Material Safety Data Sheet

Section 1 – Chemical Product and Company Identification

Catalog Numbers: AWGPI8063-A, AWGPI8063-B, AWGPI8063-C, AWGPI8063-D, AWGPI8063-P, AWGPI8063-Q, AWGPI8063-G, AWGPI8063-T
Product Identity: Potassium Iodide-Iodate Solution, Sulfite Titrant High

Chemical Family: Not Applicable
Synonyms: Not Applicable
Recommended Use: Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291
Emergency Contact Number (24hr): Chemtel (800) 255-3924

Issue Date: 12/29/06
Revision Date:07/07/08, 04/14/10, 02/19/16

Section 2 – Hazard Identification

Emergency Overview
May irritate skin, eyes, and gastrointestinal tract. Wash areas of contact with water. Get medical attention.
Appearance: Clear, colorless liquid **Odor:** Odorless
Target Organs: Gastrointestinal system, eyes, skin
Potential Health Effects/ Routes of Exposure:
Eyes: May cause irritation.
Skin: May cause slight irritation
Ingestion: Large doses may cause mild irritation in the gastrointestinal tract
Inhalation: May cause irritation.
Chronic Effect / Carcinogenicity: No information available(IARC, NTP, OSHA)
Aggravated Medical Conditions No information available
These chemicals are considered hazardous by OSHA.
See section 11 for toxicological information. See section 12 for potential environmental effects.

Section 3 – Composition, Information on Ingredients

Potassium Iodide, CAS# 7681-11-0, 1.2% w/v
Potassium Iodate, CAS# 7758-05-6, <0.4% w/v
Water, purified, CAS# 7732-18-5, >98% w/v

Section 4 – First Aid

Eyes: Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.
Skin: Flush with water for 15 minutes. Get medical assistance if irritation develops.
Ingestion: DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.
Notes to Physician Treat symptomatically.

Section 5 – Fire Fighting Measures

Flash Point: Not Applicable **Autoignition Temperature** No information available.
Explosion Limits Upper No data available **Lower** No data available
Extinguishing Media: Use appropriate media for surrounding materials.
Unsuitable Extinguishing Media: No information available

Fire & Explosion Hazards: Not considered to be a fire or explosion hazard.
Fire Fighting Instructions / Equipment: Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.
Hazardous Combustion Products: No information Available
Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.
Specific Hazards Arising from the Chemical: No information available
NFPA Rating: (estimated) Health: 1; Flammable: 0; Reactivity: 0

Section 6 – Accidental Release Measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
Environmental Precautions Not relevant considering the small amounts used.
Methods for Containment and Clean Up Absorb with suitable material and treat as normal refuse. Liquid may be flushed to sewer.

Section 7 – Handling and Storage

Handling: Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.
Storage: Keep Protect from freezing and physical damage.

Section 8 – Exposure Controls, Personal Protection

Potassium Iodide, CAS# 7681-11-0, ACGIH TLV: NA, OSHA PEL: NA
Potassium Iodate, CAS# 7758-05-6, ACGIH TLV: NA, OSHA PEL: NA
Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA
Engineering Measures/ General Hygiene: Normal ventilation is adequate. Ensure eyewash and safety showers are available.
Personal Protection Equipment: Skin Protection: Chemical resistant gloves.
Eye/Face Protection: Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

Section 9 – Physical and Chemical Properties

Appearance/Physical State: Clear, colorless liquid

Odor: Odorless	**% Volatility:** No Information Available
Boiling Point: Approx 100C	**Specific Gravity:** Approx 1
Melting Point: Below 0	**Vapor Pressure:** No Information Available
Vapor Density: No Information Available	**Flash Point:** Not Applicable
Evaporation Rate: No Information Available	**Coefficient of water/oil distribution:** Not Available
pH: No Information Available	**Odor Threshold:** Not Available
Flammability: No Information Available	**Decomposition Temperature:** No Information Available
Solubility: Infinite	**Partition Coefficient n-octanol/water:** No data available
Relative Density: No Information Available	**Molecular Weight:** Not available

Section 10 – Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.
Incompatible Materials: Strong acids.
Conditions to Avoid: No Information Available.
Hazardous Decomposition Products: When heated to combustion may produce toxic iodine and iodide vapors.
Hazardous Polymerization: Does not occur
Hazardous Reactions: None under normal processing.

Section 11 – Toxicological Information

Routes of Exposure/Symptoms/Corrosiveness – See Section 2

LD50 orl-rat: No Information Available	LC50 inhalation-rat: No Information Available

Irritation: No Information Available
Toxicologically Synergistic: No Information Available
Chronic Exposure
Carcinogenicity No Information Available
Sensitization No information available.
Mutagenic Effects Potassium Iodide has been investigated
Reproductive Effects Potassium Iodide has been investigated
Developmental Effects (Immediate/Delayed) No information available.
Teratogenicity No information available.
Other Adverse Effects No Information Available.
Endocrine Disruptor Information No information available

Section 12 – Ecological Information

Ecotoxicity: No information available.
Persistence and Degradability: No Information Available **Mobility:** No Information Available
Bioaccumulation/ Accumulation: No Information Available

Section 13 – Disposal Considerations

Waste Disposal/Waste Disposal of Packaging: Dilute with water and flush to sewer.
All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

Section 14 – Transport Information

DOT - Not Regulated

Section 15 – Regulatory Information (not meant to be all inclusive)

OSHA Status: These chemicals are not considered hazardous by OSHA.
Canada DSL: These chemicals are on Canada's DSL.
TSCA: The components of this solution are listed on the TSCA Inventory
SARA Title III Section 313: Not Applicable
RCRA Status: Not Applicable
CERCLA Reportable Quantity: Not Applicable.
WHMIS: Non-controlled
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Section 16 – Additional Information

Disclaimer: The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

Alliance Water Group
1 Yonge Street Suite 1801, Toronto, ON M5E1W7 (416) 452-3124
Emergency Telephone No.: (800) 255-3924

Material Safety Data Sheet

Section 1 – Chemical Product and Company Identification

Catalog Numbers: AWGPI8056-A, AWGPI8056-B, AWGPI8056-C, AWGPI8056-D, AWGPI8056-P, AWGPI8056-Q, AWGPI8056-G, AWGPI8056-T
Product Identity: Potassium Iodide-Iodate, Sulfite Titrant Low

Chemical Family: Not Applicable
Synonyms: Not Applicable
Recommended Use: Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291
Emergency Contact Number (24hr): Chemtel (800) 255-3924

Issue Date: 12/29/06
Revision Date:07/07/08, 04/14/10, 02/19/12

Section 2 – Hazard Identification

Emergency Overview
May irritate skin, eyes, and gastrointestinal tract. Wash areas of contact with water. Get medical attention.
Appearance: Clear, colorless liquid **Odor:** Odorless
Target Organs: Gastrointestinal system, eyes, skin
Potential Health Effects/ Routes of Exposure:
Eyes: May cause irritation.
Skin: May cause slight irritation
Ingestion: Large doses may cause mild irritation in the gastrointestinal tract
Inhalation: May cause irritation.
Chronic Effect / Carcinogenicity: No information available(IARC, NTP, OSHA)
Aggravated Medical Conditions No information available
These chemicals are considered hazardous by OSHA.
See section 11 for toxicological information. See section 12 for potential environmental effects.

Section 3 – Composition, Information on Ingredients

Potassium Iodide, CAS# 7681-11-0, 1% w/v
Potassium Iodate, CAS# 7758-05-6, 0.4% w/v
Water, purified, CAS# 7732-18-5, >98% w/v

Section 4 – First Aid

Eyes: Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.
Skin: Flush with water for 15 minutes. Get medical assistance if irritation develops.
Ingestion: DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.
Notes to Physician Treat symptomatically.

Section 5 – Fire Fighting Measures

Flash Point: Not Applicable **Autoignition Temperature** No information available.
Explosion Limits Upper No data available **Lower** No data available
Extinguishing Media: Use appropriate media for surrounding materials.
Unsuitable Extinguishing Media: No information available

Fire & Explosion Hazards: Not considered to be a fire or explosion hazard.
Fire Fighting Instructions / Equipment: Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment.
Hazardous Combustion Products: No information Available
Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.
Specific Hazards Arising from the Chemical: No information available
NFPA Rating: (estimated) Health: 1; Flammable: 0; Reactivity: 0

Section 6 – Accidental Release Measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
Environmental Precautions Not relevant considering the small amounts used.
Methods for Containment and Clean Up Absorb with suitable material and treat as normal refuse. Liquid may be flushed to sewer.

Section 7 – Handling and Storage

Handling: Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.
Storage: Keep Protect from freezing and physical damage.

Section 8 – Exposure Controls, Personal Protection

Potassium Iodide, CAS# 7681-11-0, ACGIH TLV: NA, OSHA PEL: NA
Potassium Iodate, CAS# 7758-05-6, ACGIH TLV: NA, OSHA PEL: NA
Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA
Engineering Measures/ General Hygiene: Normal ventilation is adequate. Ensure eyewash and safety showers are available.
Personal Protection Equipment: Skin Protection: Chemical resistant gloves.
Eye/Face Protection: Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

Section 9 – Physical and Chemical Properties

Appearance/Physical State: Clear, colorless liquid

Odor: Odorless	**% Volatility:** No Information Available
Boiling Point: Approx 100C	**Specific Gravity:** Approx 1
Melting Point: Below 0	**Vapor Pressure:** No Information Available
Vapor Density: No Information Available	**Flash Point:** Not Applicable
Evaporation Rate: No Information Available	**Coefficient of water/oil distribution:** Not Available
pH: No Information Available	**Odor Threshold:** Not Available
Flammability: No Information Available	**Decomposition Temperature:** No Information Available
Solubility: Infinite	**Partition Coefficient n-octanol/water:** No data available
Relative Density: No Information Available	**Molecular Weight:** Not available

Section 10 – Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.
Incompatible Materials: Strong acids.
Conditions to Avoid: No Information Available.
Hazardous Decomposition Products: When heated to combustion may produce toxic iodine and iodide vapors.
Hazardous Polymerization: Does not occur
Hazardous Reactions: None under normal processing.

Section 11 – Toxicological Information

Routes of Exposure/Symptoms/Corrosiveness – See Section 2

LD50 orl-rat: No Information Available	LC50 inhalation-rat: No Information Available

Irritation: No Information Available
Toxicologically Synergistic: No Information Available
Chronic Exposure
Carcinogenicity No Information Available
Sensitization No information available.
Mutagenic Effects Potassium Iodide has been investigated
Reproductive Effects Potassium Iodide has been investigated
Developmental Effects (Immediate/Delayed) No information available.
Teratogenicity No information available.
Other Adverse Effects No Information Available.
Endocrine Disruptor Information No information available

Section 12 – Ecological Information

Ecotoxicity: No information available.
Persistence and Degradability: No Information Available **Mobility:** No Information Available
Bioaccumulation/ Accumulation: No Information Available

Section 13 – Disposal Considerations

Waste Disposal/Waste Disposal of Packaging: Dilute with water and flush to sewer.
All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

Section 14 – Transport Information

DOT - Not Regulated

Section 15 – Regulatory Information (not meant to be all inclusive)

OSHA Status: These chemicals are not considered hazardous by OSHA.
Canada DSL: These chemicals are on Canada's DSL.
TSCA: The components of this solution are listed on the TSCA Inventory
SARA Title III Section 313: Not Applicable
RCRA Status: Not Applicable
CERCLA Reportable Quantity: Not Applicable.
WHMIS: Non-controlled
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Section 16 – Additional Information

Disclaimer: The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

Alliance Water Group
1 Yonge Street Suite 1801, Toronto, ON M5E1W7 (416) 452-3124
Emergency Telephone No.: (800) 255-3924

Material Safety Data Sheet

Section 1 – Chemical Product and Company Identification

Catalog Numbers: AWGPH1605-A, AWGPH1605-B, AWGPH1605-C, AWGPH1605-D, AWGPH1605-P, AWGPH1605-Q, AWGPH1605-G, AWGPH1605-T
Product Identity: Phenolphthalein Indicator

Chemical Family: Not Applicable
Synonyms: Not Applicable
Recommended Use: Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331, (866) 632-1291
Emergency Contact Number (24hr): Chemtel (800) 255-3924

Issue Date: 12/27/06
Revision Date: 07/07/08, 04/15/10, 10/06/10, 02/19/12, 08/20/12, 01/07/13

Section 2 – Hazard Identification

Emergency Overview: Flammable. May irritate eyes and skin. Wash areas of contact with water. Contains phenolphthalein, a possible carcinogen.
Appearance: Clear, colorless to slight pink liquid **Odor:** Mild alcohol
Target Organs: Central nervous system, eyes, skin, respiratory system.
Potential Health Effects/ Routes of Exposure:
Eyes: May cause burning and stinging irritation and possible damage to cornea and conjunctiva.
Skin: Results in cracking and burning which may lead to secondary infections and dermatitis.
Ingestion: May cause nausea, vomiting, cramps, and diarrhea. Approximately 250mL (Isopropanol) is the lethal dose for a human adult.
Inhalation: May cause mild irritation of the mucous membrane and upper respiratory tract.
Chronic Effect / Carcinogenicity: Phenolphthalein is a possible cancer hazard. Prolonged exposure may cause adverse reproductive effects. May cause kidney injury. May cause allergic skin reaction.
Aggravated Medical Conditions No information available.
These chemicals are considered hazardous by OSHA.
See section 11 for toxicological information. See section 12 for potential environmental effects.

Section 3 – Composition, Information on Ingredients

Isopropanol, CAS# 67-63-0, 25% v/v
Ethanol, CAS# 64-17-5, 12.5% v/v
Methanol, CAS# 67-56-1, 12.5% v/v
Phenolphthalein, CAS# 77-09-8, 0.5% w/v
Water, purified, CAS# 7732-18-5, 50% v/v

Section 4 – First Aid

Eyes: Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.
Skin: Flush with water for 15 minutes. Get medical assistance if irritation develops.
Ingestion: DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.
Notes to Physician: Treat symptomatically.

Section 5 – Fire Fighting Measures

Flash Point: Approximately 13C **Autoignition Temperature** Approximately 398C

Explosion Limits Upper 12.7% vol **Lower** 2.0% vol
Extinguishing Media: Dry Chemical, foam, or carbon dioxide. Water can be used to dilute to non-flammable mixtures.
Unsuitable Extinguishing Media: Water may be ineffective. Do not use a solid water stream as it may scatter and spread fire.
Fire & Explosion Hazards: Containers may explode when heated. May form explosive peroxides. Vapors can flow to distant ignition sources and flashback. Thermal decomposition can lead to release of irritating gases and vapors.
Fire Fighting Instructions / Equipment: Vapors can flow to distant ignition sources and flashback. Use water spray to cool fire exposed containers, and flush non-ignited spills or vapors away from fire. Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.
Hazardous Combustion Products: No information Available
Sensitivity to mechanical impact: No information available.
Sensitivity to static discharge: No information available.
Specific Hazards Arising from the Chemical: No information available
NFPA Rating: (estimated) Health: 1; Flammable: 2; Reactivity: 0

Section 6 – Accidental Release Measures

Personal Precautions: Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
Environmental Precautions: Not relevant considering the small amounts used.
Methods for Containment and Clean Up: Remove source from ignition. Contain spill. Do not flush to sewer. Absorb with inert material and place in chemical waste container. Ventilate spill area. Have extinguishing agent available in case of fire. Use non-sparking equipment. Always obey local regulations.

Section 7 – Handling and Storage

Handling: Wash hands after handling. Avoid contact with skin and eyes. Do not mix with bases.
Storage: Keep container tightly closed. Do not store near combustible materials. Protect from freezing and physical damage. Empty containers may be hazardous since they retain product residue.

Section 8 – Exposure Controls, Personal Protection

Isopropanol, CAS# 67-63-0, ACGIH TLV: 983mg/m3, OSHA PEL: 980mg/m3
Ethanol, CAS# 64-17-5, ACGIH TLV: 1880mg/m3, OSHA PEL: 1900mg/m3
Methanol, CAS# 67-56-1, ACGIH TLV: 200ppm OSHA PEL: 200ppm
Phenolphthalein, CAS# 77-09-8, ACGIH TLV: NA, OSHA PEL: NA
Water, purified, CAS# 7732-18-5, ACGIH TLV: NA, OSHA PEL: NA
Engineering Measures/ General Hygiene: Normal ventilation is adequate. Ensure eyewash and safety showers are available.
Personal Protection Equipment: Skin Protection: Chemical resistant gloves.
Eye/Face Protection: Safety Glasses or goggles. **Respiratory Protection:** Normal ventilation is adequate

Section 9 – Physical and Chemical Properties

Appearance/Physical State: Clear, colorless to slight pink liquid
Odor: Mild alcohol
Boiling Point: Approx 82C
Melting Point: -88C
Vapor Density: 2.1
Evaporation Rate: 2.88
pH: Not available
Flammability: No Information Available
Solubility: Infinite
available
Relative Density: No Information Available
% Volatility: No Information Available
Specific Gravity: 0.85-0.95
Vapor Pressure: 33mm Hg at 20C
Flash Point: Not Applicable
Coefficient of water/oil distribution: Not Available
Odor Threshold: Not Available
Decomposition Temperature: No Information Available
Partition Coefficient n-octanol/water: No data
Molecular Weight: Not Applicable

Section 10 – Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.
Incompatible Materials: Oxidizers, aldehydes, heat, sparks, open flame. Metallic oxides may cause ignition.
Conditions to Avoid: Ignition sources, excess heat.
Hazardous Decomposition Products: Acrid and irritating fumes, including toxic oxides of carbon will heat to combustion.
Hazardous Polymerization: Does not occur
Hazardous Reactions: None under normal processing.

Section 11 – Toxicological Information

Routes of Exposure/Symptoms/Corrosiveness – See Section 2
LD50 orl-rat: 1 g/kg (Phenolphthalein), 5840 mg/kg (Isopropanol), 7060mg/kg (Ethanol), 5628mg/kg (Methanol) LC50 inhalation-rat: 72.6 mg/L (Isopropanol), 83.2 mg/L (Methanol)
Irritation: No Information Available
Toxicologically Synergistic: No Information Available
Chronic Exposure
Carcinogenicity: Phenolphthalein is a known carcinogen in California.
Sensitization: No information available.
Mutagenic Effects: No information available.
Reproductive Effects: No information available.
Developmental Effects (Immediate/Delayed): No information available.
Teratogenicity: No information available.
Other Adverse Effects: No Information Available.
Endocrine Disruptor Information: No information available

Section 12 – Ecological Information

Ecotoxicity: Do not empty into drains.
Persistence and Degradability: No Information Available **Mobility:** No Information Available
Bioaccumulation/ Accumulation: No Information Available

Section 13 – Disposal Considerations

Waste Disposal/Waste Disposal of Packaging: Do not flush to sewer. Absorb with inert material and place in chemical waste container for proper disposal in a disposable facility for incineration in a chemical incinerator. Ventilate spill area. Have extinguishing agent available in case of fire. Eliminate all sources of ignition. Use non-sparking equipment.
All chemical waste generators must determine whether a discarded chemical is classified as hazardous waste. Comply with all local, state, and federal regulations.

Section 14 – Transport Information

DOT – UN1993, Flammable Liquids, N.O.S., (Isopropanol), 3, II

Section 15 – Regulatory Information (not meant to be all inclusive)

OSHA Status: These chemicals are considered hazardous by OSHA.
Canada DSL: The components of this solution are listed on Canada's DSL list.
TSCA: The components of this solution are listed on the TSCA Inventory
SARA Title III Section 313: Not Applicable
RCRA Status: Not Applicable
CERCLA Reportable Quantity: Not reported.
California Prop. 65: WARNING: This product contains chemicals known to the State of California to cause cancer.
WHMIS: B3: Flammable and Combustible material. Combustible Liquid.D-2B: Poisonous and infectious material. Materials causing other toxic effects - Toxic material.
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Section 16 – Additional Information

Disclaimer: The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.

Alliance Water Group
1 Yonge Street Suite 1801, Toronto, ON M5E1W7 (416) 452-3124
Emergency Telephone No.: (800) 255-3924

Material Safety Data Sheet

Section 1 – Chemical Product and Company Identification

Catalog Numbers: AWGST5205-H, AWGST5205-E, AWGST5205-I, AWGST5205-J, AWGST5205-K, AWGST5205-M
Product Identity: Starch Acid Powder

Chemical Family: Not Applicable
Synonyms: No Information Available
Recommended Use: Laboratory chemicals

Manufacturer's Name: AquaPhoenix Scientific, Inc., 9 Barnhart Dr., Hanover, PA 17331
Emergency Contact Number (24hr): Chemtel (800) 255-3924

Issue Date: 12/22/09
Revision Date: 04/21/10, 10/06/10, 02/19/12

Section 2 – Hazard Identification

Emergency Overview: Corrosive irritant to the skin, eyes, and mucous membrane Avoid contact with skin, eyes, and clothing. Wash areas of contact with water. If ingested, dilute with water and get medical attention.
Appearance: White powder **Odor:** Odorless
Target Organs: Eyes, skin, mucous membrane, and upper respiratory tract.
Potential Health Effects/ Routes of Exposure:
Eyes: May cause slight irritation, burning, stinging, and possible damage to the cornea and conjunctiva.
Skin: May cause serious damage, redness, pain, and skin burns.
Ingestion: Corrosive. May cause burning of the mouth, throat, and stomach, leading to death. Can cause, diarrhea, sore throat, and vomiting.
Inhalation: Extremely harmful to tissues of the mucous membrane, and upper respiratory tract, burning sensation, coughing, wheezing, shortness of breath, laryngitis, nausea, vomiting, and headache. May cause pulmonary edema.
Chronic Effect / Carcinogenicity: None (IARC, NTP, OSHA)
Aggravated Medical Conditions No information available
These chemicals are considered hazardous by OSHA.
See section 11 for toxicological information. See section 12 for potential environmental effects.

Section 3 – Composition, Information on Ingredients

Sulfamic Acid, CAS# 5329-14-6, 80% w/w
Starch, CAS# 9005-25-8, 20% w/w

Section 4 – First Aid

Eyes: Immediately flush eyes with water for at least 15 minutes. Immediately get medical assistance.
Skin: Flush with water for 15 minutes. Get medical assistance if irritation develops.
Ingestion: DO NOT induce vomiting. Dilute with water or milk. Get medical assistance.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen.
Notes to Physician Treat symptomatically.

Section 5 – Fire Fighting Measures

Flash Point: Not Applicable **Autoignition Temperature** No information available.
Explosion Limits Upper No data available **Lower** No data available
Extinguishing Media: Use appropriate means to extinguish surrounding fire.

Unsuitable Extinguishing Media: No information available
Fire & Explosion Hazards: Not considered to be a fire or explosion hazard.
Fire Fighting Instructions / Equipment: Use normal procedures. Use protective clothing. Use NIOSH-approved breathing equipment. Poisonous gases may be produced in fire.
Hazardous Combustion Products: No information Available
Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.
Specific Hazards Arising from the Chemical: No Information Available
NFPA Rating: (estimated) Health: 3; Flammable: 1; Reactivity: 0

Section 6 – Accidental Release Measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
Environmental Precautions Should not be released into the environment.
Methods for Containment and Clean Up Ventilate area of spill. Place in a container for disposal.

Section 7 – Handling and Storage

Handling: Wash hands after handling. Avoid contact with skin and eyes.
Storage: Store as corrosive. Protect from freezing and physical damage.

Section 8 – Exposure Controls, Personal Protection

Sulfamic Acid, CAS# 5329-14-6, ACGIH TLV: NA, OSHA PEL: NA
Starch, CAS# 9005-25-8, ACGIH TLV: 10 mg/m3, OSHA PEL: 15 mg/m3
Engineering Measures/ General Hygiene: Normal Ventilation is adequate.
Personal Protection Equipment: Skin Protection: Chemical resistant gloves.
Eye/Face Protection: Safety Glasses or goggles. **Respiratory Protection:** Local/general exhaust is recommended. A dusk mask respirator can be worn if necessary to minimize exposure to dust particles.

Section 9 – Physical and Chemical Properties

Appearance/Physical State: White powder
Odor: Odorless
% Volatility: No Information Available
Boiling Point: Decomposes
Specific Gravity: Approx 2
Melting Point: Decomposes at 205C
Vapor Pressure: No Information Available
Vapor Density: No Information Available
Flash Point: Not Applicable
Evaporation Rate: No Information Available
Coefficient of water/oil distribution: Not Available
pH: No Information Available
Odor Threshold: Not Available
Flammability: No Information Available
Decomposition Temperature: No Information Available
Solubility: slightly
Partition Coefficient n-octanol/water: No data available
Relative Density: No Information Available
Molecular Weight: No Information Available

Section 10 – Stability and Reactivity

Chemical Stability: Stable under normal conditions of use and storage.
Incompatible Materials: Strong oxidizer, nitric acid, chlorine. Solutions are strong acids and react violently with bases.
Conditions to Avoid: No information Available
Hazardous Decomposition Products: Ammonia, oxides of sulfur, nitrogen, and carbon
Hazardous Polymerization: Does not occur
Hazardous Reactions: None under normal processing.

Section 11 – Toxicological Information

Routes of Exposure/Symptoms/Corrosiveness – See Section 2
LD50 orl-rat: 3160 mg/kg (Sulfamic Acid)
LC50 inhalation-rat: NA
Irritation: No information Available
Toxicologically Synergistic: No Information Available
Chronic Exposure

Carcinogenicity There are no known carcinogenic chemicals in this product
Sensitization No information available.
Mutagenic Effects No information available.
Reproductive Effects No information available.
Developmental Effects (Immediate/Delayed) No information available.
Teratogenicity No information available.
Other Adverse Effects No information available.
Endocrine Disruptor Information No information available

Section 12 – Ecological Information

Ecotoxicity: No information available
Persistence and Degradability: No Information Available **Mobility:** No Information Available
Bioaccumulation/ Accumulation: No Information Available

Section 13 – Disposal Considerations

Place in separate labeled container for disposal. Small quantities may be mixed with large volumes of water in fume hood, neutralize with sodium carbonate, and pour down drain with 50 times its volume needed with water. **All chemical waster generators must determine whether a discarded chemical is classified as hazardous waste.**

Section 14 – Transport Information

DOT – UN3261, Corrosive Solid, Acidic, Organic, N.O.S., (Sulfamic Acid), 8, III

Section 15 – Regulatory Information (not meant to be all inclusive)

OSHA Status: These chemicals are considered hazardous by OSHA.
Canada DSL: The chemicals are listed on Canada's DSL list.
TSCA: The components of this solution are listed on the TSCA Inventory
SARA Title III Section 313: Not Applicable
RCRA Status: Not Applicable
CERCLA Reportable Quantity: Not Applicable
WHMIS: E: Corrosive Material.
This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Section 16 – Additional Information

Disclaimer: The information on this MSDS applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for his own particular use. No warranty is implied regarding the accuracy of the data or the results to be obtained from the products use.