor pressure at 20°C**:	Not determined
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: 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:

exposure to light. Incompatible Materials.

Incompatible materials:

Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products:

Hydrogen iodide. Iodine gas. May include oxides of iodine.

SECTION 11: Toxicological information

Acute Toxicity: No additional information.
Chronic Toxicity: No additional information.
Skin corrosion/irritation:

Rabbit: causes irritation. 7681-11-0.

Serious eye damage/irritation:

Rabbit: causes irritation. 7681-11-0.

Respiratory or skin sensitization: No additional information.
Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.

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Lugol's Solution

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

SECTION 12: Ecological information

Ecotoxicity:

Crustacea LC50 Zebra mussel (Dreissena polymorpha) 220 - 313 mg/l, 24 hours, 7681-11-0.
Fish LC50 - Oncorhynchus mykiss (rainbow trout) - 2,190 mg/l - 96 h, 7681-11-0.

Persistence and degradability: No additional information.
Bioaccumulative potential:

Not expected to bio accumulate.

Mobility in soil: No additional information.
Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. 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. Small amounts may be flushed with water to sewer. Larger volumes must be sent to approve plant for destruction.

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):

Acute

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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: 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).

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Lugol's Solution

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 Hypochlorite,3-6%

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

Product name: Sodium Hypochlorite,3-6%

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMSH8000-A

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

Irritant
Skin irritation, category 2

Eye corr. 1.
Skin Irrit. 2.
Aquatic Acute 2.
Aquatic Chronic 3.
Metal Corr. 1.

Signal word: Danger

Hazard statements:

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

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Sodium Hypochlorite,3-6%

Wear protective gloves/protective clothing/eye protection/face protection.
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.
IF ON SKIN: Wash with soap and water.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Collect spillage.
Absorb spillage to prevent material damage.
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 7681-52-9	Sodium Hypochlorite	3-6 %
CAS 7732-18-5	Deionized Water	94-97 %
		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

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Sodium Hypochlorite,3-6%

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.

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: No applicable occupational exposure limits.

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Sodium Hypochlorite,3-6%

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.

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.

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 light yellow green liquid	**Explosion limit lower**: **Explosion limit upper**:	Non Explosive Non Explosive
Odor:	Chlorine-like	**Vapor pressure at 20°C**:	14mmHg @ 20C
Odor threshold:	Not determined	**Vapor density**:	>1
pH-value:	Not determined	**Relative density**:	Approx 1
Melting/Freezing point:	Approx 0°C	**Solubilities**:	Soluble in Water
Boiling point/Boiling range:	Decomposes	**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:

Nonreactive under normal conditions.

Chemical stability:

Decomposes slowly at normal temperatures releasing low concentrations of corrosive chlorine gas. Decomposition is influenced by temperature, pH, exposure to light, concentration, ionic strength, and presence of metals.

Possible hazardous reactions:

None under normal processing.

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Sodium Hypochlorite,3-6%

Conditions to avoid:

Incompatible materials, excess heat. light. Combustible materials. Excess heat.

Incompatible materials:

Metals, ammonia, strong reducing agents, methanol, strong acids, formic acid, amines, phenyl acetonitrile, ammonium salts.

Hazardous decomposition products:

sodium oxides, hydrogen.

SECTION 11: Toxicological information

Acute Toxicity: None
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:

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:

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.

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Sodium Hypochlorite,3-6%

SECTION 14: Transport information

US DOT

UN Number:
ADR, ADN, DOT, IMDG, IATA 1791

Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: Hypochlorite Solutions.
Hazard Class: 8
Packing Group: III.
Marine Pollutant (if applicable): No additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Hypochlorite Solutions.
Hazard Class: 8
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):

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):

7681-52-9 Sodium Hypochlorite 100 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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Effective date : 12.14.2014

Sodium Hypochlorite,3-6%

Canada

Canadian Domestic Substances List (DSL) :

All ingredients are listed.

SECTION 16: Other information

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

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

Abbreviations and Acronyms:

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

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide, 0.5N

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

Product name: Sodium Hydroxide, 0.5N

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMSH6232-A

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

Skin Corr. 1B.
Eye corr. 1.
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.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Absorb spillage to prevent material damage.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

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Sodium Hydroxide, 0.5N

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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.
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	2 %
CAS 7732-18-5	Deionized Water	98 %
		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. Give artificial respiration if necessary.

After skin contact:

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

After eye contact:

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

After swallowing:

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

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath.

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

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

Unsuitable extinguishing agents: None

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide, 0.5N

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:

Protect from freezing and physical damage. Protect from freezing and physical damage. 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.

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Effective date : 12.14.2014

Sodium Hydroxide, 0.5N

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

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

Eye protection: Safety glasses with side shields or goggles.

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

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	**Explosion limit lower**: **Explosion limit upper**:	Non Explosive Non Explosive
Odor:	Odorless	**Vapor pressure at 20°C**:	14mmHg @ 20C
Odor threshold:	Not determined	**Vapor density**:	>1
pH-value:	Alkaline	**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: None

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. Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 12.14.2014

Sodium Hydroxide, 0.5N

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:

Toxicity to aquatic life, Sodium hydroxide has high acute and chronic toxicity to aquatic life, influenced by hardness and alkalinity of the receiving water. Do not empty into drains.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential:

Not expected to bio accumulate.

Mobility in soil: No additional information.
Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product. Neutralize with dilute acid solutions.

SECTION 14: Transport information

US DOT

UN Number:
ADR, ADN, DOT, IMDG, IATA 1824

Limited Quantity Exception: None

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

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.

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

Effective date : 12.14.2014

Sodium Hydroxide, 0.5N

Comments: None

Comments: None

SECTION 15: Regulatory information

United States (USA)

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

None of the ingredients are listed.

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) :

All ingredients are listed.

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

1310-73-2 Sodium Hydroxide 1000 lb.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL) :

All ingredients are listed.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety 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

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Effective date : 12.14.2014

Sodium Hydroxide, 0.5N

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 : 09.16.2014

Phenolphthalein Indicator Solution,

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

Product name: Phenolphthalein Indicator Solution,

Manufacturer/Supplier Trade name: Phenolphthalein Indicator

Manufacturer/Supplier Article number: KEMPH1605-A

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:

Flammable

Irritant

Health hazard

Acute toxicity (inhalation), category 4
Flammable liquids, category 3

Eye irritation, category 2A
Specific target organ toxicity - single exposure, category 1
Specific target organ toxicity - single exposure, category 3, central nervous system
Acute toxicity (oral), category 4
Acute toxicity (dermal), category 4

Signal word: Danger

Hazard statements:

Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Causes serious eye irritation.
Causes damage to organs.
May cause drowsiness or dizziness.

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

Effective date : 09.16.2014

Phenolphthalein Indicator Solution,

Precautionary statements:

Wear protective gloves/protective clothing/eye protection/face protection.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/fume/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wash skin thoroughly after handling.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/equipment.
If exposed: Call a poison center or doctor/physician.
Wash contaminated clothing before reuse.
If on skin (or hair): Immediately remove/take off all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use agents recommended in section 5 for extinction.
If swallowed: Call a poison center or doctor/physician if you feel unwell.
Rinse mouth.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Specific treatment (see supplemental first aid instructions on this label).
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.
Store in a well ventilated place. Keep container tightly closed.
Store in a well ventilated place. Keep cool.
Store locked up.
Dispose of contents and container as instructed in Section 13.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 67-56-1	Methanol	12.5 %
CAS 64-17-5	Ethanol	12.5 %
CAS 67-63-0	Isopropanol	25 %
CAS 77-09-8	Phenolphthalein	0.5 %
CAS 7732-18-5	Water (DI)	50 %
		Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Take affected persons out into the fresh air. Seek immediate medical advice. Provide oxygen treatment if affected person has difficulty breathing. In case of irregular breathing or respiratory arrest provide artificial

respiration.

After skin contact:

Immediately remove any clothing soiled by the product. Flush with water for 15 minutes. Seek immediate medical attention or advice.

After eye contact:

Protect unharmed eye. Flush with water for 15 minutes. Seek immediate medical attention or advice.

After swallowing:

Do not induce vomiting; call for medical help immediately. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident. Have exposed individual drink sips of water or milk.

Most important symptoms and effects, both acute and delayed:

Headache. Acidosis. Disorientation. Unconsciousness. Coughing. Breathing difficulty. Dizziness. Gastric or intestinal disorders when ingested. Nausea in case of ingestion. Slight irritant effect on skin and mucous membranes. Irritant to eyes. Blindness.

Indication of any immediate medical attention and special treatment needed:

Contains methanol. Consult literature for specific antidotes. Medical supervision for at least 48 hours. Monitor circulation, possible shock treatment. If necessary oxygen respiration treatment. Note to physician: Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

CO_2, powder or water spray. Fight larger fires with water spray.

Unsuitable extinguishing agents:

None.

Special hazards arising from the substance or mixture:

Formation of toxic gases is possible during heating or in case of fire.

Advice for firefighters:

Protective equipment:

Wear self-contained respiratory protective device. Wear fully protective suit.

Additional information (precautions):

Eliminate all ignition sources if safe to do so. Use large quantities of foam as it is partially destroyed by the product.

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. Avoid contact with skin and eyes, and clothing.

Environmental precautions:

Do not allow to enter sewers. Do not allow to enter surface or ground water. Inform respective authorities in case of seepage into water course or sewage system.

Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders). Send for recovery or disposal in suitable receptacles. Dispose contaminated material as waste according to section 13.

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Effective date : 09.16.2014

Phenolphthalein Indicator Solution,

Used rags or other cleaning materials should be soaked with water and placed in a sealed container. Clean up spills immediately, observing precautions in Section 8. Always obey local regulations. Wash hands after handling. Avoid contact with skin and eyes.

Reference to other sections:

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Avoid splashes or spray in enclosed areas. Use only in well ventilated areas. Rags, metal wools / cuttings / shavings and waste papers soaked with product must be placed in a sealed metal container rated for flammable waste. Keep ignition sources away - Do not smoke. Flammable gas-air mixtures may form in empty receptacles. Protect against electrostatic charges. Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for receptacles. 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 receptacles. Keep container tightly sealed. Store away from combustible materials. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection



Control parameters:

67-63-0, :Isopropanol, ACGIH TLV: 983mg/m3.
67-63-0, :Isopropanol, OSHA PEL: 980mg/m3.
64-17-5, Ethanol, OSHA PEL: 1900mg/m3.
64-17-5, Ethanol, ACGIH TLV: 1880mg/m3.
67-56-1, Methanol, OSHA PEL: 200ppm.
67-56-1, Methanol., ACGIH TLV: 200ppm.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated above. All electrical equipment should comply with the National Electric Code. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Take precautionary measures against static discharges. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases/vapors may be released.

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. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Eye protection:

Safety glasses.

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Phenolphthalein Indicator Solution,

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

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Slight pink liquid	**Explosion limit lower**: **Explosion limit upper**:	Product does not present Explosion hazard Not determined
Odor:	Mild alcohol	**Vapor pressure at 20°C**:	33mmHg @ 20C
Odor threshold:	Not determined	**Vapor density**:	2.1
pH-value:	Slightly Acidic	**Relative density**:	Not determined
Melting/Freezing point:	- 88C	**Solubilities**:	Soluble in water
Boiling point/Boiling range:	Approx 82C	**Partition coefficient (n-octanol/water)**:	Not determined
Flash point (closed cup):	Not determined	**Auto/Self-ignition temperature**:	Product is not self-igniting
Evaporation rate:	2.88	**Decomposition temperature**:	Not determined
Flammability (solid, gaseous):	Not determined	**Viscosity**:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	slightly heavier than water		

SECTION 10: Stability and reactivity

Reactivity:

Not determined.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

Flammable. Toxic fumes may be released if heated above the decomposition point. Reacts violently with oxidizing agents.

Conditions to avoid:

Keep ignition sources away - Do not smoke. Store away from oxidizing agents. Excess heat.

Incompatible materials:

Strong acids. Strong bases. Oxidizers, aldehydes, heat, sparks, open flame, metallic oxides.

Hazardous decomposition products:

Carbon oxides (CO, CO2). Acrid and irritating fumes, including toxic oxides of carbon will heat to combustion.

SECTION 11: Toxicological information

Acute Toxicity:

ATE: 50ppm.

Oral:

LD50 rat: 5840 mg/kg (Isopropanol).

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Phenolphthalein Indicator Solution,

Inhalation:

LC50 rat 83.2 mg/L (Methanol).

Chronic Toxicity:

Oral:

No testing available.

Dermal:

No testing available.

Inhalation:

No testing available.

Skin corrosion/irritation:

No testing available.

Serious eye damage/irritation:

No testing available.

Respiratory or skin sensitization:

Not classified

Carcinogenicity: No additional information.

Germ cell mutagenicity: No additional information.
Reproductive Toxicity: No additional information.
STOT-single and repeated exposure:

Not classified

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Toxicity to fish , Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 31 mg/l - 96 h.

Persistence and degradability:

biodegradable.

Bioaccumulative potential:

No further relevant information available.

Mobility in soil:

No further relevant information available.

Other adverse effects:

No further relevant information available.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach

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Effective date : 09.16.2014

Phenolphthalein Indicator Solution,

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. Handle empty containers with care because residual vapors are flammable. Avoid release to the environment. Absorb and containerize for disposal.

SECTION 14: Transport information

US DOT

UN Number:
ADR, ADN, DOT, IMDG, IATA — UN1993

Limited Quantity Exception: — 9 CFR 173.150 - Exceptions for Class 3 (flammable and combustible liquids).

Bulk:
RQ (if applicable): None
Proper shipping Name: Flammable Liquids, N.O.S., (Methanol, Ethanol, Isopropanol), 3.
Hazard Class: 3
Packing Group: II.
Marine Pollutant (if applicable): No additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Flammable Liquids, N.O.S., (Methanol, Ethanol, Isopropanol), 3.
Hazard Class: 3
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,Chronic,Fire

SARA Section 313 (Specific toxic chemical listings):

67-56-1 Methanol.

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:

77-09-8 Phenolphthalein.

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 09.16.2014

Phenolphthalein Indicator Solution,

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.
67-56-1 Methanol.

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. 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.of this material.

NFPA: 1-2-0
HMIS: 1-2-0
GHS Full Text Phrases:
Acute Tox. 4 (Oral) Acute toxicity (oral) Category 4.
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
Carc. 1B Carcinogenicity Category 1B.
Eye Irrit. 2A Serious eye damage/eye irritation Category 2A.
Eye Irrit. 2B Serious eye damage/eye irritation Category 2B.
Flam. Liq. 3 Flammable liquids Category 3.
Muta. 2 Germ cell mutagenicity Category 2.
Repr. 2 Reproductive toxicity Category 2.
Skin Irrit. 2 skin corrosion/irritation Category 2.
STOT SE 3 Specific target organ toxicity (single exposure) Category 3.

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
DNEL Derived No-Effect Level (REACH).

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Effective date : 09.16.2014

Phenolphthalein Indicator Solution,

PNEC Predicted No-Effect Concentration (REACH).
DOT US Department of Transportation.
IATA International Air Transportation 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).

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

Effective date : 02.25.2015

Potassium Ferrocyanide 0.05M

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

Product name: Potassium Ferrocyanide 0.05M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMPF4177-A

Recommended uses of the product and restrictions on use:

Manufacturer Details:

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

Supplier Details:

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

Emergency telephone number:

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

SECTION 2: Hazards identification

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

Signal word: None

Hazard statements: None

Precautionary statements:

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

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7732-18-5	Deionized Water	>97.888 %
CAS 14459-95-1	Potassium Ferrocyanide, ACS	<2.112 %
		Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.25.2015

Potassium Ferrocyanide 0.05M

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.

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 medical attention if irritation persists or concerned.

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.

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.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment:

Wear protective eyeware, 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.

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 eyeware, 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. 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

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

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Potassium Ferrocyanide 0.05M

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.

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 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, yellow-green liquid	**Explosion limit lower**: **Explosion limit upper**:	Not determined Not determined
Odor:	Odorless	**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:	Approximately 0°C	**Solubilities**:	Soluble.
Boiling point/Boiling range:	Approximately 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

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Flammability (solid, gaseous):	Not determined	**Viscosity**:	a. Kinematic: Not determined b. Dynamic: Not determined
Density at 20°C:	Not determined		

SECTION 10: Stability and reactivity

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Incompatible materials.

Incompatible materials:

Acids, sodium nitrate, chromium trioxide, cupric nitrate, bromine trifluoride, ammonia, chromic anhydride.

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: 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:

13746-66-2, LC50 - Oncorhynchus mykiss (rainbow trout) - 869 mg/l - 96 h.
13746-66-2, EC50 - Daphnia magna (Water flea) - 549 mg/l - 48 h.

Persistence and degradability: No additional information.
Bioaccumulative potential: No additional information.
Mobility in soil: No additional information.
Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Contact a licensed professional waste disposal service to dispose of this material. Dispose of empty containers as unused product. Product or containers must not be disposed together with household garbage. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable

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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:
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:

None of the ingredients are listed.

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Potassium Ferrocyanide 0.05M

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: None

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Effective date : 01.07.2015

Ferric Sulfate 0.1M

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

Product name: Ferric Sulfate 0.1M

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMFS7151-A

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
Acute toxicity (oral, dermal, inhalation), category 4
Skin irritation, category 2
Eye irritation, category 2A

Acute Tox. 4.
Skin Irrit. 2.
Eye Irrit. 2A.
Corr. Metals.

Signal word: Warning

Hazard statements:

May be corrosive to metals.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.

Precautionary statements:

If medical advice is needed have product container or label at hand.
Keep out of reach of children.
Read label before use.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.

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Ferric Sulfate 0.1M

IF ON SKIN: Wash with soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Dispose of contents/container.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 7720-78-7	Ferric sulfate	<4.9 %
CAS 7732-18-5	Deionized Water	<95.1 %
		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 difficult, give oxygen. Get medical attention.

After skin contact:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Wash affected area with soap and water. Rinse/flush exposed skin gently using water for 15-20 minutes. Get medical attention.

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 immediate medical attention or advice.

After swallowing:

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

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 spray, dry chemical, carbon dioxide, or chemical foam.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

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Thermal decomposition can lead to release of irritating gases and vapors. Contact with most metals generates flammable and explosive hydrogen gas.

Advice for firefighters:

Protective equipment:

Wear protective eyeware, 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:

Use spark-proof tools and explosion-proof equipment. Ensure adequate ventilation. Ensure that air-handling systems are operational.

Environmental precautions:

Should not be released into the environment.

Methods and material for containment and cleaning up:

Cover the spill with Sodium Carbonate or a soda ash - slaked lime mixture. Absorb with suitable material and containerize for disposal. Wear protective eyeware, 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. 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 away from incompatible materials. Avoid storage near extreme heat, ignition sources or open flame. Store in a cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly closed.

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 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.

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Ferric Sulfate 0.1M

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: Safety glasses with side shields or goggles. Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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 to light green	**Explosion limit lower**: **Explosion limit upper**:	Not determined Not determined
Odor:	Odorless	**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:	Approximately 0°C	**Solubilities**:	None
Boiling point/Boiling range:	Approximately 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		
Ferrous Sulfate	Molecular Weight: 278.01		

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:

Incompatible materials. Excess heat. Dust generation.

Incompatible materials:

Strong bases, strong oxidizing agents, organics, chlorates, carbides, reducing agents, nitrates, fulminates. Contact with water will generate heat.

Hazardous decomposition products:

Iron oxides.

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Ferric Sulfate 0.1M

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: No additional information.
Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Treat solid residue as normal refuse, unless prohibited due to iron content in the substance. 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. Absorb with suitable material and containerize for disposal.

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

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

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Ferric Sulfate 0.1M

additional information.
Comments: None

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):

7782-63-0 Ferrous Sulfate.

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):

7720-78-7 Ferric Sulfate 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) :

7782-63-0 Not listed.: not listed.

SECTION 16: Other information

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

NFPA: 2-0-0
HMIS: 2-0-0

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Ferric Sulfate 0.1M

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).

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Effective date : 01.06.2015

Fluorescent Ink

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

Product name: Fluorescent Ink

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMFL2200-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:

Flammable
Flammable liquids, category 2

Flammable Liquids Cat. 2.

Signal word: Danger

Hazard statements:

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

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Fluorescent Ink

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 64-17-5	Ethanol	99.18 %
CAS 92-70-6	3-Hydroxy-2-naphthoic Acid	0.63 %
CAS 1310-73-2	Sodium Hydroxide	0.19 %
		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:

Flashback along vapor trail may occur. Vapors are heavier than air. Be aware of vapor accumulating in low-lying areas. Remove sources of ignition. Vapor may explode if ignited in an enclosed area.

Advice for firefighters:

Protective equipment:

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

Additional information (precautions):

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Fluorescent Ink

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 eyeware, 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 eyeware, 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. Keep away from heat and sources of ignition. Provide ventilation for containers. Keep container tightly closed. Store with like hazards.

SECTION 8: Exposure controls/personal protection




Control parameters:	64-17-5, Ethanol, ACGIH TLV: 1880mg/m3. 64-17-5, Ethanol, OSHA PEL: 1900mg/m3. 1310-73-2, Sodium Hydroxide, ACGIH TLV TWA 2mg/m3. 1310-73-2, Sodium Hydroxide, OSHA PEL TWA 2mg/m3.
Appropriate engineering controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Ensure adequate ventilation to ensure the Lower Explosive Limit (LEL) and Occupational Exposure Limits (OEL) are not reached.
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. Perform routine housekeeping to prevent dust generation. 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

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Fluorescent Ink

Appearance (physical state, color):	Clear, slightly yellow liquid	**Explosion limit lower**: **Explosion limit upper**:	3.3 18.0
Odor:	Alcohol	**Vapor pressure at 20°C**:	48 mm Hg
Odor threshold:	Not determined	**Vapor density**:	Not determined
pH-value:	Not determined	**Relative density**:	Approx. 0.8
Melting/Freezing point:	- 90C	**Solubilities**:	Infinite solubility.
Boiling point/Boiling range:	77C	**Partition coefficient (n-octanol/water)**:	Not determined
Flash point (closed cup):	15.5C	**Auto/Self-ignition temperature**:	362.8C
Evaporation rate:	3.6	**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:

Flammable vapor may form explosive mixtures with air.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None known. None under normal processing.

Conditions to avoid:

Incompatible materials. Excess heat and ignition sources. No smoking. Avoid accumulation of static charge.

Incompatible materials:

Strong oxidizers, heat, sparks, open flames, platinum, sodium, bromine pentafluoride, potassium dioxide, acetyl bromide, & acetyl chloride.

Hazardous decomposition products:

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

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

LD50 Dermal-rabbit: 15800 mg/kg Ethanol.

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Rabbit: Causes severe burns - 24 hr (Sodium Hydroxide).

Serious eye damage/irritation:

Rabbit: Corrosive 24 hr (Sodium Hydroxide).

Respiratory or skin sensitization: No additional information.

Carcinogenicity: No additional information.

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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:

Aquatic Tox., Ethanol has a slight acute and chronic toxicity to aquatic life.
Toxicity to fish, LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h (Sodium hydroxide).
Toxicity to fish, LC50 - Oncorhynchus mykiss (rainbow trout) - 45.4 mg/l - 96 h (Sodium hydroxide).
Toxicity to daphnia and other aquatic invertebrates, Immobilization EC50 - Daphnia (water flea) - 40.38 mg/l - 48 h (Sodium hydroxide).

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:

Do not dispose of down drain or into waterways.

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.
Hazard Class: 3
Packing Group: II.
Marine Pollutant (if applicable): No additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Ethanol.
Hazard Class: 3
Packing Group: II.
Marine Pollutant (if applicable): No additional information.
Comments: None

SECTION 15: Regulatory information

United States (USA)

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

Effective date : 01.06.2015

Fluorescent Ink

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

Acute,Fire

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 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:

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: 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).

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Effective date : 01.06.2015

Fluorescent Ink

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 : 11.19.2014

Ethanol, 95%, Denatured, ACS Grade

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

Product name: Ethanol, 95%, Denatured, ACS Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMET1000-A

Recommended uses of the product and restrictions on use: Dec 16 2015 12:00AM

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 2

Irritant
Eye irritation, category 2A
Specific target organ toxicity following single exposure, category 3
Acute toxicity (oral), category 4

Environmentally Damaging
Skin irritation, category 2

Health hazard
Reproductive toxicity, category 2
Specific target organ toxicity following repeated exposure, category 2

Narcotic effects
Flammable Liquid 2.
Specific Target Organ Toxicity, Single Exposure 3.
Specific Target Organ Toxicity, Repeat Exposure 1.
Reproductive toxicity 2.
Acute Toxicity (Oral) 4.
Skin Irritation 2.
Eye Irritation 2A.

Signal word: Danger

Hazard statements:

Highly flammable liquid and vapour.
May cause drowsiness or dizziness.

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Effective date : 11.19.2014

Ethanol, 95%, Denatured, ACS Grade

May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Causes skin irritation.
Causes serious eye 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.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
Use personal protective equipment as required.
Keep away from heat/sparks/open flames/hot surfaces – No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/…/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
In case of fire: Use … for extinction.
Rinse mouth.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Get Medical advice/attention if you feel unwell.
Collect spillage.
IF exposed or concerned: Get medical advice/attention.
Store in a well ventilated place. Keep cool.
Store locked up.
Store in a well ventilated place. Keep container tightly closed.
Dispose of contents/container.

Other Non-GHS Classification: None

SECTION 3: Composition/information on ingredients

Ingredients:

Ingredients:		
CAS 64-17-5	Ethanol	81.51 %
CAS 67-56-1	Methanol	4.29 %
CAS 108-10-1	MIBK	0.9 %
CAS 67-63-0	Isopropyl Alcohol	9.01 %
CAS 7732-18-5	Deionized Water	4.29 %
		Percentages are by weight

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

Effective date : 11.19.2014

Ethanol, 95%, Denatured, ACS Grade

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

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. Give artificial respiration if necessary.

After skin contact:

Rinse thoroughly. Seek medical attention if irritation, discomfort or vomiting persists. Rinse area with water for 10-15 minutes.

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 immediate medical attention or advice.

After swallowing:

Rinse mouth thoroughly. Induce vomiting. Have exposed individual drink sips of water or milk. Seek immediate medical attention or advice.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath. Dizziness. Vomiting. Impact to organs (liver, eyes, other-various). Impact to fetus (if pregnant).

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. Water. Dry chemical. Foam. Carbon dioxide.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. Dangerous fire hazard when exposed to heat, sparks and open flames.

Advice for firefighters:

Protective equipment:

Wear protective equipment. Use NIOSH-approved respiratory protection/breathing apparatus. Use spark-proof tools and explosion-proof equipment.

Additional information (precautions):

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Avoid contact with skin and eyes, and clothing. Use spark-proof tools. 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.

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Collect spilled liquid for recovery, treatment or disposal.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Use non-sparking equipment. 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. Remove all sources of ignition. Contain spill. Do not flush to sewer. Absorb with suitable material and place in chemical waste container. Ventilate area of spill.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Empty containers can still be hazardous since they retain product residue. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Wash hands before breaks and at the end of work. 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 in secure flammable storage area away from sources of ignition. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection

Control parameters:

108-10-1, MIBK, ACGIH TLV STEL: 75 ppm).
67-63-0, 2-Propanol, OSHA PEL TWA: 400 ppm (980 mg/m3).
67-63-0, 2-Propanol, NIOSH REL: TWA 400 ppm (980 mg/m3).
67-63-0, 2-Propanol, NIOSH REL ST: 500 ppm (1225 mg/m3).
67-63-0, 2-Propanol, ACGIH TLV TWA: 200 ppm.
67-63-0, 2-Propanol, ACGIH TLV STEL: 400 ppm.
64-17-5, Ethanol, OSHA PEL: TWA 1000 ppm (1900 mg/m3).
64-17-5, Ethanol, ACGIH TLV TWA: 1000 ppm (1881 mg/m3).
64-17-5, Ethanol, NIOSH IDLH: 3300 ppm [10%LEL].
64-17-5, Ethanol, NIOSH REL TWA: 1000 ppm (1900 mg/m3).
67-56-1, Methanol., OSHA PEL TWA: 260 mg/m3 (200 ppm).
67-56-1, Methanol., OSHA PEL STEL: 325 mg/m3 (250 ppm).
67-56-1, Methanol., ACGIH TLV TWA: 262 mg/m3.
67-56-1, Methanol., ACGIH TLV STEL: 328 mg/m3 (250 ppm).
108-10-1, MIBK, OSHA PEL TWA: 205 mg/m3 (50 ppm).
108-10-1, MIBK, OSHA PEL STEL: 300 mg/m3 (75 ppm).
108-10-1, MIBK, ACGIH TLV TWA 20 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.

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Ethanol, 95%, Denatured, ACS Grade

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

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

Eye protection: Safety glasses with side shields or goggles.

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

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	**Explosion limit lower**: **Explosion limit upper**:	3.3 18
Odor:	Alcohol	**Vapor pressure at 20°C**:	48 mm Hg
Odor threshold:	10 ppm	**Vapor density**:	1.5
pH-value:	Not determined	**Relative density**:	Approx. 0.8
Melting/Freezing point:	- 90 C	**Solubilities**:	infinite solubility
Boiling point/Boiling range:	77 C	**Partition coefficient (n-octanol/water)**:	Not determined
Flash point (closed cup):	15.5 C	**Auto/Self-ignition temperature**:	362.8 C
Evaporation rate:	3.6	**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:

No decomposition if used and stored according to specifications.

Possible hazardous reactions: None

Conditions to avoid:

Store away from oxidizing agents, strong acids or bases. Ignition source. Excess heat. Incompatible materials. Open flame.

Incompatible materials:

Strong acids. Heat. Open flame. Sparks. Strong bases. Potassium dioxide. Acetyl bromide. Acetyl chloride. Bromine pentafluoride. Sodium. Platinum. Strong oxidizers.

Hazardous decomposition products:

Carbon oxides (CO, CO2). Acrid smoke and fumes. Irritating fumes.

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 11.19.2014

Ethanol, 95%, Denatured, ACS Grade

SECTION 11: Toxicological information

Acute Toxicity: No additional information.
Chronic Toxicity: No additional information.
Skin corrosion/irritation: No additional information.
Serious eye damage/irritation:

May cause eye irritation.

Respiratory or skin sensitization: No additional information.
Carcinogenicity:

IARC: IARC classification (1) for Ethanol, CAS# 64-17-5, is intended for use in alcoholic beverage use only. This product is NOT intended for this use.

Germ cell mutagenicity: No additional information.
Reproductive Toxicity: No additional information.
STOT-single and repeated exposure:

Classified as STOT in Section 2 (multiple organs - see above, Section 11)

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:

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 1170

Limited Quantity Exception: None

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Effective date : 11.19.2014

Ethanol, 95%, Denatured, ACS Grade

Bulk:
RQ (if applicable): None
Proper shipping Name: Ethanol (Mixture).
Hazard Class: 3
Packing Group: II.
Marine Pollutant (if applicable): No
additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Ethanol (Mixture).
Hazard Class: 3
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,Fire

SARA Section 313 (Specific toxic chemical listings):

67-56-1 Methanol.
67-63-0 2-Propanol.
108-10-1 MIBK.

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:

108-10-1 Methanol.

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 : 11.19.2014

Ethanol, 95%, Denatured, ACS Grade

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: 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 : 02.10.2015

Butanol, ACS Grade

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

Product name: Butanol, ACS Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMBA1010-A

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:

Flammable
Flammable liquids, category 3

Irritant
Acute toxicity (oral, dermal, inhalation), category 4
Skin irritation, category 2
Specific target organ toxicity following single exposure, category 3

Corrosive
Serious eye damage, category 1

Flam. Liq. 3.
Acute Tox. 4.
Skin Irrit. 2.
Eye Dam. 1.
STOT SE 3.

Signal word: Danger

Hazard statements:

Flammable liquid and vapour.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
May cause respiratory irritation.

Precautionary statements:

If medical advice is needed have product container or label at hand.

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according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 02.10.2015

Butanol, ACS Grade

Keep out of reach of children.
Read label before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash skin thoroughly after handling.
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.
Specific treatment (see supplemental first aid instructions on this label).
Take off contaminated clothing and wash before reuse.
IF ON SKIN: Wash with soap and water.
If skin irritation occurs: Get medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.
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.
Store in a well ventilated place. Keep container tightly closed.
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 71-36-3	Butanol	>99 %
		Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

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

After skin contact:

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

After eye contact:

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

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Effective date : 02.10.2015

Butanol, ACS Grade

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Seek medical attention if irritation, discomfort, or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Headache. Nausea. 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.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Oxides of carbon. Flash back possible over considerable distance. Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters:

Protective equipment:

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

Additional information (precautions):

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

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

Environmental precautions:

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

Methods and material for containment and cleaning up:

Wear protective eyeware, gloves, and clothing. Always obey local regulations. Containerize for disposal. Refer to Section 13. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal. 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 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 : 02.10.2015

Butanol, ACS Grade

Control parameters: 71-36-3, Butanol, ACGIH TLV TWA 20 ppm.
71-36-3, Butanol, OHSA PEL TWA 300.0 mg/m3.
71-36-3, Butanol, NIOSH TWA 150.0 mg/m3.

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 at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	**Explosion limit lower**: **Explosion limit upper**:	Not determined Not determined
Odor:	Alcohol	**Vapor pressure at 20°C**:	6.7 mm Hg
Odor threshold:	Not determined	**Vapor density**:	2.6
pH-value:	Not determined	**Relative density**:	0.81
Melting/Freezing point:	- 89.5 C	**Solubilities**:	Slightly in water.
Boiling point/Boiling range:	116 C	**Partition coefficient (n-octanol/water)**:	Not determined
Flash point (closed cup):	35 C	**Auto/Self-ignition temperature**:	Not determined
Evaporation rate:	0.46	**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

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

Effective date : 02.10.2015

Butanol, ACS Grade

Reactivity:

Nonreactive under normal conditions.

Chemical stability:

Stable under normal conditions.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Incompatible materials.

Incompatible materials: None
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: 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:

LC50 - Pimephales promelas (fathead minnow) , 1,840 mg/l - 96 h.
EC50 - Daphnia magna (Water flea), 1,983 mg/l - 48 h.

Persistence and degradability: No additional information.
Bioaccumulative potential:

Bioconcentration factor (BCF) : 0.38. Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l.

Mobility in soil: No additional information.
Other adverse effects: No additional information.

SECTION 13: Disposal considerations

Waste disposal recommendations:

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

SECTION 14: Transport information

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

Effective date : 02.10.2015

Butanol, ACS Grade

US DOT

UN Number:
ADR, ADN, DOT, IMDG, IATA 1120

Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: Butanols.
Hazard Class: 3
Packing Group: III.
Marine Pollutant (if applicable): No
additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Butanols.
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):

Acute,Chronic,Fire

SARA Section 313 (Specific toxic chemical listings):

71-36-3 Butanol.

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.

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

Effective date : 02.10.2015

Butanol, ACS Grade

SECTION 16: Other information

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

NFPA: 2-0-0
HMIS: 2-0-0
GHS Full Text Phrases: None

Abbreviations and Acronyms:

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

Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

Acetone, ACS Grade

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

Product name: Acetone, ACS Grade

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: KEMAC4800-A

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:

Flammable
Flammable liquids, category 2

Irritant
Eye irritation, category 2A
Specific target organ toxicity following single exposure, category 3

Flam. Liq. 2.
Eye Irrit. 2A.
STOT SE 3.

Signal word: Danger

Hazard statements:

Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.

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.
Wear protective gloves/protective clothing/eye protection/face protection.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/equipment.
Use only non-sparking tools.

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Effective date : 10.24.2014

Acetone, ACS Grade

Take precautionary measures against static discharge.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
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.
Call a POISON CENTER or doctor/physician if you feel unwell.
If eye irritation persists get medical advice/attention.
In case of fire, use agents recommended in section 5 for extinction.
Store in a well ventilated place. Keep container tightly closed.
Store in a well ventilated place. Keep cool.
Store locked up.
Protect from sunlight.
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 67-64-1	Acetone	100 %
		Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

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

After skin contact:

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

After eye contact:

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

After swallowing:

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

Most important symptoms and effects, both acute and delayed:

Irritation. Headache. Nausea. 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.

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

Effective date : 10.24.2014

Acetone, ACS Grade

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

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

Unsuitable extinguishing agents:

Water may be ineffective.

Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides. Vapors can flow to distant ignition sources and flashback.

Advice for firefighters:

Protective equipment:

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

Additional information (precautions):

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

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation. Ensure that air-handling systems are operational. Avoid contact with eyes, skin, and clothing. Remove all sources of ignition.

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 eyeware, gloves, and clothing. Always obey local regulations. Containerize for disposal. Refer to Section 13. Use spark-proof tools and explosion-proof equipment. Remove all sources of ignition. Refer to Section 8. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Do not eat, drink, smoke, or use personal products when handling chemical substances. Use under a chemical fume hood. Use explosion proof equipment. 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. Keep away from open flames, hot surfaces and sources of ignition. 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 : 10.24.2014

Acetone, ACS Grade

Control parameters:	67-64-1, Acetone, ACGIH TLV TWA 1,200 mg/m3. 67-64-1, Acetone, OSHA PEL TWA 2,400 mg/m3.
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. Use under a chemical fume hood.
Respiratory protection:	Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.
Protection of skin:	Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.
Eye protection:	Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.
General hygienic measures:	Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	**Explosion limit lower**: **Explosion limit upper**:	2 %(V) 13 %(V)
Odor:	sweet	**Vapor pressure at 20°C**:	231 mm Hg @ 25°C
Odor threshold:	Not determined	**Vapor density**:	0.791 g/cm3 at 25 °C (77 °F)
pH-value:	7	**Relative density**:	Not determined
Melting/Freezing point:	-94 °C (-137 °F)	**Solubilities**:	Miscible in water.
Boiling point/Boiling range:	56 °C (133 °F)	**Partition coefficient (n-octanol/water)**:	log pow: - 0.24
Flash point (closed cup):	40°C	**Auto/Self-ignition temperature**:	465.0 °C (869.0 °F)
Evaporation rate:	0.1	**Decomposition temperature**:	Not determined
Flammability (solid, gaseous):	Flammable liquid	**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:

Stable under normal conditions.

Possible hazardous reactions:

Acetone reacts violently with phosphorous oxychloride. Vapours may form explosive mixture with air.

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

Effective date : 10.24.2014

Acetone, ACS Grade

Conditions to avoid:

Incompatible materials. Heat, Sparks, Open Flames. Direct Sunlight.

Incompatible materials:

Strong oxidizing agents. Strong reducing agents. Strong Bases. Nitric acid. sulfur dichloride potassium tert-butoxide. hexachloromelamine. chloroform. alkali, sulfuric acid.

Hazardous decomposition products:

Carbon oxides.

SECTION 11: Toxicological information

Acute Toxicity:

Dermal:

LD50 Rabbit: 20000 mg/kg 67-64-1 (acetone).

Chronic Toxicity: No additional information.

Skin corrosion/irritation:

Rabbit: Mild Skin Irritation - 24 h. 67-64-1 (acetone).

Serious eye damage/irritation:

Rabbit: Mild Eye Irritation - 24 - h. 67-64-1 (acetone).

Respiratory or skin sensitization:

guinea pig - Does not cause skin sensitisation.

Carcinogenicity:

Not listed as a carcinogen (ACGIH, IARC, NTP).: 67-64-1 (acetone)

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

STOT-single and repeated exposure:

May cause drowsiness or dizziness.

Additional toxicological information: No additional information.

SECTION 12: Ecological information

Ecotoxicity:

Fish LC50 - Oncorhynchus mykiss (rainbow trout) - 5,540 mg/l - 96 h, 67-64-1 (acetone).
Invertebrates EC50 - Daphnia magna (Water flea) - 8,800 mg/l - 48 h, 67-64-1 (acetone).

Persistence and degradability:

Readily biodegradable.

Bioaccumulative potential:

Not expected to bio accumulate.

Mobility in soil:

Aqueous solution has high mobility in soil.

Other adverse effects:

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

Effective date : 10.24.2014

Acetone, ACS Grade

None identified.

SECTION 13: Disposal considerations

Waste disposal recommendations:

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

SECTION 14: Transport information

US DOT

UN Number:
ADR, ADN, DOT, IMDG, IATA 1090

Limited Quantity Exception: None

Bulk:
RQ (if applicable): None
Proper shipping Name: Acetone.
Hazard Class: 3
Packing Group: II.
Marine Pollutant (if applicable): No
additional information.
Comments: None

Non Bulk:
RQ (if applicable): None
Proper shipping Name: Acetone.
Hazard Class: 3
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,Chronic,Fire

SARA Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

RCRA (hazardous waste code):

67-64-1 Acetone - U002.

TSCA (Toxic Substances Control Act) :

All ingredients are listed.

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

67-64-1 Acetone 5000 lb.

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

Effective date : 10.24.2014

Acetone, ACS Grade

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL) :

All ingredients are listed.

SECTION 16: Other information

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

NFPA: 2-0-0
HMIS: 2-0-0
GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDG International Maritime Code for Dangerous Goods.
IATA International Air Transport Association.
GHS Globally Harmonized System of Classification and Labelling of Chemicals.
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).
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RCRA. Resource Conservation and Recovery Act (USA).
TSCA. Toxic Substances Control Act (USA).
NPRI National Pollutant Release Inventory (Canada).
DOT US Department of Transportation.