



SAFETY DATA SHEET

(according to (EC) 1907/2006)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Ammonium Bisulfite Solution

Synonyms:

Ammonium Monosulfite solution; Ammonium Hydrogen Sulfite Solution

1.2. Relevant identified uses of the substance or mixture and uses advised against

Preservative; Chemical intermediate

1.3. Details of the supplier of the safety data sheet

Vertellus LLC
P.O. Box 730,
Delaware Water Gap, PA
800-344-3426

1.4. Emergency telephone number

Vertellus: 800-344-3426

CHEMTREC (USA): (800) 424-9300

(collect calls accepted); (Int'l): (703) 527-3887

(collect calls accepted; 011 prefix not needed)

SECTION 2: Hazards identification

HMIS Rating	
HEALTH	3
FLAMMABILITY	0
REACTIVITY	0

2.1. Classification of the substance or mixture

(According to Regulation (EC) No 1272/2008)

Skin Corrosion/Irritation Category 1B

Serious Eye Damage/Eye Irritation Category 1

(According to Directive 67/548/EEC)

Symbol: C

Risk Phrases: R34: Causes burns.

Safety Phrases: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately.

2.2. Label elements

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Hazard Symbols (Pictogram):



Signal Word:
Danger

Hazard Precautions:

H314 - Causes severe skin burns and eye damage.

Prevention Precautionary Statements:

P260 - Do not breathe dust/fume/gas/mist/vapours/spray.

P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

First Aid Precautionary Statements:

P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTER or doctor/physician.

P321 - Specific treatment (see supplemental information on this label).

P363 - Wash contaminated clothing before reuse.

Storage Precautionary Statements:

P405 - Store locked up.

Disposal Precautionary Statements:

P501 - Dispose of contents/container in accordance with local/regional/national/international regulation for hazardous wastes.

2.3. Other hazards

Signs and Symptoms of Potential Overexposure:

Breathing mists or vapors causes irritation of the nose, throat and respiratory tract. Inhaling vapors and mists of sulfite substances has been reported to cause asthma-like reactions in sensitive individuals. Symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Extreme over-exposure to mists or vapors may cause severe irritation and pulmonary edema (fluid in the lungs). Swallowing can cause severe irritation to the mouth, throat, and digestive system. May cause burns if swallowed. Sulfite substances can cause asthma like symptoms in sensitive individuals if ingested, even at very small quantities. May cause vomiting. Small amounts of this product drawn into the lungs during ingestion or vomiting could cause a potentially life-threatening accumulation of fluid. May cause a



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Primary Route(s) of Exposure:

severe allergic reaction in some asthmatics and sulfite-sensitive individuals.
Corrosive to skin; causes burns and severe irritation with redness, blistering and pain.
Corrosive to eyes; causes burns and may cause permanent eye injury.
Skin contact and absorption, eye contact, ingestion, inhalation.

Medical Conditions Aggravated by Exposure:

No data found

SECTION 3: Composition/information on ingredients

3.1. Substances or 3.2. Mixtures

Ingredient	CAS Number	Concentration (%)	EINECS / ELINCS	CLP Inventory/ Annex VI	EU DSD Classification (67/548/EEC)	EU CLP Classification (1272/2008)
Water	7732-18-5	30 - 60	231-791-2	Not listed.	N/A Not applicable	
Ammonium Bisulfite	10192-30-0	30 - 60	233-469-7	Not listed.	C R34	Skin Corr. 1B; H314

NOTE: See Section 8 of this MSDS for exposure limit data for these ingredients.
See Section 15 of this MSDS for trade secret information (where applicable).
See Section 16 of this MSDS for the full text of the R-phrases above.

SECTION 4: First aid measures

4.1. Description of first aid measures

- Skin Contact:** As quickly as possible, remove all contaminated clothing, shoes and leather goods (watchbands, belts). Immediately flush with lukewarm, gently flowing water for at least 30 minutes. Do not interrupt flushing. If necessary, and it can be done safely, continue flushing during transport to emergency care facility. Get medical attention immediately.
- Eye Contact:** Immediately flush eyes with water for at least 30 minutes, holding eyelids apart. If a contact lens is present, do not delay irrigation or attempt to remove lens. Neutral saline solution may be used as soon as it is available. Do not interrupt flushing. Take care not to rinse contaminated water into the unaffected eye or onto face. Get medical attention immediately.
- Inhalation:** Remove from exposure area to fresh air immediately. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Get medical attention immediately.
- Ingestion:** Never administer anything by mouth if a victim is losing consciousness, is unconscious, or is convulsing. Immediately give 1 or 2 glasses of water and get prompt medical attention. Do NOT induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Have victim rinse mouth thorough with water if alert and capable. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

- Acute:** Breathing mists or vapors causes irritation of the nose, throat and respiratory tract. Inhaling vapors and mists of sulfite substances has been reported to cause asthma-like reactions in sensitive individuals. Symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Extreme over-exposure to mists or vapors may cause severe irritation and pulmonary edema (fluid in the lungs). Swallowing can cause severe irritation to the mouth, throat, and digestive system. May cause burns if swallowed. Sulfite substances can cause asthma like symptoms in sensitive individuals if ingested, even at very small quantities. May cause vomiting. Small amounts of this product drawn into the lungs during

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ingestion or vomiting could cause a potentially life-threatening accumulation of fluid. May cause a severe allergic reaction in some asthmatics and sulfite-sensitive individuals. Corrosive to skin; causes burns and severe irritation with redness, blistering and pain. Corrosive to eyes; causes burns and may cause permanent eye injury.

Delayed Effects: None known.

4.3. Indication of any immediate medical attention and special treatment needed

Thermal Exposure: Not applicable.

Note to Physician: No additional first aid information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media: Water spray, water fog, alcohol-resistant foam, carbon dioxide, dry chemical.

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: Toxic fumes may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide), sulfur dioxide Ammonia.

Potential for Dust Explosion: not available

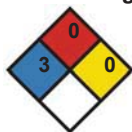
Special Flammability Hazards: Not applicable.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: As for any fire, evacuate the area and fight the fire from a safe distance
 As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Flammability Classification (OSHA): Water runoff can cause environmental damage. Dike and collect water used to fight fire.
 Not applicable.

NFPA Rating



SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions



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Prevent releases to soils, drains, sewers, and waterways.

6.3. Methods and material for containment and cleaning up

Containment Techniques and Clean-up Procedures: Isolate the spill area. Stop the leak if it is safe to do so. Contain spill with an inert absorbent material. Clean up spills immediately. For small spills, neutralize with alkali such as sodium carbonate or sodium bicarbonate. Use inerts (sand, earth, etc) as absorbent material and collect for later disposal.

Special Reporting Requirements: Not applicable.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for Unique Hazards: Not applicable.

Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material.

Special Handling Equipment: Not applicable.

7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations: Store in a dry area Store in a cool place in original container and protect from sunlight Store in a tightly closed container

Dangerous Incompatibility Reactions: Avoid strong acids, strong bases, and excessive heat. Strong oxidizers

Incompatibilities with Materials of Construction: none known

7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits (United States):	OSHA PEL: 2 ppm. (STEL: 5ppm [Sulfur dioxide])	ACGIH TLV: 2 ppm. (STEL: 5ppm [Sulfur dioxide])
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8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

Personal Protective Equipment: Impervious gloves, boots, and clothing, chemical goggles or face shield where necessary, and a NIOSH approved chemical cartridge respirator or supplied air breathing apparatus. NIOSH recommendations for sulfur dioxide concentrations in air:
Up to 20 ppm: chemical cartridge respirator with cartridge(s) to protect against sulfur dioxide, or SAR (supplied-air respirator).
Up to 50 ppm: Powered air-purifying respirator with cartridge(s) to protect against sulfur dioxide, or

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Respirator Caution:	SAR operated in a continuous-flow mode. Up to 100 ppm: Full-face chemical cartridge respirator with cartridges(s) to protect against sulfur dioxide, or gas mask with canister to protect against sulfur dioxide, or powered air-purifying respirator with a tight-fitting facepiece and cartridge(s) to protect against sulfur dioxide, or full-face SCBA, or full-face SAR, or SAR with a tight-fitting facepiece operated in a continuous-flow mode. The IDLH for sulfur dioxide is 100 ppm.
Ventilation:	Observe OSHA regulations for respirator use (29 CFR 1910.134). Air-purifying respirators must not be used in oxygen-deficient atmospheres. All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided.
Other Engineering Controls:	All appropriate engineering controls should be used to minimize exposure potential. Use exhaust ventilation to keep airborne concentrations below exposure limits. IDLH for sulfur dioxide is 100 ppm.
Thermal Hazards:	Not applicable.
Additive or Synergistic Effects:	None known.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature):	Yellow solution; may have irritating sulfur dioxide odor.	Molecular Weight:	99.10 g/mol
Molecular Formula:	Not available.	Evaporation Rate:	Not determined
Vapor Pressure:	Not available.	Vapor Density (air = 1):	Not available.
Specific Gravity or Density:	1.22	Freezing / Melting Point:	-26 °C
Boiling Point:	102 °C	Octanol / Water Coefficient:	Not available.
Solubility in Water:	Miscible in water	Odor Threshold:	3 - 5 ppm for sulfur dioxide.
pH:	4 - 6.5	Autoignition Temperature:	Not available.
Viscosity:	Not available.	Flammable Limits:	Not available. (LEL) – Not available. (UEL)
Flash Point and Method:	Not available. (Not available.)		

9.2. Other information

Not applicable.

SECTION 10: Stability and reactivity

<u>10.1. Reactivity</u>	Not classified as dangerously reactive.
<u>10.2. Chemical stability</u>	Stable. However, ammonium bisulfite may decompose at elevated temperatures above 82 °C (179 °F).
<u>10.3. Possibility of hazardous reactions</u>	Not expected to occur.
<u>10.4. Conditions to avoid</u>	Elevated ambient temperatures. Incompatibles.
<u>10.5. Incompatible materials</u>	Avoid strong acids, strong bases, and excessive heat.; Strong oxidizers

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10.6. Hazardous decomposition products

Ammonia.; sulfur dioxide; Toxic fumes may be released upon thermal decomposition (cyanides, nitrogen oxides, carbon monoxide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute Oral LD ₅₀ :	Oral LD50 (rat) > 90000 mg/kg	Water
Acute Dermal LD ₅₀ :	Not available.	
Acute Inhalation LC ₅₀ :	Not available.	
Skin Irritation:	Corrosive to skin.	
Skin Sensitization:	No data available.	
Eye Irritation:	Corrosive to eyes.	
Target Organs:	No data available.	
Carcinogenicity:	No data available.	
Teratogenicity:	No data available.	
Reproduction:	No data available.	
Neurotoxicity:	No data available.	
Mutagenicity:	No data available.	
Additional Toxicity Information:	May cause a severe allergic reaction in some asthmatics and sulfite-sensitive persons.	

SECTION 12: Ecological information

<u>12.1. Toxicity</u>	Not available.	
<u>12.2. Persistence and degradability</u>	No data	
<u>12.3. Bioaccumulative potential</u>	No data	
<u>12.4. Mobility in soil</u>	No data	
<u>12.5. Results of PBT and vPvB assessment</u>	Not available.	
<u>12.6. Other adverse effects</u>	This solution is mildly acidic (pH 4 - 6.5) but contains high levels of ammonium ions which are harmful to aquatic life, particularly fish. Ammonium bisulfite has a high COD.	
		Component Name:
German Water Hazard Classification:	Not available.	Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

US EPA Waste Number: USEPA designated generic categories - Aqueous ammonia; NH₃ equivalent wt. % = 17.18.



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Waste Disposal: Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

<u>14.1. UN number</u>	UN2693
<u>14.2. UN proper shipping name</u>	Bisulfites, aqueous solutions, n.o.s. (Ammonium Bisulfite Solution)
<u>14.3. Transport hazard class(es)</u>	8
<u>14.4. Packing group</u>	PG III
<u>14.5. Environmental hazards</u>	Not applicable
<u>14.6. Special precautions for user</u>	Not available.
NA Emergency Guidebook Numbers: 154	IMDG EMS: S-B F-A
<u>14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</u>	Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

OSHA Hazards: Health: Corrosive. Physical: Not applicable.

WHMIS Classification: Class E: Corrosive Material.
Class D, Division 2, Subdivision A: Very Toxic Material

Chemical Inventory Lists:	Status
TSCA:	Present
EINECS:	231-791-2 233-469-7
Canada(DSL/NDSL):	DSL
Japan:	(1)-399
Korea:	KE-35400 KE-32677
Australia:	Present
New Zealand:	Present
China:	Present
Philippines:	Present
Switzerland:	Not listed.

New Zealand GHS Classification: Not classified by this country.



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Japan GHS Classification: Not classified by this country.

Korea (MOL) GHS Classification: Not classified by this country.

Australia GHS Classification: Not classified by this country.

Taiwan GHS Classification: Not classified by this country.

Indonesia GHS Classification: Not classified by this country.

SARA 313: Listed for aqueous ammonia

Component Name:
Not listed.

Reportable Quantities: 5000 lbs (2270 Kg) [as Ammonium Bisulfite]

State Regulations: This product contains chemicals listed on the Massachusetts Substance List for Right-to-Know Law.
This product contains chemicals listed on the New Jersey Department of Health Hazard Right-to-Know Program Hazardous Substance List.
This product contains chemicals listed on the Pennsylvania Department of Labor and Industry Hazardous Substance List.

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Full text of R phrases in Section 3: R34: Causes burns.

Legend of abbreviations:

- ACGIH = American Conference on Governmental Industrial Hygienists.
- CAS = Chemical Abstracts Service.
- CERCLA = Comprehensive Environmental, Response, Compensation and Liability Act (1990).
- CFR = Code of Federal Regulations.
- DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
- EC = European Community.
- EEC = European Economic Community.
- EINECS = European Inventory of Existing Commercial chemical Substances.
- ELINCS = European List of Notified Chemical Substances.
- EU = European Union.
- GHS = Globally Harmonized System.
- LC = Lethal concentration.
- LD = Lethal dose.
- MOL = Ministry of Labor.
- NEMA = National Emergency Management Agency.
- NFPA = National Fire Protection Association.



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NIOSH = National Institute of Occupational Safety and Health.

NTP = National Toxicological Program.

OSHA = Occupational Safety and Health Administration

PEL = Permissible exposure limit.

RQ = Reportable quantity.

SARA = Superfund Amendments and Reauthorization Act of 1986.

TLV = Threshold limit value.

WHMIS = Workplace Hazardous Materials Information System.

Precautionary Statement: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

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