

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Substance name	: Ammonium Citrate Dibasic
CAS-No.	: 3012-65-5
Formula	: $(\text{NH}_4)_2\text{HC}_6\text{H}_5\text{O}_7$

1.2. Recommended use and restrictions on use

Use of the substance/mixture	: Analytical reagent, electronic etching, and other high purity applications
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1.3. Supplier

Manufacturer

Jost Chemical Co.
8150 Lackland Rd.
Saint Louis, Missouri 63114
T 314-428-4300 - F 314-428-4366
sds@jostchemical.com - www.jostchemical.com

1.4. Emergency telephone number

Emergency number	: For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night United States and Canada: 1-800-424-9300 / +1 703-527-3887 Global: +1 703-741-5970
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3	H335	May cause respiratory irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H319 - Causes serious eye irritation H335 - May cause respiratory irritation
Precautionary statements (GHS-US)	: P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves, eye protection. P304+P340 - If inhaled: Remove person to fresh air and keep 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 P312 - Call a poison center or doctor if you feel unwell P337+P313 - If eye irritation persists: Get medical advice/attention. P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

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2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Ammonium Citrate Dibasic	(CAS-No.) 3012-65-5	100	Eye Irrit. 2, H319 STOT SE 3, H335

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : Causes serious eye irritation.
- Symptoms/effects after inhalation : May cause respiratory irritation.
- Symptoms/effects after skin contact : Irritation.
- Symptoms/effects after eye contact : Irritation of the eye tissue.
- Symptoms/effects after ingestion : Diarrhea. Headache. Nausea. Vomiting.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.
- Unsuitable extinguishing media : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Specific hazards arising from the chemical

- Fire hazard : DIRECT FIRE HAZARD: Not easily combustible. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD: Heating increases the fire hazard.
- Explosion hazard : DIRECT EXPLOSION HAZARD: Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.
- Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood close doors and windows.
- Firefighting instructions : Dilute toxic gases with water spray.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Contain the extinguishing fluids by bunding.
- 6.1.1. For non-emergency personnel**
- Protective equipment : Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighborhood close doors and windows. In case of dust production: stop engines and no smoking. In case of dust production: no naked flames or sparks. Dust: spark-/explosion proof appliances/lighting equipment.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Avoid contact with skin and eyes. Do not breathe dust.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Powdered form: no compressed air for pumping over spills.
- Methods for cleaning up : Prevent dust cloud formation. Scoop solid spill into closing containers. Powdered: do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid raising dust. Keep away from naked flames/heat. In finely divided state: use spark-/explosion proof appliances. Finely divided: keep away from ignition sources/sparks. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Powdered form: no compressed air for pumping over.
- Hygiene measures : Observe normal hygiene standards. Keep container tightly closed.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Provide local exhaust or general room ventilation.
- Storage conditions : Store in a clean, dry warehouse in the original unopened containers.
- Incompatible products : Strong bases. Strong acids. Oxidizing agent.
- Incompatible materials : Sources of ignition.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases.
- Storage area : Keep container in a well-ventilated place. Meet the legal requirements. Keep out of direct sunlight.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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Not applicable

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8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Dust production: dust mask with filter type P2. Gloves. Safety glasses.

Materials for protective clothing:

Wear suitable protective clothing, gloves and eye/face protection

Hand protection:

Gloves

Eye protection:

Safety glasses. In case of dust production: protective goggles

Skin and body protection:

Protective clothing

Respiratory protection:

Dust production: dust mask with filter type P1

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : White fine granular product.
Color : Colorless to white
Odor : Mild odor Ammonia odor
Odor threshold : No data available
pH : 4.3 (2.2 %)
Melting point : No data available
Freezing point : Not applicable
Boiling point : No data available
Flash point : Not applicable
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : Non flammable.
Vapor pressure : No data available
Relative vapor density at 20 °C : Not applicable
Relative density : 1.5
Specific gravity / density : 1480 kg/m³
Molecular mass : 226.19 g/mol
Solubility : Soluble in water.
Water: 50 g/100ml
Log Pow : -2.84 (Estimated value)
Auto-ignition temperature : Not applicable
Decomposition temperature : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

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Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

VOC content	: 0 %
Other properties	: Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing agent. Strong acids. Strong bases.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: 4.3 (2.2 %)
Serious eye damage/irritation	: Causes serious eye irritation. pH: 4.3 (2.2 %)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause respiratory irritation.

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Specific target organ toxicity – single exposure	May cause respiratory irritation.
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Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Causes serious eye irritation.
Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: Diarrhoea. Headache. Nausea. Vomiting.

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SECTION 12: Ecological information

12.1. Toxicity

- Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
- Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- Ecology - water : Mild water pollutant (surface water). Insufficient data available on ecotoxicity. pH shift.

12.2. Persistence and degradability

Ammonium Citrate Dibasic (3012-65-5)

Persistence and degradability	Biodegradable in water.
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12.3. Bioaccumulative potential

Ammonium Citrate Dibasic (3012-65-5)

Log Pow	-2.84 (Estimated value)
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Bioaccumulative potential	Not bioaccumulative.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

- Regional legislation (waste) : LWCA (the Netherlands): KGA category 03.
- Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
- Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of the small quantities as household waste. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent.
- Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

- Proper Shipping Name (DOT) : Not regulated for transport
- Other information : No supplementary information available.

Transportation of Dangerous Goods

- Proper Shipping Name (Transportation of Dangerous Goods) : Not regulated for transport

Transport by sea

- Proper Shipping Name (IMDG) : Not regulated for transport

Air transport

- Proper Shipping Name (IATA) : Not regulated for transport

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SECTION 15: Regulatory information

15.1. US Federal regulations

Ammonium Citrate Dibasic (3012-65-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ 5000 lb

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CERCLA RQ 5000 lb

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

Ammonium Citrate Dibasic (3012-65-5)

State or local regulations U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Component	State or local regulations
Ammonium Citrate Dibasic(3012-65-5)	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 06/06/2018

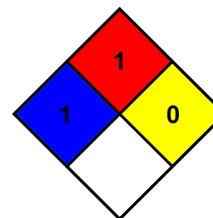
Full text of H-phrases:

H319	Causes serious eye irritation
H335	May cause respiratory irritation

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (HazCom 2012)

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product