

Sodium Thiosulfate, 5%

1. Identification

Product Name: Sodium Thiosulfate, 5%

Item #: SSC1131

Synonyms: N/A

Recommended Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

Chemtrec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

No OSHA Hazard Classifications Applicable

Signal Word: N/A

Hazard Statement(s): N/A

Pictogram(s): N/A

Precautionary Statement(s): None applicable.

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Sodium Thiosulfate		10102-17-7	5
Water		7732-18-5	95

4. First Aid Measures

Eye Contact: Flush eyes with water as a precaution.

Skin Contact: Wash off with plenty of water. Remove contaminated clothing and launder before reuse as a precaution.

Inhalation: Move person to fresh air; give artificial respiration if breathing has stopped.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention if discomfort occurs.

Symptoms: N/A

Recommendations for immediate medical care/special treatment: If exposure by any route causes irritation get medical advice/attention.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

Sodium Thiosulfate, 5%

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store in a well-ventilated place. Keep cool. Keep lid tightly closed.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
N/A		

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
N/A			

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Colorless, Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A

Color: Colorless

Flammability (solid/gas): N/A

Vapor Density: N/A

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Evaporation Rate: N/A

Partition Coefficient: n-octanol/water: N/A

Viscosity: N/A

Auto-ignition temperature: N/A

Solubility: N/A

Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity: N/A

Chemical Stability: Stable

Conditions of Stability/Instability: N/A

Stabilizers needed: None

Safety issue indicated by appearance change: N/A

Sodium Thiosulfate, 5%

Other: N/A

Hazardous Reactions: N/A

Hazardous Polymerization: Does not occur

Conditions to avoid: N/A

Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases

Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (I.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Irritation.

Skin: Irritation.

Inhalation: Dizziness, headache.

Ingestion: Nausea.

Signs or Symptoms of Exposure: Nausea.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): N/A

Carcinogenicity (NTP, IARC, OSHA): Not carcinogenic.

12. Ecological Information

Ecotoxicity:

Persistence and degradability:

Bioaccumulation Potential (octanol-water partition coefficient, BCF):

Mobility in the soil:

Adverse Environmental Effects:

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: Not regulated.

UN Proper Shipping Name:

Transport Hazard Class(es):

Packing Group Number:

Environmental Hazards (IMDG code):

Marine Pollutant:

Transport in Bulk (IBC Code):

Special Transport Precautions:

Sodium Thiosulfate, 5%

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Sodium Thiosulfate, 5%

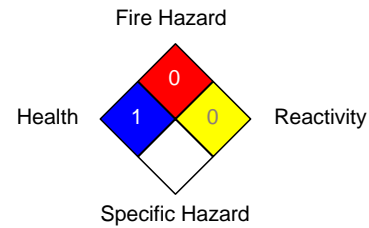
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	1
Fire Hazard	0
Reactivity	0
Specific Hazard	

National Fire Protection Association (USA) NFPA



HMIS

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	

Notice to Reader:

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Sodium Hydroxide, 3%

1. Identification

Product Name: Sodium Hydroxide, 3%

Item #: SSC1128

Synonyms: N/A

Recommended Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

Chemtrec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

Skin Corrosion - Category 1A
Eye Damage - Category 1

Signal Word: Danger

Hazard Statement(s): Causes severe skin burns and eye damage. Causes serious eye damage.

Pictogram(s):



Precautionary Statement(s): Prevention: Do not breathe dusts or mists. Wash body thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection. Wear eye protection, face protection.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Take off all contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor. Specific treatment (see first aid section on this label). If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local regulations.

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Sodium Hydroxide		1310-73-2	3
Water		7732-18-5	97

4. First Aid Measures

Eye Contact: Corrosive. 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.

Skin Contact: Corrosive. If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

Ingestion: Corrosive to internal tissue. Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

Symptoms: Irritation eyes, nose, throat; headache, dizziness, chemical burns.

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell.

Sodium Hydroxide, 3%

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store locked up. Store away from acids. Keep container tightly sealed when not in use. Keep cool.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
Sodium Hydroxide	1310-73-2	2 mg/m ³

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
Sodium Hydroxide	1310-73-2	2 mg/m ³ Ceiling	

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Colorless, Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: Approx 13

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: Pungent

Odor Threshold: N/A

Color: Colorless

Flammability (solid/gas): N/A

Vapor Density: N/A

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Sodium Hydroxide, 3%

Evaporation Rate: N/A
Partition Coefficient: n-octanol/water: N/A
Viscosity: N/A
Auto-ignition temperature: N/A
Solubility: N/A
Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity:
Chemical Stability: Stable
Conditions of Stability/Instability: N/A
Stabilizers needed: None
Safety issue indicated by appearance change: N/A
Other: N/A
Hazardous Reactions: N/A
Hazardous Polymerization: Does not occur
Conditions to avoid: N/A
Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases
Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (i.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

Skin: Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.

Inhalation: Severe irritant. Effects from inhalation of mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.

Ingestion: Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure.

Signs or Symptoms of Exposure: Loss of appetite, inability to concentrate. Headache, irritation of eyes, nose, throat. Nausea.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): N/A

Carcinogenicity (NTP, IARC, OSHA): N/A

12. Ecological Information

Ecotoxicity: Sodium Hydroxide: Toxicity to fish: LC50-Gambusia affinis (mosquito fish)-125mg/l-96h; LC50-oncorhynchus mykiss (rainbow trout)-45.5mg/l-96h Toxicity to daphnia and another aquatic invertebrates: Immobilization EC50-aphnia-40.38mg/l-48h

Persistence and degradability: N/A

Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A

Mobility in the soil: N/A

Adverse Environmental Effects: Harmful to aquatic life.

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Sodium Hydroxide, 3%

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: UN1824

UN Proper Shipping Name: Sodium Hydroxide Solution

Transport Hazard Class(es): 8

Packing Group Number: II

Environmental Hazards (IMDG code):

Marine Pollutant: No

Transport in Bulk (IBC Code): N/A

Special Transport Precautions: N/A

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Sodium Hydroxide, 3%

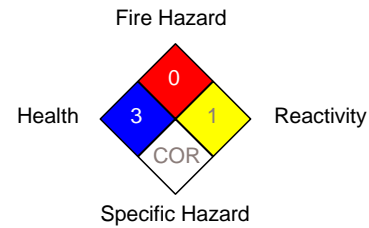
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	3
Fire Hazard	0
Reactivity	1
Specific Hazard	COR

National Fire Protection Association (USA) NFPA



HMIS

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	

Hazardous Material Information System HMIS

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	

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Silver Nitrate, 10%

1. Identification

Product Name: Silver Nitrate, 10%

Item #: SSC1121

Synonyms: Silver Nitrate Solution

Recommended Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

Chemtec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

Skin Irritation - Category 2
Eye Irritation - Category 2A

Signal Word: Warning

Hazard Statement(s): Causes skin irritation. Causes serious eye irritation.

Pictogram(s):



Precautionary Statement(s): Prevention: Wash body thoroughly after handling. Wear protective gloves. Wear eye protection, face protection.

Response: If on skin: Wash with plenty of water. Specific treatment (see first aid section on this label). If skin irritation or rash occurs: Get medical attention. Take off all contaminated clothing and wash it 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 attention.

Storage: N/A

Disposal: N/A

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Silver Nitrate		7761-88-8	10
Water		7732-18-5	90

4. First Aid Measures

Eye Contact: 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.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

Symptoms: Irritation eyes, nose, throat; headache, dizziness

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell.

Silver Nitrate, 10%

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store in a well-ventilated place. Keep cool. Keep lid tightly closed. Store in refrigerator.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
Silver Nitrate	7761-88-8	0.01 mg/m ³ TWA (as Ag)

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
Silver Nitrate	7761-88-8	0.01 mg/m ³ TWA (as Ag)	

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Colorless, Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A

Color: Colorless

Flammability (solid/gas): N/A

Vapor Density: N/A

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Silver Nitrate, 10%

Evaporation Rate: N/A
Partition Coefficient: n-octanol/water: N/A
Viscosity: N/A
Auto-ignition temperature: N/A
Solubility: N/A
Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity:
Chemical Stability: Stable
Conditions of Stability/Instability: N/A
Stabilizers needed: None
Safety issue indicated by appearance change: Exposure to light causes solution to yellow.
Other: N/A
Hazardous Reactions: N/A
Hazardous Polymerization: Does not occur
Conditions to avoid: Exposure to light.
Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases
Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (I.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Irritation. May cause burns or permanent damage to cornea.
Skin: Irritation. May cause redness, pain, burns or damage to skin.
Inhalation: Dizziness, headache.
Ingestion: Nausea. May cause burns of the mouth, throat and stomach. Can cause sore throat, vomiting, diarrhea. Poison.

Signs or Symptoms of Exposure: Nausea. Loss of appetite, inability to concentrate. Headache.
Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.
Acute Toxicity (Numerical Measures): Silver Nitrate: Oral rat LD50: 1173 mg/kg ; Oral guinea pig LD50 473 mg/kg ; Oral rabbit LD50 800 mg/kg
Carcinogenicity (NTP, IARC, OSHA): N/A

12. Ecological Information

Ecotoxicity: N/A
Persistence and degradability: N/A
Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A
Mobility in the soil: N/A
Adverse Environmental Effects: Acute toxicity to aquatic life.

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*
Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*
Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*
Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*
Waste Stream: Consult your local or regional authorities.*

14. Transport Information

Silver Nitrate, 10%

UN Number: Not regulated.

UN Proper Shipping Name:

Transport Hazard Class(es):

Packing Group Number:

Environmental Hazards (IMDG code):

Marine Pollutant:

Transport in Bulk (IBC Code):

Special Transport Precautions:

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Silver Nitrate, 10%

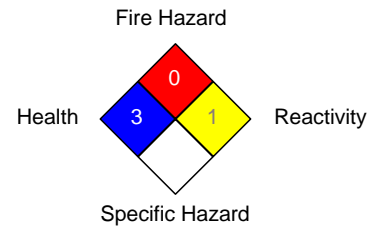
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	3
Fire Hazard	0
Reactivity	1
Specific Hazard	

National Fire Protection Association (USA) NFPA



HMIS

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	

Hazardous Material Information System HMIS

Health	3
Flammability	0
Physical Hazard	1
Personal Protection	

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Potassium Permanganate, 1%

1. Identification

Product Name: Potassium Permanganate, 1%

Item #: SSC1113

Synonyms: N/A

Recommended Use: N/A

Restrictions on Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

In Case of Emergency:

Chemtec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

No OSHA Hazard Classifications Applicable

Signal Word: N/A

Hazard Statement(s): N/A

Pictogram(s): N/A

Precautionary Statement(s): Prevention: N/A

Response: N/A

Storage: N/A

Disposal: N/A

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Water		7732-18-5	99
Potassium Permanganate		7722-64-7	1

4. First Aid Measures

Eye Contact: Flush eyes with water as a precaution.

Skin Contact: Wash off with plenty of water. Remove contaminated clothing and launder before reuse as a precaution.

Inhalation: Move person to fresh air; give artificial respiration if breathing has stopped.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention if discomfort occurs.

Symptoms: N/A

Recommendations for immediate medical care/special treatment: If exposure by any route causes irritation get medical advice/attention.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all

Potassium Permanganate, 1%

sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store in a well-ventilated dark place. Keep cool. Keep out of sunlight.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
N/A		

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
N/A			

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Pink/Purple, Pink/Purple Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A **Color:**

Pink/Purple **Flammability**

(solid/gas): N/A **Vapor**

Density: N/A

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Evaporation Rate: N/A

Partition Coefficient: n-octanol/water: N/A

Viscosity: N/A

Auto-ignition temperature: N/A

Solubility: Soluble in water, methanol, acetone

Decomposition Temperature: N/A

10. Stability and Reactivity

Potassium Permanganate, 1%

Reactivity: N/A

Chemical Stability: Stable

Conditions of Stability/Instability: Incompatible Materials

Stabilizers needed: None

Safety issue indicated by appearance change: N/A

Other: N/A

Hazardous Reactions: N/A

Hazardous Polymerization: Does not occur

Conditions to avoid: Potassium Permanganate CAS 7722-64-7 is a powerful oxidizing agent. Incompatible with reducing agents, acids, formaldehyde, ammonium nitrate, dimethylformamide, glycerol, combustible materials, alcohols, arsenites, bromides, iodides, charcoal, organic substances, ferrous or mercurous salts, hypophosphites, hypo sulfites, sulfites, peroxides, oxalates, ethylene glycol, Manganese salts in air oxidize the toxic sulfur dioxide to more toxic sulfur trioxide. Can react violently with most metal powders, ammonia, ammonium salts, phosphorous, many finely divided organic compounds (materials), flammable liquids, acids, sulfur.

Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases, Zinc, Powdered Metals, Peroxides, Copper, Strong Reducing Agents

Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (i.e. Carbon monoxide, Potassium oxides, Manganese, Manganese oxides) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Irritation.

Skin: Irritation.

Inhalation: Dizziness, headache.

Ingestion: Nausea.

Signs or Symptoms of Exposure: Nausea.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): Potassium Permanganate CAS= 7722-64-7: LD50 (oral, mouse) 750 mg/kg ; LD50 (oral, rat) 750 mg/kg

Carcinogenicity (NTP, IARC, OSHA): N/A

12. Ecological Information

Ecotoxicity: Potassium Permanganate CAS=7722-64-7: Toxicity to Fish: LC50 *Oncorhynchus mykiss* (rainbow trout) - 0.3-0.6 mg/L 96.0 h ; EC50 *Daphnia magna* (Water flea) - 0.084 mg/L 48 h

Persistence and degradability:

Bioaccumulation Potential (octanol-water partition coefficient, BCF):

Mobility in the soil:

Adverse Environmental Effects:

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: Not regulated.

UN Proper Shipping Name:

Transport Hazard Class(es):

Potassium Permanganate, 1%

Packing Group Number:
Environmental Hazards (IMDG code):
Marine Pollutant:
Transport in Bulk (IBC Code):
Special Transport Precautions:

15. Regulatory Information

OSHA:
DOT:
EPA:
CPSC:

Potassium Permanganate, 1%

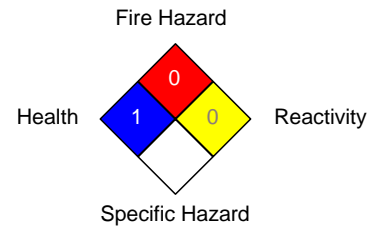
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	1
Fire Hazard	0
Reactivity	0
Specific Hazard	

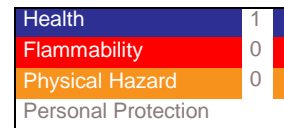
National Fire Protection Association (USA) NFPA



HMIS

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS



Notice to Reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Oxalic Acid, 1%

1. Identification

Product Name: Oxalic Acid, 1%

Item #: SSC1011

Synonyms: N/A

Recommended Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

Chemtrec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

Skin Corrosion - Category 1B

Eye Damage - Category 1

Signal Word: Danger

Hazard Statement(s): Causes severe skin burns and eye damage. Causes serious eye damage.

Pictogram(s):



Precautionary Statement(s): Prevention: Do not breathe dusts or mists. Wash body thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection. Wear eye protection, face protection.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Take off all contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor. Specific treatment (see first aid section on this label). If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local regulations.

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Oxalic Acid		6153-56-6	1
Water		7732-18-5	99

4. First Aid Measures

Eye Contact: 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.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

Symptoms: Irritation eyes, nose, throat; headache, dizziness

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell.

Oxalic Acid, 1%

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store locked up. Store in a well-ventilated, cool area. Keep lid tightly closed when not in use.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
Oxalic Acid	6153-56-6	1 mg/m ³

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
Oxalic Acid	6153-56-6	1 mg/m ³	2 mg/m ³

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Colorless, Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: 1.6

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A

Color: Colorless

Flammability (solid/gas): N/A

Vapor Density: N/A

Upper/Lower flammability or explosive limits: N/A

Oxalic Acid, 1%

Vapor Pressure: N/A
Evaporation Rate: N/A
Partition Coefficient: n-octanol/water: N/A
Viscosity: N/A
Auto-ignition temperature: N/A
Solubility: N/A
Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity: N/A
Chemical Stability: Stable
Conditions of Stability/Instability: N/A
Stabilizers needed: None
Safety issue indicated by appearance change: N/A
Other: N/A
Hazardous Reactions: N/A
Hazardous Polymerization: Does not occur
Conditions to avoid: N/A
Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases
Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (I.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Corrosive to eyes. May cause redness, burns, pain and permanent damage to cornea. May cause blindness.
Skin: Corrosive to skin. May cause dermatitis, pain, redness, chemical burns and permanent skin damage.
Inhalation: Dizziness, headache.
Ingestion: Nausea. May cause burns to mouth, throat, stomach and digestive tract. Poison.

Signs or Symptoms of Exposure: Nausea, redness, irritation.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): N/A

Carcinogenicity (NTP, IARC, OSHA): Does not contain any known carcinogens.

12. Ecological Information

Ecotoxicity: Oxalic Acid: Toxicity to fish: LC50 -Leuciscus icus (Golden orfe)-160mg/l-48h Toxicity to daphnia and other aquatic invertebrates: EC50-Daphnia magna (water flea)-137mg/l-48h

Persistence and degradability: N/A

Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A

Mobility in the soil: N/A

Adverse Environmental Effects: N/A

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

Oxalic Acid, 1%

14. Transport Information

UN Number:

UN Proper Shipping Name:

Transport Hazard Class(es):

Packing Group Number:

Environmental Hazards (IMDG code):

Marine Pollutant:

Transport in Bulk (IBC Code):

Special Transport Precautions:

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Oxalic Acid, 1%

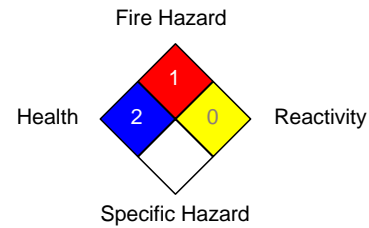
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	2
Fire Hazard	1
Reactivity	0
Specific Hazard	

National Fire Protection Association (USA) NFPA



HMIS

Health	2
Flammability	1
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS

Health	2
Flammability	1
Physical Hazard	0
Personal Protection	

Notice to Reader:

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Nuclear Fast Red Solution

1. Identification

Product Name: Nuclear Fast Red Solution

Item #: SSC1099

Synonyms: N/A

Recommended Use: Stains

Manufacturer:

 Cancer Diagnostics, Inc.
 4300 Emperor Blvd. #400
 Durham, NC 27703
 1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

 Chemtrec US 1-800-424-9300
 Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

Skin Corrosion - Category 1C

Eye Damage - Category 1

Signal Word: Danger

Hazard Statement(s): Causes severe skin burns and eye damage. Causes serious eye damage.

Pictogram(s):

Precautionary Statement(s): Prevention: Do not breathe dusts or mists. Wash body thoroughly after handling. Wear protective gloves, protective clothing, eye protection and face protection. Wear eye protection, face protection.

Response: If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Take off all contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor. Specific treatment (see first aid section on this label). If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local regulations.

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Nuclear Fast Red		6409-77-4	Trade Secret
Aluminum Sulfate		10043-01-3	Trade Secret
Water		7732-18-5	Trade Secret
Preservative		Trade Secret	Trade Secret

4. First Aid Measures

Eye Contact: 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.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the

Nuclear Fast Red Solution

lungs. Get medical attention.

Symptoms: Irritation eyes, nose, throat; headache, dizziness

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store locked up. Store in refrigerator. Keep lid tightly closed.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
N/A		

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
N/A			

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Red, Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A

Color: Red

Nuclear Fast Red Solution

Flammability (solid/gas): N/A
Vapor Density: N/A
Upper/Lower flammability or explosive limits: N/A
Vapor Pressure: N/A
Evaporation Rate: N/A
Partition Coefficient: n-octanol/water: N/A
Viscosity: N/A
Auto-ignition temperature: N/A
Solubility: Soluble in water.
Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity:
Chemical Stability: Stable
Conditions of Stability/Instability: Avoid heat sources.
Stabilizers needed: None
Safety issue indicated by appearance change: N/A
Other: N/A
Hazardous Reactions: Toxic fumes may form when heated to decomposition.
Hazardous Polymerization: Does not occur
Conditions to avoid: N/A
Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases
Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (I.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Corrosive to eyes, may cause permanent damage to cornea.
Skin: Corrosive to skin, may cause permanent damage.
Inhalation: Dizziness, headache.
Ingestion: Nausea. Diarrhea may occur by ingestion of large quantities. Low level of toxicity by ingestion.

Signs or Symptoms of Exposure: Nausea, loss of appetite, inability to concentrate. Headache, irritation of eyes, nose, throat.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): Aluminum Sulfate: LD50(oral, mouse)=6207 mg/kg

Carcinogenicity (NTP, IARC, OSHA): Not listed as a carcinogen.

12. Ecological Information

Ecotoxicity: N/A
Persistence and degradability: N/A
Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A
Mobility in the soil: N/A
Adverse Environmental Effects: N/A

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*
Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*
Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Nuclear Fast Red Solution

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: Not regulated.

UN Proper Shipping Name:

Transport Hazard Class(es):

Packing Group Number:

Environmental Hazards (IMDG code):

Marine Pollutant:

Transport in Bulk (IBC Code):

Special Transport Precautions:

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Nuclear Fast Red Solution

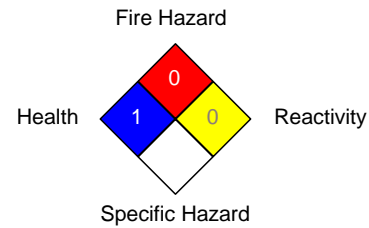
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	1
Fire Hazard	0
Reactivity	0
Specific Hazard	

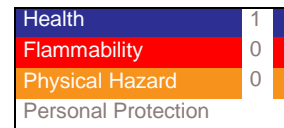
National Fire Protection Association (USA) NFPA



HMIS

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS



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Gold Chloride, 0.2%

1. Identification

Product Name: Gold Chloride, 0.2%

Item #: SSC1080

Synonyms: N/A

Recommended Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

Chemtec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

Skin Irritation - Category 2
Eye Irritation - Category 2A

Signal Word: Warning

Hazard Statement(s): Causes skin irritation. Causes serious eye irritation.

Pictogram(s):



Precautionary Statement(s): Prevention: Wash body thoroughly after handling. Wear protective gloves. Wear eye protection, face protection.

Response: If on skin: Wash with plenty of water. Specific treatment (see first aid section on this label). If skin irritation or rash occurs: Get medical attention. Take off all contaminated clothing and wash it 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 attention.

Storage: N/A

Disposal: N/A

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Gold Chloride		13453-07-1	0.2
Water		7732-18-5	99.8

4. First Aid Measures

Eye Contact: 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.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

Symptoms: Irritation eyes, nose, throat; headache, dizziness

Gold Chloride, 0.2%

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store in refrigerator. Store in a well-ventilated place. Keep cool. Keep lid tightly closed.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
N/A		

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
N/A			

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Brown, Brown Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: 2.2-2.5

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A

Color: Brown

Flammability (solid/gas): N/A

Vapor Density: N/A

Gold Chloride, 0.2%

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Evaporation Rate: N/A

Partition Coefficient: n-octanol/water: N/A

Viscosity: N/A

Auto-ignition temperature: N/A

Solubility: N/A

Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity: N/A

Chemical Stability: Stable

Conditions of Stability/Instability: N/A

Stabilizers needed: None

Safety issue indicated by appearance change: N/A

Other: N/A

Hazardous Reactions: N/A

Hazardous Polymerization: Does not occur

Conditions to avoid: N/A

Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases

Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (I.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Irritation.

Skin: Irritation.

Inhalation: Dizziness, headache.

Ingestion: Nausea.

Signs or Symptoms of Exposure: Nausea.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): N/A

Carcinogenicity (NTP, IARC, OSHA): Does not contain any known carcinogens.

12. Ecological Information

Ecotoxicity: N/A

Persistence and degradability: N/A

Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A

Mobility in the soil: N/A

Adverse Environmental Effects: N/A

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

Gold Chloride, 0.2%

14. Transport Information

UN Number:
UN Proper Shipping Name:
Transport Hazard Class(es):
Packing Group Number:
Environmental Hazards (IMDG code):
Marine Pollutant:
Transport in Bulk (IBC Code):
Special Transport Precautions:

15. Regulatory Information

OSHA:
DOT:
EPA:
CPSC:

Gold Chloride, 0.2%

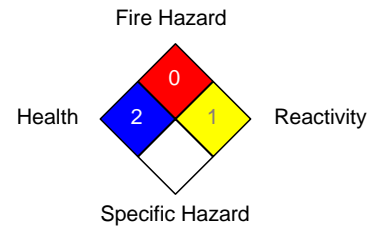
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	2
Fire Hazard	0
Reactivity	1
Specific Hazard	

National Fire Protection Association (USA) NFPA



HMIS

Health	2
Flammability	0
Physical Hazard	1
Personal Protection	

Hazardous Material Information System HMIS

Health	2
Flammability	0
Physical Hazard	1
Personal Protection	

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Formalin Solution, 10%

1. Identification

Product Name: Formalin Solution, 10%

Item #: SSC1074

Synonyms: Formalin, Formaldehyde solution

Recommended Use: Tissue Fixation

Restrictions on Use: N/A

Manufacturer:

 Cancer Diagnostics, Inc.
 4300 Emperor Blvd. #400
 Durham, NC 27703
 1-877-846-5393

In Case of Emergency:

 Chemtrec US 1-800-424-9300
 Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

 Acute Toxicity - Inhalation - Category 4
 Skin Irritation - Category 2
 Eye Damage - Category 1
 Sensitization - Respiratory - Category 1A
 Sensitization - Skin - Category 1A
 Germ Cell Mutagenicity - Category 1B
 Carcinogenicity - Category 1A
 Specific Target Organ Toxicity (single exposure) - Category 2
 Specific Target Organ Toxicity (repeated exposure) - Category 2

Signal Word: Danger

Hazard Statement(s): Harmful if inhaled. Causes skin irritation. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause genetic defects. May cause cancer. May cause damage to organs (lungs, nose). May cause damage to organs (lungs, nose) through prolonged or repeated exposure.

Pictogram(s):

Precautionary Statement(s): Prevention: Avoid breathing dust, vapors. Use only outdoors or in a well-ventilated area. Wash body thoroughly after handling. Wear protective gloves. Wear eye protection, face protection. Wear NIOSH approved respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection and face protection. Do not breathe dust, vapors. Do not eat, drink or smoke when using this product.

Response: If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell. If on skin: Wash with plenty of water. Specific treatment (see first aid section on this label). If skin irritation or rash occurs: Get medical attention. Take off all contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing Immediately call a doctor. If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a doctor. If exposed or concerned: Get medical attention. If exposed or concerned: Call a doctor.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local regulations.

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Water		7732-18-5	Trade Secret

Formalin Solution, 10%

Formaldehyde 37%		50-00-0	Trade Secret
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4. First Aid Measures

Eye Contact: Wash the eyes immediately with large amounts of water occasionally lifting lower and upper lids, until no evidence of chemical remains (at least 15 to 20 minutes). Immediately remove contact lenses if you are able to do so and it is safe. In case of burns, apply sterile bandages loosely without medication. Get medical attention immediately. If you have experienced appreciable eye irritation from a splash or excessive exposure, you should be referred promptly to an ophthalmologist for evaluation.

Skin Contact: Remove contaminated clothing (including shoes) immediately. Wash the affected area of your body with large amounts of water until no evidence of the chemical remains (at least 15 to 20 minutes). If there are chemical burns, get first aid to cover the area with sterile, dry dressing, and bandages. Get medical attention if you experience appreciable eye or respiratory irritation.

Inhalation: Remove the victim from the exposure area to fresh air immediately. Where the formaldehyde concentration may be very high, each rescuer must put on a self-contained breathing apparatus before attempting to remove the victim, and medical personnel should be informed of the formaldehyde exposure immediately. If breathing has stopped, give artificial respiration. Keep the affected person warm and at rest. Qualified first-aid or medical personnel should administer oxygen, if available, and maintain the patient's airways and blood pressure until the victim can be transported to a medical facility. If exposure results in a highly irritated upper respiratory tract and coughing continues for more than 10 minutes, the worker should be hospitalized for observation and treatment.

Ingestion: If the victim is conscious, dilute, inactivate, or absorb the ingested formaldehyde by giving milk, activated charcoal, or water. Any organic material will inactivate formaldehyde. Keep affected person warm and at rest. Get medical attention immediately. If vomiting occurs, keep head lower than hips.

Symptoms: Irritation eyes, nose, throat; headache, dizziness. See section 11

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell or if you have any of the symptoms listed above.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed when not in use.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
Formaldehyde	50-00-0	0.75ppm

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
Formaldehyde	50-00-0	0.3ppm (0.37mg/m3) Ceiling	

Formalin Solution, 10%

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Colorless, Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: Pungent

Odor Threshold: N/A

Color: Colorless

Flammability (solid/gas): N/A

Vapor Density: N/A

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Evaporation Rate: N/A

Partition Coefficient: n-octanol/water: N/A

Viscosity: N/A

Auto-ignition temperature: N/A

Solubility: Miscible in water

Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity:

Chemical Stability: Stable

Conditions of Stability/Instability: N/A

Stabilizers needed: None

Safety issue indicated by appearance change: N/A

Other: N/A

Hazardous Reactions: N/A

Hazardous Polymerization: Does not occur

Conditions to avoid: N/A

Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases

Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (i.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Formaldehyde solutions splashed in the eye can cause injuries ranging from transient discomfort to severe, permanent corneal clouding and loss of vision. The severity of the effect depends on the concentration of formaldehyde in the solution and whether or not the eyes are flushed with water immediately after the accident.

Skin: Formalin is a severe skin irritant and a sensitizer. Contact with formalin causes white discoloration, smarting, drying, cracking, and scaling. Prolonged and repeated contact can cause numbness and a hardening or tanning of the skin. Previously exposed persons

Formalin Solution, 10%

may react to future exposure with an allergic eczematous dermatitis or hives.

Inhalation: Formaldehyde is highly irritating to the upper respiratory tract and eyes. Concentrations of 0.5 to 2.0 ppm may irritate the eyes, nose, and throat of some individuals. Concentrations of 3 to 5 ppm also cause tearing of the eyes and are intolerable to some persons. A concentration of 100 ppm is immediately dangerous to life and health. Deaths from accidental exposure to high concentrations of formaldehyde have been reported.

Ingestion: Liquids containing 10 to 40 percent formaldehyde cause severe irritation and inflammation of the mouth, throat, and stomach. Severe stomach pains will follow ingestion with possible loss of consciousness and death. Ingestion of dilute formaldehyde solutions (0.03-0.04 percent) may cause discomfort in the stomach and pharynx.

Signs or Symptoms of Exposure: Chronic Effects of Exposure Carcinogenicity: Formaldehyde has the potential to cause cancer in humans. Repeated and prolonged exposure increases the risk. Various animal experiments have conclusively shown formaldehyde to be a carcinogen in rats. In humans, formaldehyde exposure has been associated with cancers of the lung, nasopharynx and oropharynx, and nasal passages. Mutagenicity: Formaldehyde is genotoxic in several in vitro test systems showing properties of both an initiator and a promoter. Toxicity: Prolonged or repeated exposure to formaldehyde may result in respiratory impairment. Rats exposed to formaldehyde at 2 ppm developed benign nasal tumors and changes of the cell structure in the nose as well as inflamed mucous membranes of the nose. Structural changes in the epithelial cells in the human nose have also been observed. Some persons have developed asthma or bronchitis following exposure to formaldehyde, most often as the result of an accidental spill involving a single exposure to a high concentration of formaldehyde. Note.-The perception of formaldehyde by odor and eye irritation becomes less sensitive with time as one adapts to formaldehyde. This can lead to overexposure if a worker is relying on formaldehyde's warning properties to alert him or her to the potential for exposure.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea. May cause cancer, mutagenic and reproductive effects. May effect organs (lungs, nose) after single or repeat exposure.

Acute Toxicity (Numerical Measures): Formaldehyde CAS 50-00-0: LD50 385 mg/kg (oral, mouse); LD50 100mg/kg (oral, rat) LC50 203 mg/m3 (inh, rat); LC50 454 mg/m3/4H (inh, mouse)

Carcinogenicity (NTP, IARC, OSHA): Contains Formaldehyde IARC Group 1 Carcinogen associated with nasal sinus cancer, nasopharyngeal cancer, myeloid leukemia.

12. Ecological Information

Ecotoxicity: Formaldehyde is highly toxic to algae, protozoa and other unicellular organisms and slightly toxic to fish. In the atmosphere the material is rapidly degraded by photolysis and photooxidation. Formaldehyde is mobile in the soil. In water or soil, formaldehyde is biodegraded in a few days. Experiments performed on a variety of fish and shrimp show no bioconcentration of formaldehyde.

Persistence and degradability: N/A

Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A

Mobility in the soil: N/A

Adverse Environmental Effects: N/A

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: N/A

UN Proper Shipping Name:

Transport Hazard Class(es):

Packing Group Number:

Environmental Hazards (IMDG code):

Marine Pollutant:

Transport in Bulk (IBC Code):

Formalin Solution, 10%

Special Transport Precautions:

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Formalin Solution, 10%

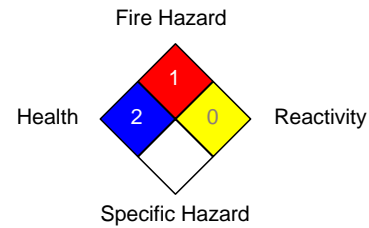
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	2
Fire Hazard	1
Reactivity	0
Specific Hazard	

National Fire Protection Association (USA) NFPA



HMIS

Health	2
Flammability	1
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS

Health	2
Flammability	1
Physical Hazard	0
Personal Protection	

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Ferric Ammonium Sulfate, 2.5%

1. Identification

Product Name: Ferric Ammonium Sulfate, 2.5%

Item #: SSC1072-2.5

Synonyms: N/A

Recommended Use: N/A

Restrictions on Use: N/A

Manufacturer:

Cancer Diagnostics, Inc.
4300 Emperor Blvd. #400
Durham, NC 27703
1-877-846-5393

In Case of Emergency:

Chemtec US 1-800-424-9300
Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

No OSHA Hazard Classifications Applicable

Signal Word: N/A

Hazard Statement(s): N/A

Pictogram(s): N/A

Precautionary Statement(s): Prevention: N/A

Response: N/A

Storage: N/A

Disposal: N/A

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Water		7732-18-5	97.5
Ferric Ammonium Sulfate		7783-83-7	2.5

4. First Aid Measures

Eye Contact: Flush eyes with water as a precaution.

Skin Contact: Wash off with plenty of water. Remove contaminated clothing and launder before reuse as a precaution.

Inhalation: Move person to fresh air; give artificial respiration if breathing has stopped.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention if discomfort occurs.

Symptoms: N/A

Recommendations for immediate medical care/special treatment: If exposure by any route causes irritation get medical advice/attention.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all

Ferric Ammonium Sulfate, 2.5%

sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store in a well-ventilated place. Keep cool.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
N/A		

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
N/A			

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Amber, Amber Liquid

Molecular Weight: N/A

Molecular Formula: N/A

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: N/A

Odor: N/A

Odor Threshold: N/A

Color: Amber

Flammability (solid/gas): N/A

Vapor Density: N/A

Upper/Lower flammability or explosive limits: N/A

Vapor Pressure: N/A

Evaporation Rate: N/A

Partition Coefficient: n-octanol/water: N/A

Viscosity: N/A

Auto-ignition temperature: N/A

Solubility: N/A

Decomposition Temperature: N/A

10. Stability and Reactivity

Ferric Ammonium Sulfate, 2.5%

Reactivity: N/A
Chemical Stability: Stable
Conditions of Stability/Instability: N/A
Stabilizers needed: None
Safety issue indicated by appearance change: N/A
Other: N/A
Hazardous Reactions: N/A
Hazardous Polymerization: Does not occur
Conditions to avoid: N/A
Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases
Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (i.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Irritation.

Skin: Irritation.

Inhalation: Dizziness, headache.

Ingestion: Nausea.

Signs or Symptoms of Exposure: Nausea.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): N/A

Carcinogenicity (NTP, IARC, OSHA): N/A

12. Ecological Information

Ecotoxicity:

Persistence and degradability:

Bioaccumulation Potential (octanol-water partition coefficient, BCF):

Mobility in the soil:

Adverse Environmental Effects:

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: Not regulated.

UN Proper Shipping Name:

Transport Hazard Class(es):

Packing Group Number:

Environmental Hazards (IMDG code):

Marine Pollutant:

Transport in Bulk (IBC Code):

Special Transport Precautions:

Ferric Ammonium Sulfate, 2.5%

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Ferric Ammonium Sulfate, 2.5%

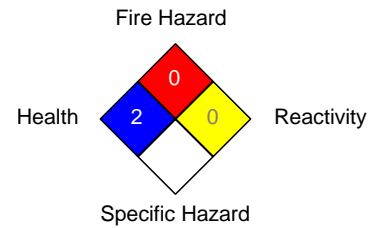
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	2
Fire Hazard	0
Reactivity	0
Specific Hazard	

National Fire Protection Association (USA) NFPA



HMIS

Health	2
Flammability	0
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS

Health	2
Flammability	0
Physical Hazard	0
Personal Protection	

Notice to Reader:

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Ammonium Hydroxide 28%

1. Identification

Product Name: Ammonium Hydroxide 28%

Item #: SSC1045

Synonyms: Ammonia Aqueous, Ammonia Water

Recommended Use: N/A

Manufacturer:

 Cancer Diagnostics, Inc.
 4300 Emperor Blvd. #400
 Durham, NC 27703
 1-877-846-5393

Restrictions on Use: N/A

In Case of Emergency:

 Chemtrec US 1-800-424-9300
 Infotrac International 1-352-323-3500

2. Hazards Identification

OSHA Hazard Classification(s):

Acute Toxicity - Oral - Category 4

Skin Corrosion - Category 1A

Eye Damage - Category 1

Signal Word: Danger

Hazard Statement(s): Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage.

Pictogram(s):

Precautionary Statement(s): Prevention: Wash body thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dusts or mists. Wear protective gloves, protective clothing, eye protection and face protection. Wear eye protection, face protection.

Response: If swallowed: Call a doctor if you feel unwell. Rinse mouth. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Take off all contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor. Specific treatment (see first aid section on this label). If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local regulations.

Descriptions of Hazards not otherwise classified: N/A

Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

Chemical Name	Common Name	CAS #	Concentration %
Ammonium Hydroxide		1336-21-6	28-30
Water		7732-18-5	Balance

4. First Aid Measures

Eye Contact: 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 immediately.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention immediately.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the

Ammonium Hydroxide 28%

lungs. Get medical attention immediately.

Symptoms: Irritation eyes, nose, throat; headache, dizziness.

Recommendations for immediate medical care/special treatment: Get medical advice/attention if you feel unwell.

5. Fire- Fighting Measures

Extinguishing Media: Dry chemical, carbon dioxide, alcohol foam, water.

Fire Hazards (Chemical): Not flammable.

Special Protective Equipment: Fire fighters should use self-contained breathing apparatus and protective clothing.

Precautions for Firefighters: Fire fighters should use self-contained breathing apparatus and protective clothing.

6. Accidental Release Measures

Emergency Procedures: Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

Protective Equipment: See section 8

Environmental Precautions: Prevent release to the environment by using barriers.

Containment and Clean-Up Procedures: Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. Handling and Storage

Handling: Do not breathe vapors. Do not eat, drink or smoke when using this product.

Storage: Store locked up. Store in a well-ventilated, cool place. Keep lid tightly closed when not in use.

8. Exposure Controls/Personal Protection

OSHA Permissible Exposure Limits (PELs):

Reagent	CAS #	OSHA PEL TWA
Ammonia	7664-41-7	50ppm

ACGIH Threshold Limit Values (TLVs):

Reagent	CAS #	ACGIH PEL TLV	ACGIH STEL
Ammonia	7664-41-7	25ppm	35ppm

Engineering Controls: Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

Personal Protective Measures: Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

Special PPE Requirements: If ventilation hood not available wear respirator.

9. Physical and Chemical Properties Section

Appearance: Clear, Liquid

Molecular Weight: 35.05

Molecular Formula: NH₄OH

pH: N/A

Boiling Point and Boiling Range: N/A

Melting Point/Freezing Point: N/A

Flash Point: N/A

Specific Gravity/Relative Density: 0.000

Odor: Ammoniacal

Odor Threshold: N/A

Color: Clear

Ammonium Hydroxide 28%

Flammability (solid/gas): N/A
Vapor Density: N/A
Upper/Lower flammability or explosive limits: N/A
Vapor Pressure: N/A
Evaporation Rate: N/A
Partition Coefficient: n-octanol/water: N/A
Viscosity: N/A
Auto-ignition temperature: N/A
Solubility: N/A
Decomposition Temperature: N/A

10. Stability and Reactivity

Reactivity: N/A
Chemical Stability: Stable
Conditions of Stability/Instability: N/A
Stabilizers needed: None
Safety issue indicated by appearance change: N/A
Other: N/A
Hazardous Reactions: N/A
Hazardous Polymerization: Does not occur
Conditions to avoid: N/A
Classes of Incompatible Materials: Oxidizers, Strong Acids, Strong Bases, Copper, Iron Zinc, halogens, salts of silver & zinc [Note: Corrosive to copper & galvanized surfaces.]
Hazardous Decomposition Products: Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (i.e. Carbon monoxide) may be released in a fire.

11. Toxicological Information

Likely Routes of Exposure

Eyes: Liquid is corrosive to eyes. May cause permanent corneal damage or blindness. Vapors are irritating to the eyes, may cause tearing or stinging.

Skin: Corrosive to skin. May cause permanent skin damage, chemical burns, redness, irritation or pain.

Inhalation: Dizziness, headache, dyspnea (breathing difficulty), wheezing, chest pain; pulmonary edema; pink frothy sputum. Vapors and mist cause irritation to the respiratory tract.

Ingestion: Poison. Toxic by ingestion. May cause death. May cause corrosion to the esophagus and stomach with perforation and peritonitis.

Signs or Symptoms of Exposure: Nausea. Irritation of skin, eyes, nose, throat, lungs. Breathing irregularities.

Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): LD50(oral,rat)=350 mg/kg

Carcinogenicity (NTP, IARC, OSHA): Not listed as a carcinogen.

12. Ecological Information

Ecotoxicity: Toxicity to fish; mortality NOEC -Oncorhynchus tshawytscha-3.5mg/l-3.0d; Toxicity to daphnia and other aquatic invertebrates: LC50-Daphnia magna (water flea)-32mg/l-50h

Persistence and degradability: N/A

Bioaccumulation Potential (octanol-water partition coefficient, BCF): N/A

Mobility in the soil: N/A

Adverse Environmental Effects: Very toxic to aquatic life.

Ammonium Hydroxide 28%

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities.*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: UN2672

UN Proper Shipping Name: Ammonia Solutions (with 10-35% Ammonia)

Transport Hazard Class(es): 8

Packing Group Number: III

Environmental Hazards (IMDG code):

Marine Pollutant: No

Transport in Bulk (IBC Code): N/A

Special Transport Precautions: N/A

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:

Ammonium Hydroxide 28%

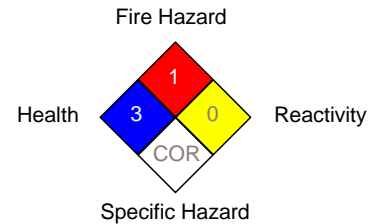
16. Other Information

Revision Date: 2019-01-11

NFPA

Health	3
Fire Hazard	1
Reactivity	0
Specific Hazard	COR

National Fire Protection Association (USA) NFPA



HMIS

Health	3
Flammability	1
Physical Hazard	0
Personal Protection	

Hazardous Material Information System HMIS

Health	3
Flammability	1
Physical Hazard	0
Personal Protection	

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