

Safety Data Sheet

Ammonium Bisulfite Solution

SDS Number: 244 Revision: March 29, 2019

Section 1: IDENTIFICATION

1.1 Product Name: Ammonium Bisulfite Solution

1.2 Other Identification:

Chemical Family: Inorganic salt solution
Formula: NH_4HSO_3

1.3 Recommended Use of Chemical: Oxygen scavenging
De-chlorination
Caramel coloring
Sugar beet processing
Cyanide reduction/removal

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	Skin Corrosive/Irritation	Category 2
	Eye Damage/Irritation	Category 2A
Physical	None	

2.2 Signal Word: **WARNING**

2.3 Hazard Statement(s): Causes skin irritation.
Causes serious eye irritation.



2.4 Symbol(s):

2.5 Precautionary Statement(s): **If on skin:** Wash with plenty of water. Take off contaminated clothing and wash before reuse. If skin irritation occurs: get medical advice/attention.

If in eyes: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do so. Continue rinsing. If eye irritation persists, get medical advice/attention.

Wash hands and face thoroughly with soap and water after handling.

Wear neoprene rubber gloves and apron, chemical goggles and full-face shield..

Do not allow release to aquatic waterway

2.6 Unclassified Hazard(s): Aquatic toxicity

2.7 Unknown Toxicity Ingredient: None

Section 3: COMPOSITION/INFORMATION on INGREDIENTS

3.1 Chemical Ingredients: (See Section 8 for exposure guidelines)

Chemical	Synonym/Common Name	CAS No.	EINECS No.	% By Wt.
Ammonium hydrogen sulfite	Ammonium bisulfite	10192-30-0	233-469-7	60-70
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 persists.

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

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

5.1 Flammable Properties: (See Section 9 for additional flammable properties)

NFPA: Health - 1 Flammability - 0 Reactivity - 1

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: Not applicable

5.3 Protection of Firefighters:

5.3.1 Specific Hazards Arising from the Chemical:

Evolution of Sulfur dioxide vapors, a severe respiratory irritant. Product is corrosive to skin and eyes.

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

Chemical Hazards: Heating causes release of Sulfur dioxide vapors. Vapors are very irritating to eyes, skin and respiratory tract. Heating to dryness may cause the release of Oxides of Sulfur (respiratory hazard).

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. Heating this product will evolve Sulfur dioxide, a severe respiratory irritant.

Section 6: ACCIDENTAL RELEASE MEASURES

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

6.4 Methods for Cleanup:

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

Large Release: Recover as much of the spilled product using portable pump and hoses. Use 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 breathing of vapors. Avoid 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 any 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
Sulfur dioxide	5 ppm	0.25 ppm	None	0.25 ppm
Ammonium hydrogen sulfite	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 showers in areas where product is used.

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, boots 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: Use a properly fitted, air purifying or air-fed respirator complying with NIOSH/MSHA standards and based on the anticipated exposure levels of sulfur dioxide.

8.3.4 Hygiene Considerations: Common good industrial hygiene practices should be followed, such as washing thoroughly after handling/before eating/drinking or after handling the product.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

9.1 Appearance:	Clear pale yellow liquid
9.2 Odor:	Pungent irritating odor
9.3 Odor Threshold:	0.3 to 5 ppm (sulfur dioxide)
9.4 pH:	5.0 to 5.8 (typical)
9.5 Melting Point/Freezing Point:	Salt Out Temperature -22 to >70°F (-30 to >20°C) (typical)
9.6 Boiling Point:	223 to 234°F (106 to 112°C)
9.7 Flash Point:	Not applicable
9.8 Evaporation Rate:	Not determined
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:	1.330 – 1.420 (11.1 – 11.8 lbs/gal)
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:	7.65 cP @ 70°F (60% ABS)

Section 10: STABILITY and REACTIVITY
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10.1 Reactivity:	Product is reactive (See Section 10.5).
10.2 Chemical Stability:	This is a stable product under normal (ambient) temperature and pressure.
10.3 Possibility of Hazardous Reactions:	High heat in enclosed containers. (See Section 10.6.)
10.4 Conditions to Avoid:	High heat and fire conditions.
10.5 Incompatible Materials:	Strong oxidizers such as nitrates, nitrites or chlorates. Acids will cause the release of Sulfur dioxide, a severe respiratory irritant. Alkaline materials will accelerate the evolution of Ammonia. Ammonium bisulfite is not compatible with Copper, Zinc or their alloys (i.e. bronze, brass, galvanized metals, etc.). These materials of construction should not be used in handling systems or storage containers for this product.
10.6 Hazardous Decomposition Products:	Heating this product in an enclosed container above 75°F may generate Ammonium bisulfate, Ammonium sulfate, and Sulfur along with considerable heat and increased Sulfur dioxide vapor pressure.

Section 11: TOXICOLOGICAL INFORMATION

11.1 Oral:	No data available.
11.2 Dermal:	No data available.
11.3 Inhalation:	Inhalation Rat LC ₅₀ : 2,520 ppm, 1 hour (sulfur dioxide).
11.4 Eyes:	No data available.
11.5 Chronic/Carcinogenicity:	Not listed in NTP, IARC or by 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:	No data available, however, ammonium compounds typically are detrimental to aquatic species.
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:	None

Section 13: DISPOSAL CONSIDERATIONS

Consult federal, state and local regulations for disposal requirements.

Section 14: TRANSPORT INFORMATION

14.1 Basic Shipping Description:

14.1.1 Proper Shipping Name:	Bisulfites, aqueous solutions, n.o.s.
14.1.2 Hazard Classes:	8, Corrosive
14.1.3 Identification Number:	UN 2693
14.1.4 Packing Group:	III
14.1.5 Hazardous Substance:	Yes
14.1.6 Marine Pollutant:	No

14.2 Additional Information:

14.2.1 Other DOT Requirements:

14.2.1.1 Reportable Quantity:	Yes, 5,000 lbs (2,268 kg) Ammonium Bisulfite	
14.2.1.2 Placard(s):	Corrosive	
14.2.1.3 Label(s):	Corrosive	
14.2.2 USCG Classification:	Category not available.	Chris Code - ASU
14.2.3 International Transportation:		
14.2.3.1 IMO:	Bisulphites, aqueous solutions, n.o.s.	
14.2.3.2 IATA:	Bisulphites, aqueous solutions, n.o.s.	
14.2.3.3 TDG (Canada):	Bisulphites, aqueous solutions, n.o.s.	
14.2.3.4 ADR (Europe):	Bisulphites, aqueous solutions, n.o.s.	
14.2.3.5 ADG (Australia):	Bisulphites, aqueous solutions, n.o.s.	
14.2.4 Emergency Response Guide:	154	
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 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 – Yes, 5,000 lbs (669 gallons of 65% solution).	
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)	Yes
	Fire	No
	Sudden Release	No
	Reactivity	Yes
	Delayed (chronic)	No
15.1.4.3 Section 313 (FORM R):	Yes, ammonia solution.	
15.1.5 RCRA:	No	
15.1.6 CAA (Hazardous Air Pollutant/HAP):	Not applicable	

15.2 International Regulations:**15.2.1 Canada:**


15.2.1.1 WHMIS:

Class E, D2B

15.2.1.2 DSL/NDL:

Listed in DSL, Record No. 9408

15.3 State Regulations:**15.3.1 CA Proposition 65:**

 **WARNING:** This product can expose you to chemicals including sulfur dioxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65.Warnings.ca.gov.

Section 16: OTHER INFORMATION**REVISIONS:**

Revised entire document to comply with OSHA Hazcom, new SDS, 5/23/2012.
 Revised document to comply with OSHA GHS Standard, 7/1/2014.
 Revised Section 2, formatting and Precautionary Statements. 9/15/2014.
 Revised multiple section formatting to conform to GHS, 12/19/2014.
 Revised multiple sections with typographical errors, 3/11/2015.
 Revised sections 8, 9, 10 and 15. 6/10/2016.
 Revised sections 3 and 9. 10/11/2017.
 Revised date only. 6/6/2018
 Revised Section 15. 8/6/2018
 Revised Sections 1, 3 9 14. 3/29/2019

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