



Safety Data Sheet

K-SUL™

SDS Number: 4055

Revision: June 10, 2016

Section 1: IDENTIFICATION

1.1 Product Name: K-SUL™

1.2 Other Identification:

Chemical Family: Inorganic salt solution.
Formula: $K_2S_2O_3$

1.3 Recommended Use of Chemical: Photo-processing, de-sulfurization.

1.4 Manufacturer: Tessenderlo Kerley Inc.
2255 N. 44th Street, Suite 300
Phoenix, Arizona 85008-3279
Information: (602) 889-8300

1.5 Emergency Contact: Tessenderlo Kerley, Inc. (800) 877-1737
CHEMTREC (800) 424-9300, Domestic
(703) 527-3887, International

Section 2: HAZARD(S) IDENTIFICATION

2.1 Hazard Classification: Health None

Physical None

2.2 Signal Word: Not applicable

2.3 Hazard Statement(s): Not applicable

2.4 Symbol(s): Not applicable

2.5 Precautionary Statement(s): Not applicable

2.6 Unclassified Hazard(s): Aquatic toxicity

2.7 Unknown Toxicity Ingredient: None

Section 3: COMPOSITION/INFORMATION on INGREDIENTS
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3.1 Chemical Ingredients: (See Section 8 for exposure guidelines)

Chemical	Synonym Common Name	CAS No.	EINECS No.	% by Wt.
Thiosulfuric acid (H ₂ S ₂ O ₃), dipotassium salt	Potassium thiosulfate	10294-66-3	233-666-8	50 (Typical)
Water	Water	7732-18-5	231-791-2	Remaining %

Section 4: FIRST AID MEASURES

4.1 Symptoms/Effects:

Acute: Eye contact may cause eye irritation. Repeated or prolonged skin contact may cause skin irritation. Ingestion may irritate the gastrointestinal tract.

Chronic: No known chronic effects.

4.2 Eyes: Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to ensure thorough flushing of the entire area of the eye and lids. Obtain medical attention if irritation occurs.

4.3 Skin: Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Continue rinsing. Obtain medical attention if irritation occurs.

4.4 Ingestion: If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Obtain medical attention.

4.5 Inhalation: Remove victim from contaminated atmosphere. If breathing is labored, administer Oxygen. If breathing has ceased, clear airway and start CPR. Obtain medical attention.

Section 5: FIRE FIGHTING MEASURES
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5.1 Flammable Properties: (See Section 9, for additional flammable properties)

NFPA: **Health - 1** **Flammability - 0** **Reactivity - 0**

5.2 Extinguishing Media:

5.2.1 Suitable Extinguishing Media: Not flammable; use media suitable for combustibles involved in fire.

5.2.2 Unsuitable Extinguishing Media: None known

5.3 Protection of Firefighters:**5.3.1 Specific Hazards Arising from the Chemical:**

Physical Hazards: Heating (flames) of closed or sealed containers may cause violent rupture of container due to thermal expansion of compressed gases.

Chemical Hazards: Heating causes release of oxides of sulfur. Sulfur dioxide is highly irritating to the eyes, respiratory tract and moist skin.

5.3.2 Protective Equipment and Precautions for Firefighters:

Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear. Keep containers/storage vessels in fire area cooled with water spray.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions: Use personal protective equipment specified in Section 8. Isolate the hazard area and deny entry to unnecessary, untrained and unprotected personnel.

6.2 Environmental Precautions: Keep out of “waters of the United States” because of potential aquatic toxicity (See Section 12).

6.3 Methods of Containment:

Small Release: Confine and absorb small releases with sand, earth or other inert absorbents.

Large Release: Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways (potential aquatic toxicity), storm drains or sewers.

6.4 Methods for Cleanup:

Small Release: Shovel up the absorbed material and place in drums for disposal as a chemical waste or recycle for use as originally intended.

Large Release: Recover as much of the spilled product as possible using portable pump and hoses. Use recovered material as originally intended or dispose of as a chemical waste. Treat remaining material as a small release (above).

Section 7: HANDLING and STORAGE

7.1 Handling: Avoid contact with eyes. Use only in a well-ventilated area. Wash thoroughly after handling. Avoid prolonged or repeated contact with the skin.

7.2 Storage: Store in well-ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from sources of heat or flame. Store totes and smaller containers out of direct sunlight at moderate temperatures (See Section 10.5 for materials of construction).

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Exposure Guidelines:**

Chemical	OSHA PELs		ACGIH TLVs	
	TWA	STEL	TWA	STEL
Thiosulfuric acid (H ₂ S ₂ O ₃), dipotassium salt	None	None	None	None
Water	None	None	None	None

8.2 Engineering Controls: Use adequate exhaust ventilation to prevent inhalation of product vapors. Keep eye wash/safety shower in areas where product is commonly handled.

8.3 Personal Protective Equipment (PPE):

8.3.1 Eye/Face Protection: Chemical goggles and a full-face shield.

8.3.2 Skin Protection: Neoprene rubber gloves and apron should be worn to

prevent repeated or prolonged contact with the liquid. Wash contaminated clothing prior to reuse.

8.3.3 Respiratory Protection: None generally required. If conditions exist where mist may be generated, a NIOSH/MSHA approved mist respirator should be worn.

8.3.4 Hygiene Considerations: There are no known hazards associated with this product when used as recommended, however common good industrial hygiene practices should be followed, such as washing thoroughly after handling and before eating or drinking.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

9.1 Appearance:	Clear, colorless liquid
9.2 Odor:	Possible slight sulfur odor
9.3 Odor Threshold:	Not determined
9.4 pH:	7 – 9
9.5 Melting Point/Freezing Point:	Salt Out Temperature <5°F (<-15°C) (<i>Typical</i>)
9.6 Boiling Point:	~222°F (106°C)
9.7 Flash Point:	Not applicable
9.8 Evaporation Rate:	Not applicable
9.9 Flammability:	Not applicable
9.10 Upper/Lower Flammability limits:	Not applicable
9.11 Vapor Pressure:	Not determined
9.12 Vapor Density:	Not determined
9.13 Relative Density:	1.46 (12.2 lb/gal) (<i>Typical</i>)
9.14 Solubility:	Complete
9.15 Partition Coefficient:	Not applicable
9.16 Auto-ignition Temperature:	Not applicable
9.17 Decomposition Temperature:	No data available.
9.18 Viscosity:	1.806 centistokes at 25°C (77°F)

Section 10: STABILITY and REACTIVITY

10.1 Reactivity:	Avoid interaction with heat (flames), oxidizers or acids.
10.2 Chemical Stability:	This is a stable product under normal (ambient) temperature and pressure.
10.3 Possibility of Hazardous Reactions:	Acids or acidic materials will cause the release of Sulfur dioxide.

- 10.4 Conditions to Avoid:** High heat or fire conditions.
- 10.5 Incompatible Materials:** Strong oxidizers such as nitrates, nitrites or chlorates can cause explosive mixtures if heated to dryness. Acids will cause the release of Sulfur dioxide, a severe respiratory hazard. **K-SUL™ is not compatible with Lead or Mercury or their alloys.** These materials of construction should not be used in handling systems or storage containers for this product.
- 10.6 Hazardous Decomposition Products:** Potassium sulfate and Oxides of Sulfur. Sulfur dioxide is a severe respiratory irritant.

Section 11: TOXICOLOGICAL INFORMATION

- 11.1 Oral:** Oral Rat, LD₅₀: > 5,000 mg/kg (single dose)
- 11.2 Dermal:** Dermal Rabbit, LD₅₀: > 2,000 mg/kg (single dose)
- 11.3 Inhalation:** No data available.
- 11.4 Eyes:** No data available.
- 11.5 Chronic/Carcinogenicity:** Not listed in NTP, IARC or OSHA.
- 11.6 Teratology:** No data available.
- 11.7 Reproduction:** No data available.
- 11.8 Mutagenicity:** No data available.

Section 12: ECOLOGICAL INFORMATION

- 12.1 Ecotoxicity:** Static acute 96 hour-LC₅₀ for sheepshead minnow: >1,000 mg/L
Static acute 96 hour-LC₅₀ for mysid shrimp is: 89 mg/L.
- 12.2 Persistence & Degradability:** No data available.
- 12.3 Bioaccumulative Potential:** This product is not bioaccumulative.
- 12.4 Mobility in Soil:** No data available.
- 12.5 Other Adverse Effects:** No data available.

Section 13: DISPOSAL CONSIDERATIONS
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Consult federal, state and local regulations for disposal requirements.

Section 14: TRANSPORT INFORMATION
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14.1 Basic Shipping Description:

14.1.1 Proper Shipping Name:	Potassium thiosulfate solution (not regulated by DOT)
14.1.2 Hazard Classes:	Not applicable
14.1.3 Identification Number:	Not applicable
14.1.4 Packing Group:	Not applicable
14.1.5 Hazardous Substance:	No
14.1.6 Marine Pollutant:	No

14.2 Additional Information:

14.2.1 Other DOT Requirements:

14.2.1.1 Reportable Quantity:	Not applicable
14.2.1.2 Placard(s):	Not applicable
14.2.1.3 Label(s):	Not applicable

14.2.2 USCG Classification: Class 43, Misc. water solutions, Chris Code: PTF

14.2.3 International Transportation:

14.2.3.1 IMO:	Not regulated
14.2.3.2 IATA:	Not regulated
14.2.3.3 TDG (Canada):	Not regulated
14.2.3.4 ADR (Europe):	Not regulated
14.2.3.5 ADG (Australia):	Not regulated

14.2.4 Emergency Response Guide: Not applicable

14.2.5 ERAP (Canada): Not applicable

14.2.6 Special Precautions: None

Section 15: REGULATORY INFORMATION

15.1 U.S. FEDERAL REGULATIONS:

15.1.1 OSHA: This product is not considered hazardous under the criteria of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

15.1.2 TSCA: Product is contained in USEPA Toxic Substance Control Act Inventory

15.1.3 CERCLA: Reportable Quantity – No

15.1.4 SARA Title III:

15.1.4.1 Extremely Hazardous Substance (EHS): No

15.1.4.2 Section 312 (Tier II) Ratings:

Immediate (acute)	No
Fire	No
Sudden Release	No
Reactivity	No
Delayed (chronic)	No

15.1.4.3 Section 313 (FORM R): Not applicable

15.1.5 RCRA: Not applicable

15.1.6 CAA (Hazardous Air Pollutant/HAP): Not Applicable

15.2 INTERNATIONAL REGULATIONS:**15.2.1 Canada:**

15.2.1.1 WHMIS: Not hazardous

15.2.1.2 DSL/NDSL: Listed in DSL, No. 9451

15.3 State Regulations:

15.3.1 CA Proposition 65: Not applicable

Section 16: OTHER INFORMATION

REVISIONS: This SDS was reformatted to comply with the new Hazard Communication Standard dated March 26, 2012, by the Regulatory Affairs Department of Tessenderlo Kerley, Inc. 12/11/2014

Revised sections 3, 6, 9, 10, 11, 12, 14 and 15. 6/10/2016.

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