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 Benzoate Solution

Synonyms:
Benzoic acid ammonium salt solution

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

1.3. Details of the supplier of the safety data sheet
Manufacturer Information:
Vertellus LLC
P.O. Box 730,
Delaware Water Gap, PA
800-344-3426

Non-Emergency Phone Number:
1-800-344-3426

Non-Emergency Fax Number:
1-570-421-9012

E-Mail Address:
msds@vertellus.com

1.4. Emergency telephone number
Vertellus: 1-800-344-3426
CHEMTREC (USA): 1-800-424-9300 (collect calls accepted); (Int’l): 1-703-527-3887 (collect calls accepted; 011 prefix not needed)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
(According to Regulation (EC) No 1272/2008)
Specific Target Organ Systemic Toxicity Single Exposure Category 3
Serious Eye Damage/Eye Irritation Category 2
Skin Corrosion/Irritation Category 2
Acute Toxicity Oral Category 4

Signal Word:
Warning

Hazard Precautions:
H335 - May cause respiratory irritation.
H319 - Causes serious eye irritation.
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H315 - Causes skin irritation.
H302 - Harmful if swallowed.

2.2. Label elements

Hazard Symbols (Pictogram):

Prevention Precautions:
P271 - Use only outdoors or in a well-ventilated area.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.

First Aid Precautions:
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P321 - Specific treatment (see supplemental information on this label).
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P330 - Rinse mouth.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Storage Precautions:
P405 - Store locked up.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

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

Single Exposure Target Organs:
Not applicable

Repeated Exposure Target Organs:
Not applicable

(According to Directive 67/548/EEC)
Symbol: Xi, Xn
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Risk Phrases: R22: Harmful if swallowed.  
R36/37/38: Irritating to eyes, respiratory system and skin.  
S24/25: Avoid contact with skin and eyes.  
S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.  

2.3. Other hazards

Signs and Symptoms of Potential Overexposure: Breathing dusts of this substance may cause irritation of the respiratory tract. May be harmful if inhaled. Tightness of the chest Coughing Harmful if swallowed. Expected to cause gastrointestinal tract irritation with nausea and vomiting. Fatigue Contact with this material may cause skin irritation. Contact with eyes causes irritation.  
Primary Route(s) of Exposure: Inhalation. Ingestion. Skin contact. Eye contact. 
Medical Conditions Aggravated by Exposure: Not available. 

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Concentration (%)</th>
<th>EINECS / ELINCS</th>
<th>EU Symbol</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>85.000000</td>
<td>231-791-2</td>
<td>N/A</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Ammonium Benzoate</td>
<td>1863-63-4</td>
<td>15.000000</td>
<td>217-468-9</td>
<td>Xn, Xi</td>
<td>R22- R36/37/38</td>
</tr>
</tbody>
</table>

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: Wash with soap and water. Get medical attention if irritation develops or persists.  
Eye Contact: Rinse eyes immediately with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. GET MEDICAL ATTENTION. Flush eyes with water for at least 15 minutes; if irritation occurs seek medical attention. 
Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. Get medical attention immediately. 
Ingestion: If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Get medical attention. 

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

Acute: Breathing dusts of this substance may cause irritation of the respiratory tract. May be harmful if inhaled. Tightness of the chest Coughing Harmful if swallowed. Expected to cause gastrointestinal tract irritation with nausea and vomiting. Fatigue Contact with this material may cause skin irritation. Contact with eyes causes irritation.
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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: Dry chemical Water spray Carbon dioxide Alcohol foam

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: Toxic fumes may be released upon thermal decomposition such as carbon dioxide, carbon monoxide, nitrogen oxides, and ammonia.

Potential for Dust Explosion: Not known to be sensitive to mechanical impact or static discharges.

Special Flammability Hazards: Not applicable.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Evacuate area and fight fire from a safe distance.

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

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

6.3. Methods and material for containment and cleaning up

Containment Techniques and Clean-up Procedures: Ensure clean-up measures are in compliance with OSHA (29 CFR 1910.120).
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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: Keep container closed when not in use.
Dangerous Incompatibility Reactions: Strong oxidizing agents, Strong alkalies, acids, oxidizing agents, and iron metals.
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: Not established ACGIH TLV: Not established
Exposure Limits (UK): Not established

8.2. Exposure controls

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

Personal Protective Equipment: Wear impervious gloves (i.e., latex rubber), boots, work uniform and safety glasses. Impermeable gloves and safety goggles should be worn at all times.
Ventilation: 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.
Thermal Hazards: Not applicable.
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Additive or Synergistic Effects: None known.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance, State &amp; Odor</td>
<td>Liquid with a faint benzoic acid or ammonical odor.</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity or Density</td>
<td>1.270000</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>102g/100mL</td>
</tr>
<tr>
<td>pH</td>
<td>6.5 - 6.7</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point and Method</td>
<td>(Not applicable) (Not applicable)</td>
</tr>
<tr>
<td>Freezing / Melting Point</td>
<td>241 °F</td>
</tr>
<tr>
<td>Octanol / Water Coefficient</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammable Limits</td>
<td>Not applicable (LEL) – Not applicable (UEL)</td>
</tr>
</tbody>
</table>

9.2. Other information

Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity
Not classified as dangerously reactive.

10.2. Chemical stability
Stable

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur

10.4. Conditions to avoid
Incompatibles. Elevated ambient temperatures.

10.5. Incompatible materials
Strong oxidizing agents Strong alkalies, acids, oxidizing agents, and iron metals.

10.6. Hazardous decomposition products
Products of incomplete combustion may include CO, CO2, NOx, and dense smoke.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral LD₅₀</td>
<td>Oral LD50 (rat) 825 mg/kg</td>
</tr>
<tr>
<td>Acute Dermal LD₅₀</td>
<td>Oral LD50 (mouse) 1440 mg/kg</td>
</tr>
<tr>
<td>Acute Inhalation LC₅₀</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
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Skin Irritation: Irritating to the skin.
Skin Sensitization: Not available.
Eye Irritation: Moderately irritating to eyes.
Target Organs: No data available.
Carcinogenicity: No data available.
Teratogenicity: Not available.
Reproduction: No data available.
Neurotoxicity: Symptoms of toxicity in rats and mice included:
Peripheral nerve and sensation - spastic paralysis with or without sensory change.
Behavioral - altered sleep time (including change in righting reflex); somnolence (general depressed activity).
In rabbits, a dose of 400 mg/kg (intravenous) produced symptoms of behavioral excitement.

Mutagenicity: Not available.
Additional Toxicity Information: Toxicological data is for ammonium benzoate solid.

SECTION 12: Ecological information

12.1. Toxicity Not available.
12.2. Persistence and degradability No data
12.3. Bioaccumulative potential No data
12.4. Mobility in soil No data
12.5. Results of PBT and vPvB assessment Not available.
12.6. Other adverse effects No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
US EPA Waste Number: Not applicable
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.
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SECTION 14: Transport information

14.1. UN number
Not applicable

14.2. UN proper shipping name
Chemicals, n.o.s. (Ammonium Benzoate, water)

14.3. Transport hazard class(es)
Not applicable

14.4. Packing group
Not applicable

14.5. Environmental hazards
Not applicable

14.6. Special precautions for user
Not available.

- NA Emergency Guidebook Numbers: Not applicable
- IMDG EMS: Not applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

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

- OSHA Hazards: Health: Irritant. Physical: Not applicable.

WHMIS Classification: Class D, Division 2, Subdivision B: Toxic Material.

Chemical Inventory Lists: Status
- TSCA: Present
- EINECS: 231-791-2; 217-468-9
- Canada(DSL/NDSL): DSL
- Japan: (3)-1459; (3)-1397; (1)-391
- Korea: KE-35400; KE-02699
- Australia: Present
- New Zealand: Present
- China: Present
- Philippines: Present
- Switzerland: Not listed.

New Zealand GHS Classification: Not classified by this country.

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.
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Taiwan GHS Classification: Not classified by this country.

Indonesia GHS Classification: Not classified by this country.

SARA 313: Listed (as aqueous ammonia).

Reportable Quantities: 5000 lbs (for ammonium benzoate)

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Full text of R phrases in Section 3:

R22: Harmful if swallowed.
R36/37/38: Irritating to eyes, respiratory system and skin.

Legend of abbreviations:

ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
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.
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.
TLV = Threshold limit value.
WHMIS = Workplace Hazardous Materials Information System.
SAFETY DATA SHEET

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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