



# MATERIAL SAFETY DATA SHEET

According to the UN GHS revision 9

Version: 1.0

Creation Date: July 15, 2019

Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Ammonium chloride

### 1.2 Other means of identification

Product number -

Other names Ammonium chloride; ammonia chloride; amine hydrochloride

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

### 1.4 Supplier's details

Company Shandong Yili-Spring Chemical Industry Co., Ltd.

Address 1016, Xinyue Fortune Center, Zouping County, Binzhou City, Shandong

Telephone 86-543-4865599

### 1.5 Emergency phone number

Emergency phone number +86 15505433527

Service hours Monday to Friday, 8am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Eye irritation, Category 2

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)****Signal word**

Warning

**Hazard statement(s)**

H302 Harmful if swallowed

H319 Causes serious eye irritation

**Precautionary statement(s)****Prevention**

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

**Response**

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

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

**Storage**

none

**Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**2.3 Other hazards which do not result in classification**

no data available

**SECTION 3: Composition/information on ingredients****3.1 Substances**

| Chemical name     | Common names and synonyms | CAS number | EC number | Concentration |
|-------------------|---------------------------|------------|-----------|---------------|
| Ammonium chloride | Ammonium chloride         | 12125-02-9 | 235-186-4 | 100%          |

**SECTION 4: First-aid measures****4.1 Description of necessary first-aid measures****If inhaled**

Fresh air, rest. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower.

**Following eye contact**



First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### **Following ingestion**

Rinse mouth. Give one or two glasses of water to drink. Rest. Refer for medical attention .

### **4.2 Most important symptoms/effects, acute and delayed**

Inhalation of fumes irritates respiratory passages. Ingestion irritates mouth and stomach. Fumes are irritating to eyes. Contact with skin may cause irritation. (USCG, 1999)

### **4.3 Indication of immediate medical attention and special treatment needed, if necessary**

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Ammonia and related compounds

---

## **SECTION 5: Fire-fighting measures**

### **5.1 Suitable extinguishing media**

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Specific hazards arising from the chemical**

Special Hazards of Combustion Products: Toxic and irritating ammonia and hydrogen chloride gases may form in fire. Behavior in Fire: May volatilize and condense on cool surfaces. (USCG, 1999)

### **5.3 Special protective actions for fire-fighters**

In case of fire in the surroundings, use appropriate extinguishing media.

---

## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. Wash away remainder with plenty of water.

### **6.2 Environmental precautions**

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. Wash away remainder with plenty of water.

### **6.3 Methods and materials for containment and cleaning up**



Accidental release measures. Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.; Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.; Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

---

## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **7.2 Conditions for safe storage, including any incompatibilities**

Separated from ammonium nitrate and potassium chlorate. Dry. Keep container tightly closed in a dry and well-ventilated place. Hygroscopic.

---

## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

TLV: 10 mg/m<sup>3</sup>, as TWA; 20 mg/m<sup>3</sup> as STEL

#### **Biological limit values**

no data available

### **8.2 Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **8.3 Individual protection measures, such as personal protective equipment (PPE)**

#### **Eye/face protection**

Wear safety spectacles.

#### **Skin protection**

Protective gloves.

#### **Respiratory protection**

Use ventilation (not if powder), local exhaust or breathing protection.

#### **Thermal hazards**



---

no data available

---

## SECTION 9: Physical and chemical properties and safety characteristics

|  |  |
|--|--|
| Physical state   | Solid. Fine crystalline powder, homogeneous.               |
| Colour   | White.   |
| Odour  | Odorless   |
| Melting point/freezing point                             | 338 °C.  |
| Boiling point or initial boiling point and boiling range | 520°C(lit.)  |
| Flammability   | Noncombustible Solid                                       |
| Lower and upper explosion limit/flammability limit       | Not flammable  |
| Flash point  | 75°C(lit.)   |
| Auto-ignition temperature                                | no data available  |
| Decomposition temperature                                | 338°C  |
| pH   | pH of aqueous solution (25 deg C): 1% 5.5; 3% 5.1; 10% 5.0 |
| Kinematic viscosity                                      | no data available  |
| Solubility   | 37 % (NIOSH, 2016)   |
| Partition coefficient n-octanol/water                    | log Pow = -3.2. Temperature:25 °C.                         |
| Vapour pressure  | 1.3 hPa. Temperature:160 °C.                               |
| Density and/or relative density                          | 1.53. Temperature:25 °C.                                   |
| Relative vapour density                                  | 1.9 (vs air)   |
| Particle characteristics                                 | no data available  |

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Decomposes on heating. This produces toxic and irritating fumes (nitrogen oxides, ammonia and hydrogen chloride). The solution in water is a weak acid. Reacts violently with ammonium nitrate and potassium chlorate. This generates fire and explosion hazard. Attacks copper and its compounds.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Acidic salts, such as AMMONIUM CHLORIDE, are generally soluble in water. The resulting solutions contain moderate concentrations of hydrogen ions and have pH's of less than 7.0. They react as acids to neutralize bases. These neutralizations generate heat, but less or far less than is generated by neutralization of inorganic acids,



inorganic oxoacids, and carboxylic acid. They usually do not react as either oxidizing agents or reducing agents but such behavior is not impossible. Many of these compounds catalyze organic reactions.

## 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

Incompatible materials: Strong acids, strong bases, strong oxidizing agents.

## 10.6 Hazardous decomposition products

Melting point: 338 deg C (sublimes)

---

# SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat (male/female) - 1 410 mg/kg bw. Remarks:Slope factor = 1.36.
- Inhalation: no data available
- Dermal: LD50 - rat (male/female) - > 2 000 mg/kg bw.

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract.

### STOT-repeated exposure

no data available



---

### Aspiration hazard

Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly.

---

## SECTION 12: Ecological information

### 12.1 Toxicity

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 42.91 mg/L - 96 h.  
Remarks: Ammonium chloride.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Ceriodaphnia acanthina* - 98.5 mg/L - 48 h.  
Remarks: Ammonium chloride.
- Toxicity to algae: EC50 - *Chlorella vulgaris* - 2 700 mg/L - 18 d.
- Toxicity to microorganisms: EC20 - activated sludge, domestic - 850 mg/L - 30 min.  
Remarks: Respiration rate.

### 12.2 Persistence and degradability

no data available

### 12.3 Bioaccumulative potential

no data available

### 12.4 Mobility in soil

no data available

### 12.5 Other adverse effects

no data available

---

## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.



## SECTION 14: Transport information

### 14.1UN Number

ADR/RID: Not dangerous goods. (For IMDG: Not dangerous goods. (For IATA: Not dangerous goods. (For  
reference only, please check.) reference only, please check.) reference only, please check.)

### 14.2UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For IMDG: Not dangerous goods. (For IATA: Not dangerous goods. (For  
reference only, please check.) reference only, please check.) reference only, please check.)

### 14.3Transport hazard class(es)

ADR/RID: Not dangerous goods. (For IMDG: Not dangerous goods. (For IATA: Not dangerous goods. (For  
reference only, please check.) reference only, please check.) reference only, please check.)

### 14.4Packing group, if applicable

ADR/RID: Not dangerous goods. (For IMDG: Not dangerous goods. (For IATA: Not dangerous goods. (For  
reference only, please check.) reference only, please check.) reference only, please check.)

### 14.5Environmental hazards

ADR/RID: Yes

IMDG: Yes

IATA: Yes

### 14.6Special precautions for user

no data available

### 14.7Transport in bulk according to IMO instruments

no data available

## SECTION 15: Regulatory information

### 15.1Safety, health and environmental regulations specific for the product in question

| Chemical name  | Common names and synonyms | CAS number | EC number   |
|--|---------------------------|------------|-------------|
| Ammonium chloride  | Ammonium chloride         | 12125-02-9 | 235-186-4   |
| European Inventory of Existing Commercial Chemical Substances (EINECS) |                           |            | Listed.     |
| EC Inventory   |                           |            | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory            |                           |            | Listed.     |
| China Catalog of Hazardous chemicals 2015                              |                           |            | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC)                             |                           |            | Listed.     |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)     |                           |            | Listed.     |
| Vietnam National Chemical Inventory                                    |                           |            | Listed.     |





|  |         |
|--|---------|
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) | Listed. |
| Korea Existing Chemicals List (KECL)                                     | Listed. |

## SECTION 16: Other information

### Information on revision

Creation Date July 15, 2019

Revision Date July 15, 2019

### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*