



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Material name** AMMONIUM CHLORIDE  
**Version #** 01  
**Revision date** 09-28-2011  
**CAS #** 12125-02-9  
**Product Codes** J.T.Baker: 0660, 0661  
Macron: 3364, 3384  
**Synonym(s)** Sal ammoniac; Ammonium muriate  
**Manufacturer** Avantor Performance Materials, Inc.  
**Address** 3477 Corporate Parkway  
Suite #200  
Center Valley, PA 18034  
US  
**Customer Service** 855-282-6867  
**24 Hour Emergency** 908-859-2151  
**Chemtrec** 800-424-9300

## 2. Hazards Identification

**Emergency overview** WARNING  
May be harmful if swallowed. Irritating to eyes, respiratory system and skin.

**OSHA regulatory status** This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

**Potential health effects**  
**Routes of exposure** Inhalation. Skin contact. Eye contact. Ingestion.  
**Eyes** Irritating to eyes. Eye may become red, tear, and become painful.  
**Skin** Dust or powder may irritate the skin.  
**Inhalation** Inhalation of dusts may cause respiratory irritation.  
**Ingestion** May cause irritation of the gastrointestinal tract. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Target organs** Eyes. Skin. Respiratory system.

**Potential environmental effects** Toxic to aquatic organisms.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
AMMONIUM CHLORIDE	12125-02-9	99 - 100

## 4. First Aid Measures

**First aid procedures**  
**Eye contact** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if irritation develops and persists.  
**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.  
**Inhalation** Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.  
**Ingestion** Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person.

**Notes to physician** Treat symptomatically.

**General advice** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

---

**Flammable properties** This product is not flammable. Exposure to fire can generate toxic fumes.

**Extinguishing media**

**Suitable extinguishing media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** None known.

**Protection of firefighters**

**Protective equipment and precautions for firefighters** Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

**Specific methods** In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

**Hazardous combustion products** Combustion generates toxic fumes of ammonia. Hydrogen Chloride (HCl). Nitrogen Oxides (NOx).

## 6. Accidental Release Measures

---

**Personal precautions** Keep unnecessary personnel away. Keep upwind. Ventilate the area. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Do not discharge into drains, water courses or onto the ground.

**Methods for containment** If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.

**Methods for cleaning up**

Avoid dust formation.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Large Spills: Collect dust or particulates using a vacuum cleaner with a HEPA filter. Reduce airborne dust and prevent scattering by moistening with water.

Never return spills in original containers for re-use. Clean contaminated surface thoroughly. Clean up in accordance with all applicable regulations.

## 7. Handling and Storage

---

**Handling** Keep formation of airborne dusts to a minimum. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Storage** Keep container tightly closed. Store in a well-ventilated place.

## 8. Exposure Controls / Personal Protection

---

### ACGIH

Material	Type	Value	Form
AMMONIUM CHLORIDE (12125-02-9)	STEL	20.0000 mg/m <sup>3</sup>	Fume.
	TWA	10.0000 mg/m <sup>3</sup>	Fume.

**Engineering controls** Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Use tight fitting goggles if dust is generated.
<b>Skin protection</b>	Wear appropriate chemical resistant clothing.
<b>Respiratory protection</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: High-efficiency particulate respirator with full facepiece.
<b>General hygiene considerations</b>	Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical & Chemical Properties

---

<b>Appearance</b>	Powder.
<b>Color</b>	White.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>pH</b>	5 - 5.5 Aqueous solution
<b>Melting point</b>	640.4 °F (338 °C)
<b>Freezing point</b>	640.4 °F (338 °C)
<b>Boiling point</b>	968 °F (520 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Specific gravity</b>	1.5274
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	370 g/l
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	640.4 °F (338 °C)
<b>Molecular weight</b>	53.5 g/mol
<b>Molecular formula</b>	Cl-H4-N

## 10. Chemical Stability & Reactivity Information

---

<b>Chemical stability</b>	Stable under normal temperature conditions. The substance is hygroscopic and will absorb water by contact with the moisture in the air.
<b>Conditions to avoid</b>	Excessive heat. Moisture.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong acids. Potassium. Nitrates. Copper. Halogens.
<b>Hazardous decomposition products</b>	Ammonia. Nitrogen oxides (NOx). Hydrogen chloride.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

---

### Toxicological data

#### Product

AMMONIUM CHLORIDE (12125-02-9)

#### Test Results

Acute Oral LD50 Rat: 1650 mg/kg

<b>Sensitization</b>	Not a skin sensitizer.
<b>Acute effects</b>	May be harmful if swallowed.
<b>Local effects</b>	Irritating to eyes, respiratory system and skin.
<b>Chronic effects</b>	None known.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Skin corrosion/irritation</b>	May irritate and cause redness and pain.
<b>Epidemiology</b>	No epidemiological data is available for this product.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Neurological effects</b>	None known.
<b>Reproductive effects</b>	Contains no ingredient listed as toxic to reproduction
<b>Teratogenicity</b>	No data available to indicate product or any components present at greater than 0.1% may cause birth defects.
<b>Symptoms and target organs</b>	Irritant effects. Shortness of breath.

## 12. Ecological Information

---

### Ecotoxicological data

#### Product

AMMONIUM CHLORIDE (12125-02-9)

#### Test Results

EC50 American lobster (*Homarus americanus*): 0.237 mg/l  
48.00 hours

<b>Ecotoxicity</b>	Toxic to aquatic life.
<b>Persistence and degradability</b>	Expected to be readily biodegradable.
<b>Partition coefficient (n-octanol/water)</b>	Not available

## 13. Disposal Considerations

---

<b>Disposal instructions</b>	Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.
<b>Contaminated packaging</b>	Offer rinsed packaging material to local recycling facilities. Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

---

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

---

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration**

AMMONIUM CHLORIDE (CAS 12125-02-9) 1.0 %

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance**

AMMONIUM CHLORIDE (CAS 12125-02-9) Listed.

**CERCLA (Superfund) reportable quantity**

AMMONIUM CHLORIDE: 5000.0000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories** Immediate Hazard - Yes  
 Delayed Hazard - No  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

**Section 311 hazardous chemical** Yes

**Clean Water Act (CWA)** Hazardous substance

**Food and Drug Administration (FDA)** Total food additive  
 Direct food additive  
 GRAS food additive

**Inventory status**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

AMMONIUM CHLORIDE (CAS 12125-02-9) Listed.

**Saf-T-Data** Health: 2 - Moderate  
 Flammability: 0 - None  
 Reactivity: 1 - Slight  
 Contact: 2 - Moderate  
 Lab Protective Equip: B - GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES  
 Storage Color Code: G - Green (General Storage)

**16. Labeling Info**

**Label Hazard Warning** WARNING

May be harmful if swallowed. Irritating to eyes, respiratory system and skin.

**Label Precautions** Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.

**Label First Aid**

Immediately flush eyes with plenty of water for at least 15 minutes. Flush skin thoroughly with water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if symptoms persist. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

**17. Other Information**

---

**NFPA ratings**

Health: 2  
Flammability: 0  
Instability: 0

**Disclaimer**

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED "AS IS," AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.

**Issue date**

09-28-2011