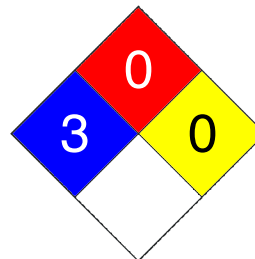


1. Product and Company Identification

Product Name So-Fer 50
CAS # Mixture
Product use Water treatment additive
Manufacturer SODROX Chemicals Ltd.
 7040 Wellington Road 124, R.R. #6
 Guelph, ON N1H 6J3 CA
 Business Phone: 519-837-2330
 Fax: 519-837-3300
 Emergency Phone: 1-800-363-6824

LEGEND HMIS/NFPA	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	* 3
Flammability	0
Physical Hazard	0
Personal Protection	B



2. Hazards Identification

Emergency overview DANGER -- CORROSIVE
 CAUSES SEVERE EYE AND SKIN BURNS.
 CAUSES DIGESTIVE TRACT BURNS.
 May cause chronic toxic effects.

Potential short term health effects

- Routes of exposure** Eye, Skin contact, Inhalation, Ingestion.
- Eyes** Causes chemical burns. May cause blindness.
- Skin** Causes chemical burns.
- Inhalation** May cause respiratory tract irritation or chemical burns.
- Ingestion** Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.

Target organs Kidney. Liver. Lungs. Respiratory system. Skin. Central nervous system.

Chronic effects Chronic exposure to ferric sulphate may cause liver effects.
 Repeated high exposure to ferric sulphate could cause too much iron to build up within the body. Symptoms of this may include and are not limited to upset stomach, nausea, constipation and black bowel movements.

Signs and symptoms The product causes burns of eyes, skin and mucous membranes.

3. Composition / Information on Ingredients

Ingredient(s)	CAS #	Percent
Aluminum sulphate	10043-01-3	10 - 30
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	10 - 30
Sulfuric acid	7664-93-9	0.1 - 1

4. First Aid Measures

First aid procedures

- Eye contact** Immediately flush with cool water. Remove contact lenses, if applicable, and continue flushing for 20 minutes. Obtain medical attention immediately.
- Skin contact** Immediately flush with cool water for 20 minutes while removing contaminated clothing and shoes. Discard or wash well before reuse. Obtain medical attention if irritation persists.
- Inhalation** If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.

Ingestion	Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Never give anything by mouth if victim is unconscious, or is convulsing. Obtain medical attention.
Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties	Not flammable by WHMIS/OSHA criteria.
Extinguishing media	
Suitable extinguishing media	Treat for surrounding material.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of sulphur. Oxides of iron. Oxides of aluminum.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material. Do not get this material in your eyes, on your skin, or on your clothing.
Storage	Keep out of the reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure Limits
Aluminum sulphate	ACGIH-TLV TWA: 2 mg/m3 OSHA-PEL TWA: 2 mg/m3
Sulfuric acid	ACGIH-TLV TWA: 0.2 mg/m3 OSHA-PEL TWA: 1 mg/m3
Sulfuric acid, iron(3++) salt (3:2)	ACGIH-TLV Not established OSHA-PEL Not established

Engineering controls

Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

Personal protective equipment

Eye / face protection

Chemical splash goggles.

Hand protection

Rubber gloves. Confirm with a reputable supplier first.

Skin and body protection

As required by employer code. Use of an impervious apron is recommended.

Respiratory protection

Avoid breathing mists or vapors. Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

General hygiene considerations

Use good industrial hygiene practices in handling this material. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Appearance	Liquid
Color	Dark brown
Form	Liquid
Odor	Odorless
Odor threshold	Not available
Physical state	Liquid
pH	0.18
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flash point	None
Pour point	Not available
Evaporation rate	Not available
Flammability limits in air, lower, % by volume	Not applicable
Flammability limits in air, upper, % by volume	Not applicable
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.34 (H ₂ O = 1)
Octanol/water coefficient	Not available
Solubility (H ₂ O)	Appreciable
Auto-ignition temperature	Not applicable
Viscosity	Slightly viscous

10. Stability and Reactivity

Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with anything but water. Reacts with soft metals producing flammable hydrogen gas. Reacts vigorously with alkaline material or metals.
Incompatible materials	Caustics. Acids. Oxidizers. Soft metals.
Hazardous decomposition products	May include and are not limited to: Oxides of sulphur. Oxides of iron. Oxides of aluminum.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
Aluminum sulphate	Not available
Sulfuric acid	1020 mg/l/4h rat; 160 mg/m ³ mouse
Sulfuric acid, iron(3++) salt (3:2)	Not available

Component analysis - Oral LD50

Ingredient(s)	LD50
Aluminum sulphate	1930 mg/kg rat
Sulfuric acid	2140 mg/kg rat
Sulfuric acid, iron(3++) salt (3:2)	500 mg/kg rat

Effects of acute exposure

Eye	Causes chemical burns. May cause blindness.
Skin	Causes chemical burns.
Inhalation	May cause respiratory tract irritation or chemical burns.
Ingestion	Harmful if swallowed. May cause chemical burns to mouth, throat and stomach.
Sensitization	Non-hazardous by WHMIS/OSHA criteria.
Chronic effects	Prolonged or repeated overexposure can cause liver and kidney damage. Extensive lung damage has been seen in guinea pigs exposed to 4 mg/m ³ of sulphuric acid. There is also lung damage caused in monkeys exposed to 4.79 mg/m ³ for 78 weeks. Repeated high exposure to ferric sulphate could cause too much iron to build up within the body. Symptoms of this may include and are not limited to upset stomach, nausea, constipation and black bowel movements.
Carcinogenicity	There is sufficient evidence that occupational exposure to strong inorganic acid mists containing sulphuric acid is carcinogenic.

ACGIH - Threshold Limit Values - Carcinogens

Sulfuric acid 7664-93-9 A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)

IARC - Group 1 (Carcinogenic to Humans)

Sulfuric acid 7664-93-9 Monograph 54 [1992] (listed under Occupational exposure to mists and vapours from sulfuric acid and other strong inorganic acids)

Mutagenicity	Non-hazardous by WHMIS/OSHA criteria.
Reproductive effects	Non-hazardous by WHMIS/OSHA criteria.
Teratogenicity	Non-hazardous by WHMIS/OSHA criteria.
Synergistic Materials	Not available

12. Ecological Information

Ecotoxicity Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Ecotoxicity - Freshwater Fish Species Data

Aluminum sulphate	10043-01-3	96 Hr LC50 Carassius auratus: 100 mg/L; 96 Hr LC50 Gambusia affinis: 37 mg/L [static]
Sulfuric acid	7664-93-9	96 Hr LC50 Brachydanio rerio: >500 mg/L [static]
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	96 Hr LC50 Gambusia affinis: 37.2 mg/L [static]

Ecotoxicity - Water Flea Data

Aluminum sulphate	10043-01-3	15 Min EC50 Daphnia magna: 136 mg/L
Sulfuric acid	7664-93-9	24 Hr EC50 Daphnia magna: 29 mg/L

Environmental effects Harmful to aquatic life.

Aquatic toxicity Not available

Persistence / degradability Not available

Bioaccumulation / accumulation Not available

Partition coefficient Not available

Mobility in environmental media Not available

Chemical fate information Not available

Other adverse effects Not available

13. Disposal Considerations

Waste codes Not available

Disposal instructions Review federal, state/provincial, and local government requirements prior to disposal.

Waste from residues / unused products Not available

Contaminated packaging Not available

14. Transport Information

U.S. Department of Transportation (DOT)

Basic shipping requirements:

Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s. (SULPHURIC ACID RQ = 101010 lbs)

Hazard class 8

UN number 3264

Packing group III

Additional information:

Special provisions IB3, T7, TP1, TP28

Packaging exceptions 154



Transportation of Dangerous Goods (TDG - Canada)

Basic shipping requirements:

Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (SULPHURIC ACID)

Hazard class 8

UN number 3264

Packing group III

Additional information:

Special provisions 16



15. Regulatory Information

Canadian federal regulations This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canada - WHMIS - Ingredient Disclosure List

Aluminum sulphate	10043-01-3	1%; English Item 53; French Item 198
Sulfuric acid	7664-93-9	1 %
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	0.1%; English Item 1254; French Item 1369

US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

Aluminum sulphate	10043-01-3	5000 Lb final RQ; 2270 kg final RQ
Sulfuric acid	7664-93-9	1000 Lb final RQ; 454 kg final RQ
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	1000 Lb final RQ; 454 kg final RQ

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

Sulfuric acid	7664-93-9	1000 Lb EPCRA RQ
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U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

Sulfuric acid	7664-93-9	1000 Lb TPQ
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U.S. - CERCLA/SARA - Section 313 - Emission Reporting

Sulfuric acid	7664-93-9	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
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U.S. - CWA (Clean Water Act) - Hazardous Substances

Aluminum sulphate	10043-01-3	Present
Sulfuric acid	7664-93-9	Present
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	Present

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity

Aluminum sulphate: 5000.0000
Sulfuric acid, iron(3++) salt (3:2): 1000.0000
Sulphuric acid: 1000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Clean Air Act (CAA) Not available

Clean Water Act (CWA) Not available

WHMIS status Controlled

WHMIS classification Class D - Division 2B, Class E - Corrosive Material

WHMIS labeling



State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances

Aluminum sulphate	10043-01-3	Present
Sulfuric acid	7664-93-9	Present
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	Present

U.S. - Illinois - Toxic Air Contaminants

Sulfuric acid	7664-93-9	Present (aerosol)
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U.S. - Louisiana - Reportable Quantity List for Pollutants

Aluminum sulphate	10043-01-3	5000 Lb final RQ; 2270 kg final RQ
Sulfuric acid	7664-93-9	1000 Lb final RQ; 454 kg final RQ
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	1000 Lb final RQ; 454 kg final RQ

U.S. - Massachusetts - Right To Know List

Aluminum sulphate	10043-01-3	Present
Sulfuric acid	7664-93-9	Extraordinarily hazardous
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	Present

U.S. - Minnesota - Hazardous Substance List

Aluminum sulphate	10043-01-3	Present (includes inert or nuisance dusts)
Sulfuric acid	7664-93-9	Present

U.S. - New Jersey - Right to Know Hazardous Substance List

Aluminum sulphate	10043-01-3	sn 0068
Sulfuric acid	7664-93-9	sn 1761
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	sn 0925

U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances

Aluminum sulphate	10043-01-3	5000 Lb RQ (air); 100 lb RQ (land/water)
Sulfuric acid	7664-93-9	1000 Lb RQ (air); 100 lb RQ (land/water)
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	1000 Lb RQ (air); 100 lb RQ (land/water)

U.S. - North Carolina - Control of Toxic Air Pollutants

Sulfuric acid	7664-93-9	0.012 mg/m3 (chronic toxicants); 0.1 mg/m3 (acute systemic toxicants)
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U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities

Sulfuric acid	7664-93-9	500 Lb TQ
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U.S. - Pennsylvania - RTK (Right to Know) List

Aluminum sulphate	10043-01-3	Environmental hazard
Sulfuric acid	7664-93-9	Environmental hazard
Sulfuric acid, iron(3++) salt (3:2)	10028-22-5	Environmental hazard

U.S. - Rhode Island - Hazardous Substance List

Sulfuric acid	7664-93-9	Toxic; Flammable
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Inventory name

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer

Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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Prepared by

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Other information

For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.