



Safety Data Sheet

K-SUL™

SDS Number: 4055

Revision: December 11, 2014

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): None

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	50

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 - 0** **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: None. This product is a non-hazardous solution.

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, storm drains and sewers.

6.4 Methods for Cleanup:

Small Release: Shovel up the absorbed material and place in drums for disposal as a chemical waste.

Large Release: Recover as much of the spilled product as possible using portable pump and hoses. Treat remaining material as a small release (above).

6.5 Other Information: Not applicable.

Section 7: HANDLING and STORAGE
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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. 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	TLV	STEL
Not applicable				

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:	<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:	Not determined
9.18 Viscosity:	1.806 centistokes at 25°C (77°F)

Section 10: STABILITY and REACTIVITY

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| 10.1 Reactivity: | Avoid interaction with heat (flames), oxidizers or acids. |
| 10.2 Chemical Stability: | This is a stable product under normal temperatures[60 – 120°F (15 – 49°C)] and pressure. |
| 10.3 Possibility of Hazardous Reactions: | Acids or acidic materials will cause the release of sulfur dioxide. |
| 10.4 Conditions to Avoid: | Heating above 120°F (49°C) |
| 10.5 Incompatible Materials: | Strong <u>oxidizers</u> such as nitrates, nitrites or chlorates can cause explosive mixtures if heated to dryness. <u>Acids</u> will cause the release of sulfur dioxide, a severe respiratory hazard. <u>The following materials of construction are not compatible with K-SUL™; lead or mercury or their alloys.</u> 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
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| 11.1 Oral: | Oral Rat, LD ₅₀ : > 5,000 mg/kg (single dose) |
| 11.2 Dermal: | Dermal Rabbit, LD ₅₀ : > 2,000 mg/kg (single dose) |
| 11.3 Inhalation: | Data not available |
| 11.4 Eyes: | Data not available |
| 11.5 Chronic/Carcinogenicity: | Data not available |
| 11.6 Teratology: | Data not available |
| 11.7 Reproduction: | Data not available |
| 11.8 Mutagenicity: | Data not available |

Section 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity:	Static acute 96 hour-LC ₅₀ for sheepshead minnow: >1,000 mg/L Static acute 96 hour-LC ₅₀ for mysid shrimp is: 89 mg A.I./L Static acute 48 hour LC ₅₀ for mysid shrimp is: 180 mg A.I./L NOEC through 96 hours: 4.8 mg A.I./L for mysid shrimp
12.2 Persistence & Degradability:	No data available
12.3 Bioaccumulative Potential:	This product is not bioaccumulative.
12.4 Mobility in Soil:	Data not available
12.5 Other Adverse Effects:	None

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:	Non-hazardous under IMO regulations
14.2.3.2 IATA:	Non-hazardous under IATA regulations
14.2.3.3 TDG (Canada):	Non-hazardous under TDG regulations
14.2.3.4 ADR (Europe):	Non-hazardous under ADR regulations
14.2.3.5 ADG (Australia):	Non-hazardous under ADG regulations

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 meets 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 – Not applicable

15.1.4 SARA Title III:

15.1.4.1 Extremely Hazardous Substance (EHS): Not listed

15.1.4.2 Section 312 (Tier II) Ratings:	Immediate (acute)	Yes
	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/NDL: 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

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