SDS

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: **Sulkowitch Reagent**

Product Code(s): S1008

Synonyms: Mixture.

Recommended Use: For manufacturing, industrial, and laboratory use only. Use as a laboratory reagent.

Uses Advised Against: Not for food, drug, or household use.

Supplier: Rocky Mountain Reagents, Inc.
4621 Technology Drive, Golden, CO 80403
Phone: (303) 762-0800 Fax: (303) 762-1240

Emergency Phone Number: For health emergency, call poison control: (800) 222-1222.

2. HAZARDS IDENTIFICATION

Hazard Classifications: Skin Corrosion/Irritation: Category 1A
Eye Damage/Irritation: Category 1

Signal Word: DANGER

Hazard Statements: Causes severe skin burns and serious eye damage.

Pictograms:



Precautionary Statements:

Prevention: Do not breathe mists.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection, and face protection.

Response: Immediately call a poison center or doctor.
If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
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 and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: This product may be toxic to reproduction.
Excessive exposure may cause skin or respiratory sensitization and tooth decay.

Toxicity Statement: This product consists of 1.65% ingredients whose acute toxicities are unknown (see Section 11).

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Water	Water	7732-18-5	H_2O	95.0
Acetic Acid	Ethanoic Acid	64-19-7	$C_2H_4O_2$	1.74
Oxalic Acid, Dihydrate	Ethanedioic Acid, Dihydrate	6153-56-6	$C_2H_2O_2 \cdot 2H_2O$	1.65
Ammonium Oxalate, Monohydrate	Ethanedioic Acid, Monohydrate, Ammonium Salt	6009-70-7	$(NH_4)_2C_2O_2 \cdot H_2O$	1.65

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious, or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician immediately if symptoms occur.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately if symptoms occur.

Skin Contact: Remove contaminated clothing and shoes. Wash skin with plenty of water for at least 15 minutes. Wash clothing before reuse. Call a physician if symptoms occur.

Eye Contact: Check for and remove contact lenses if present and easy to do. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately if symptoms occur.

General Advice: Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that medical personnel and those providing first aid are aware of the material(s) involved and take precautions to protect themselves.

Symptoms and Effects:	Irritation, blistering, burns, visual disturbances, metabolic acidosis, suffocation, shortness of breath, pneumonitis, pulmonary edema, coughing, laryngitis, nausea, vomiting, diarrhea, abdominal pain, blindness, bronchitis, and cardiovascular effects. May be harmful if swallowed or inhaled. May cause burns to the eyes, skin, respiratory tract, and gastrointestinal tract. May affect the mucous membranes, blood, heart, brain, central nervous system, eyes, urinary system, liver, and kidneys. Prolonged or repeated exposure may cause tooth damage, skin discoloration, and respiratory irritation; may cause mutagenic effects, skin sensitization, and adverse reproductive effects.
Immediate Medical Care/ Special Treatment:	Get medical attention immediately if feeling unwell or concerned. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, dry powder, alcohol resistant foam, carbon dioxide.
Unsuitable Extinguishing Media:	Do not use a solid (straight) water stream, as it may scatter and spread fire.
Hazardous Combustion Products:	Carbon oxides, nitrogen oxides, ammonia.
Specific Hazards:	May emit corrosive and/or toxic fumes if exposed to excessive heat.
Special Protective Equipment/ Precautions for Firefighters:	As in any fire, wear MSHA/NIOSH approved (or equivalent) self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear. In the event of fire and/or explosion, do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment:	Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Wear appropriate personal protective equipment (see Section 8). Avoid contact with eyes, skin, and clothing.
Emergency Procedures:	In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).
Methods for Containment:	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material, where this is possible. Product should not be released to the environment. Contain and recover waste when possible.
Methods for Cleanup:	Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Residues from spills can be diluted with water. Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling:	Wear personal protective equipment (see Section 8). Provide sufficient air exchange and/or exhaust in work areas. Avoid contact with skin, eyes, and clothing. Do not breathe vapors or spray mist. Do not ingest. When using, do not eat, drink, or smoke. Keep away from incompatible materials (see Section 10). Use caution when opening product container, as pressure buildup may occur. Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

Storage: Store in a cool, dry, ventilated area. Store away from incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Water:	No information found.		
Acetic Acid:	ACGIH:	TWA:	10 ppm
		STEL:	15 ppm
	OSHA:	PEL:	10 ppm
	NIOSH:	IDLH:	50 ppm
		TWA:	10 ppm
		STEL:	15 ppm
Oxalic Acid, Dihydrate:	ACGIH:	TLV:	1 mg/m^3
		STEL:	2 mg/m^3
	OSHA:	PEL:	1 mg/m^3
	NIOSH:	REL:	1 mg/m^3
		STEL:	2 mg/m^3
Ammonium Oxalate. Monohydrate:	No information found.		

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or if any other circumstances exist where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment: Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance: Colorless, transparent liquid.

Odor: Slight, vinegar.

Odor Threshold: No information found.

Formula Weight:	Mixture.
pH:	< 7.0
Melting/Freezing Point:	No information found.
Boiling Point/Range:	No information found.
Decomposition Temperature:	No information found.
Flash Point:	Not applicable.
Auto-ignition Temperature:	Not applicable.
Flammability:	Not flammable.
Flammability/Explosive Limits:	Not applicable.
Solubility:	Miscible with water.
Vapor Pressure:	No information found.
Vapor Density:	No information found.
Specific Gravity:	1.01 (Water = 1)
Evaporation Rate:	No information found.
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	No information found.

10. STABILITY AND REACTIVITY

Reactivity Data:	May be corrosive to metals. See Section 11.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat, incompatible materials.
Incompatible Materials:	Oxidizing agents, strong bases, metals, amines, carbonates, phosphates, acid halogens.
Hazardous Decomposition Products:	Carbon oxides, nitrogen oxides, ammonia.
Possibility of Hazardous Reactions:	May react vigorously or violently if exposed to excess thermal conditions or in contact with the incompatible materials listed above.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.
Acute Effects:	May be harmful if swallowed or inhaled. May cause burns to the eyes, skin, respiratory tract, and gastrointestinal tract. May affect the mucous membranes, blood, heart, brain, central nervous system, eyes, urinary system, liver, and kidneys.
Chronic Effects:	Prolonged or repeated exposure may cause tooth damage, skin discoloration, and respiratory irritation; may cause mutagenic effects, skin sensitization, and adverse reproductive effects.

Toxicological Data:

Water: Not applicable.

Acetic Acid:
LD_{50} Oral, Rat: 3310 mg/kg
LC_{50} Inhalation, Rat: 11.4 mg/L 4 h
LD_{50} Dermal, Rabbit: 1060 mg/kg
Corrosive to skin and eyes based on animal data.
May cause reproductive effects based on animal data.

Oxalic Acid, Dihydrate:
LD_{50} Oral, Rat: 1080 mg/kg
Corrosive to skin and eyes based on animal data.

Ammonium Oxalate, Monohydrate: Causes skin and eye irritation based on animal data.

Symptoms of Exposure: Irritation, blistering, burns, visual disturbances, metabolic acidosis, suffocation, shortness of breath, pneumonitis, pulmonary edema, coughing, laryngitis, nausea, vomiting, diarrhea, abdominal pain, blindness, bronchitis, and cardiovascular effects.

Carcinogenic Effects: No component of this product is considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:

Water:
Not applicable.

Acetic Acid:
EC_{50}, Water Flea (Daphnia magna): 47 mg/L 24 h
LC_{50}, Fathead Minnow (Pimephales promelas): 88 mg/L 96 h
LC_{50}, Rainbow Trout (Oncorhynchus mykiss): > 1000 mg/L 96 h

Oxalic Acid, Dihydrate:
EC_{50}, Water Flea (Daphnia magna): 137 mg/L 48 h

Ammonium Oxalate, Monohydrate:
No information found.

Persistence and Degradability: Expected to be readily biodegradable.

Environmental Effects: May be harmful to aquatic organisms. Avoid release to the environment.

13. DISPOSAL INFORMATION

Disposal Instructions: All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8).

Contaminated Packaging: Because emptied containers retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.

Waste Codes: No information found.

14. TRANSPORT INFORMATION

DOT: Not regulated.

Environmental Hazard Regulations: No information found.

Other Transport Precautions: Acetic Acid: DOT Reportable Quantity: 5000 lb

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: No information found.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	Yes
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

Section 313: No information found.

CERCLA Reportable Quantities: Acetic Acid, Glacial: 5000 lb

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	N/A
Canada	Domestic Substances List (DSL)	N/A
Canada	Non-Domestic Substances List (NDSL)	N/A
China	Inventory of Existing Chemical Substances in China (IECSC)	N/A
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	N/A
Europe	European List of Notified Chemical Substances (ELINCS)	N/A
Japan	Inventory of Existing and New Chemical Substances (ENCS)	N/A
Korea	Existing Chemicals List (ECL)	N/A
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	N/A

*A "Yes" indicates that the listed component(s) of this product comply with the inventory requirements administered by the governing country(s).

16. OTHER INFORMATION

Disclaimer: Rocky Mountain Reagents, Inc. provides the information in this Safety Data Sheet in the belief that it is reliable but assumes no responsibility for its completeness or accuracy. The physical properties reported in this SDS are obtained from literature and do not constitute product specifications. Rocky Mountain Reagents, Inc. makes and gives no representations or warranties with respect to the information contained herein or the product to which it refers, whether express, implied, or statutory, including without limitation, warranties of accuracy, completeness, merchantability, non-infringement, performance, safety, suitability, stability, and fitness for a particular purpose. No warranty against infringement of any patent, copyright or trademark is made or implied. This SDS is intended only as a guide to the appropriate handling of the material by a properly trained person. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. Accordingly, Rocky Mountain Reagents, Inc. assumes no liability whatsoever for the use of or reliance upon this information including results obtained, incidental or consequential damages, or lost profits.

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Reason for Revision: Update of emergency phone number in Section 1. Supersedes 05/19/2016 version.