



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Date of issue: 05/12/2014

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number	AX1270
Product name	Ammonium Chloride GR ACS
CAS-No.	12125-02-9

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Oral, H302  
Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Warning

*Hazard Statements*  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.

*Precautionary Statements*

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

## OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

## Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

Formula	NH <sub>4</sub> Cl	H <sub>4</sub> CIN (Hill)
Molar mass	53.49 g/mol	

### Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

*ammonium chloride (>= 90 % - <= 100 % )*

12125-02-9

Exact percentages are being withheld as a trade secret.

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## SECTION 4. First aid measures

### Description of first-aid measures

*Inhalation*

After inhalation: fresh air.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

*Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

### Most important symptoms and effects, both acute and delayed

irritant effects

The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, hemolysis.

### Indication of any immediate medical attention and special treatment needed

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

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### *Suitable extinguishing media*

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

### *Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapors.

Fire may cause evolution of:  
nitrogen oxides, Hydrogen chloride gas

### **Advice for firefighters**

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6. Accidental release measures**

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

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### **Environmental precautions**

Do not empty into drains.

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

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## **SECTION 7. Handling and storage**

### **Precautions for safe handling**

Observe label precautions.

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

Tightly closed. Dry.

Store at room temperature.

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## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>ammonium chloride 12125-02-9</i>			
ACGIH	Time Weighted Average (TWA):	10 mg/m <sup>3</sup>	Form of exposure: Fume.
	Short Term Exposure Limit (STEL):	20 mg/m <sup>3</sup>	Form of exposure: Fume.
NIOSH/GUIDE	Recommended exposure limit (REL):	10 mg/m <sup>3</sup>	Form of exposure: Fume.
	Short Term Exposure Limit (STEL):	20 mg/m <sup>3</sup>	Form of exposure: Fume.
Z1A	Time Weighted Average (TWA):	10 mg/m <sup>3</sup>	Form of exposure: Fume.
	Short Term Exposure Limit (STEL):	20 mg/m <sup>3</sup>	Form of exposure: Fume.

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

### *Hygiene measures*

Change contaminated clothing. Application of skin- protective barrier cream recommended.  
Wash hands after working with substance.

### *Eye/face protection*

Safety glasses

### *Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

### *Other protective equipment:*

protective clothing

### *Respiratory protection*

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## SECTION 9. Physical and chemical properties

Physical state

solid

Color

colorless

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Odor	odorless
Odor Threshold	not applicable
pH	4.5 - 5.5 at 50 g/l 68 °F (20 °C)
Melting point	335 °C (sublimed)
Boiling point/boiling range	not applicable
Flash point	not applicable
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	67 hPa at 482 °F (250 °C)  1.3 hPa at 86 °F (30 °C)
Relative vapor density	No information available.
Density	1.52 g/cm <sup>3</sup> at 68 °F (20 °C)
Relative density	No information available.
Water solubility	372 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: -4.37 (calculated) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	not applicable
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.

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Oxidizing properties	none
Ignition temperature	> 752 °F (> 400 °C)
Bulk density	ca.500 kg/m <sup>3</sup>

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### SECTION 10. Stability and reactivity

#### Reactivity

See below

#### Chemical stability

sublimable

#### Possibility of hazardous reactions

Violent reactions possible with:

alkali hydroxides, acids

Risk of ignition or formation of inflammable gases or vapors with:

halogen-halogen compounds, alkalines, alkaline substances

Risk of explosion with:

nitrates, chlorates, Heavy metal salts, nitrites, Hydrogen cyanide (hydrocyanic acid), Chlorine, silver salt, Strong oxidizing agents

#### Conditions to avoid

no information available

#### Incompatible materials

Aluminum, Lead, Iron, Copper, copper compounds

#### Hazardous decomposition products

in the event of fire: See section 5.

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### SECTION 11. Toxicological information

#### Information on toxicological effects

##### *Likely route of exposure*

Eye contact, Skin contact, Ingestion

##### *Target Organs*

Eyes

Skin

Respiratory system

##### *Acute oral toxicity*

LD50 rat: 1,410 mg/kg (External MSDS)

absorption

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

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## *Acute inhalation toxicity*

Symptoms: Possible damages:, mucosal irritations

## *Skin irritation*

rabbit

Result: No irritation

(External MSDS)

## *Eye irritation*

rabbit

Result: Eye irritation

(External MSDS)

Causes serious eye irritation.

## *Sensitization*

In animal experiments:

Result: negative

(External MSDS)

## *Genotoxicity in vitro*

Mutagenicity (mammal cell test): micronucleus.

Result: negative

(IUCLID)

Ames test

Result: negative

(IUCLID)

## *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

## *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

## *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

## **Carcinogenicity**

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## **Further information**

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The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, hemolysis. Handle in accordance with good industrial hygiene and safety practice.

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### SECTION 12. Ecological information

#### Ecotoxicity

##### *Toxicity to fish*

LC50 Cyprinus carpio (Carp): 209 mg/l; 96 h (IUCLID)

##### *Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): > 100 mg/l; 48 h (Lit.)

#### Persistence and degradability

##### *Biodegradability*

The methods for determining the biological degradability are not applicable to inorganic substances.

#### Bioaccumulative potential

##### *Partition coefficient: n-octanol/water*

log Pow: -4.37

(calculated)

(Lit.) Bioaccumulation is not expected.

#### Mobility in soil

No information available.

##### *Additional ecological information*

Discharge into the environment must be avoided.

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### SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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### SECTION 14. Transport information

#### Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

#### Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

#### Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.



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## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Harmful if swallowed.

Eye irritant

Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Acute Health Hazard

Chronic Health Hazard

#### SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

##### *Ingredients*

ammonium chloride

12125-02-9

100 %

#### SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

##### *Ingredients*

ammonium chloride

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

##### *Ingredients*

ammonium chloride

#### DEA List I

Not listed

#### DEA List II

Not listed

### US State Regulations

#### Massachusetts Right To Know

##### *Ingredients*

ammonium chloride

#### Pennsylvania Right To Know

##### *Ingredients*

ammonium chloride

#### New Jersey Right To Know

##### *Ingredients*

ammonium chloride

#### California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer,

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birth, or any other reproductive defects.

## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Full text of H-Statements referred to under sections 2 and 3.

H302 Harmful if swallowed.  
H319 Causes serious eye irritation.

### Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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