

## Material Safety Data Sheet

### Ammonium citrate, dibasic

#### Section 1 – PRODUCT AND COMPANY IDENTIFICATION

<b>1. Product Identifier</b>	Ammonium citrate, dibasic; Diammonium citrate
<b>2. Recommended Use &amp; Uses advised against</b>	Uses for Laboratory and R&D only
<b>3. Information of Supplier</b>	SAMCHUN PURE CHEMICAL CO.,LTD ADDRESS; (Mogok-dong) 117, Sandan-ro 16Beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea Emergency Phone; 82-31-668-0700/3 Department; Safety & Environment dep. Web site; <a href="http://www.samchun.com">http://www.samchun.com</a>

#### Section 2 – HAZARDS and DANGER IDENTIFICATION

<b>1.GHS Classification· Identification</b>	Skin Corrosion/Skin Irritation	Category2
	Serious Eye Damage/Eye Irritation	Category2
	Specific Target Organ Toxicity (Single Exposure)	Category3- Respiratory tract irritation

#### 2. Label and Mark including Precautionary Statement

◦Label elements



◦Signal word

Warning

◦Hazard · Danger statement

H315 Causes skin irritation  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation

◦Precautionary statement

**Precaution**

P264 Wash ... thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P271 Use only outdoors or in a well-ventilated area.

**Measures**

P321 Specific treatment (see Section 4. on this label).  
P302+P352 IF ON SKIN: Wash with plenty of water  
P332+P313 If skin irritation occurs: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash before reuse  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P337+P313 If eye irritation persists: Get medical advice/attention.  
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.

**Storage**

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

**Dispose**

P501 Dispose of contents/container under related law and regulations

#### 3. Other Hazard-Risk which are not included in the classification criteria

NFPA index(0~4steps) : Health=1, Fire=1, Reaction=0

**Section 3 – COMPOSITION AND INFORMATION ON INGREDIENTS**

Chemical Name	Other Name	CAS No.	Content (%)
Ammonium citrate, dibasic	Diammonium citrate	3012-65-5	100

**Section 4 – FIRST AID MEASURES**

- |   |   |
|---|---|
| <b>1. Eye Contact</b>   | Rinse with plenty of water for at least 15minutes and get medical attention immediately.                                |
| <b>2. Skin Contact</b>  | Take off contaminated cloths and shoes immediately, wash with plenty of water and soap for at least 15minutes.          |
| <b>3. Inhalation</b>  | Move victim to fresh air. If breathing is difficult, give artificial respiration and get medical attention immediately. |
| <b>4. Ingestion</b>   | Do not induce vomiting. Get medical advice/attention immediately.   |
| <b>5. Immediate medical attention and Notes for physician</b> | Keep the medical personnel aware of the materials involved and take protective action.                                  |

**Section 5 – FIRE-FIGHT MEASURES**

- |  |   |
|--|---|
| <b>1. Suitable extinguish media</b>                                      | Powder extinguishing agents, foam extinguishing agents, carbon dioxide, water spray<br>Unsuitable extinguishing media: N/A  |
| <b>2. Special hazards arising from the substance</b>                     | Thermal decomposition products: ammonia, nitrogen oxides, carbon  |
| <b>3. Special protective equipment and Precautions for fire-fighters</b> | Move containers from fire area if you can do it without risk. When extinguishing a fire, be sure to wear personal protective equipment. If it is not possible to extinguish the fire, withdraw immediately. Keep containers cool by spraying with water for a long time, even after the fire is out. Isolate hazardous areas and deny access to people. |

**Section 6 – ACCIDENTAL RELEASE MEASURES**

- |  |  |
|--|--|
| <b>1. Personal precautions and Emergency procedures</b>        | Do not touch spilled material. Avoid inhalation and skin contact. In case of confined space, wear air respirator and ventilate and remove all sources of ignition. |
| <b>2. Environmental precautions</b>                            | Minimize leak/spill, collect and keep leak/spill in container  |
| <b>3. Methods and material for containment and cleaning up</b> | Remove residue with high-efficient cleaner   |

**Section 7 – HANDING AND STORAGE**

- |   |  |
|---|--|
| <b>1. Precautions for safe Handling</b> | Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. All containers should be grounded.<br>Minimize dust generation and accumulation |
| <b>2. Conditions for safe storage</b>   | Store in a dry, cool and well-ventilated place.<br>Keep away from incompatible materials.  |

**Section 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION****1. Occupational exposure limit, biological exposure limit****National law of Safety management of**

N/A

- |  |   |
|--|---|
| <b>2. Appropriate Engineering controls</b> | Ensure compliance with applicable exposure limits and operate local exhaust ventilation when working.   |
| <b>3. Personal protective equipment</b>    |   |
| ◦Respiratory protection                    | Because it is concerned about the harmfulness of human body due to chemical substances, it is recommended to wear respiratory protective equipment with dust mask or dust filter in consideration of physical and chemical characteristics when handling. |

Respiratory protection should be certified by the Health and Safety Authority.

It is concerned about the harmfulness of the human body depending on the working environment, it should wear respirator, air-purifying respirator

- Eye-protection** Wear safety glasses when handling as they may cause human health hazards due to chemicals. Install eye wash facilities and emergency eyewash stations near chemical handling sites
- Hand protection** Wear safety gloves when handling, as it is likely to harm human health due to chemicals
- Skin and body protection** Wear chemical protective clothing when handling, as it is likely to harm human health due to chemicals

#### Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

<b>1.Physical state and color</b>	Solid(White)	<b>2.Odor</b>	Odorless
<b>3.threshold</b>	N/A	<b>4. pH</b>	4.3
<b>5.Melting/Freezing point</b>	Decomposition	<b>6.Boiling point/range</b>	N/A
<b>7. Flashing point</b>	N/A	<b>8. Evaporation speed</b>	N/A
<b>9. Flammability(solid,gas)</b>	N/A	<b>10. Flash or Explosion limit upper / lower</b>	N/A
<b>11. Vapor pressure</b>	N/A	<b>12. Solubility</b>	Soluble
<b>13. Vapor density</b>	N/A	<b>14.Gravity</b>	1.5
<b>15. n-octanol-water Partition coefficient</b>	N/A	<b>16. Self ignition temp(°C)</b>	N/A
<b>17. Cracking temp(°C)</b>	N/A	<b>18. Viscosity</b>	N/A
<b>19. Molecular Weight</b>	226.19		

#### Section 10 – STABILITY AND REACTIVITY

- 1.Chemical stability and Possibility of Hazardous Reactions** Stable under normal temp. and pressure  
Not polymerize
- 2. Conditions to Avoid** Avoid heat, flames, sparks and other sources of ignition.  
Avoid contact with incompatible materials
- 3. Incompatible Materials** Oxidizer
- 4. Hazardous Decomposition Products** Thermal decomposition products: ammonia, nitrogen oxides, carbon

#### Section 11 – TOXICOLOGICAL INFORMATION

##### 1. Information on the likely routes of exposure.

Short term exposure may cause irritation, chest pain, wheezing, lungs, nausea, vomiting, burns and congestion.

##### 2. Health hazard information

- Acute toxic** Oral : N/A  
Skin : N/A  
Inhalation : N/A
- Serious skin corrosive / irritation** Causes skin irritation
- Serious eye damage / irritation** Causes eye irritation
- Respiratory sensitization** N/A
- Skin sensitization** N/A
- **Carcinogenicity** N/A
- **Germ cell Mutagenicity** N/A
- **Reproductive toxic** N/A
- Specific target organ toxicity (single exposure )** May cause respiratory irritation

◦Specific target organ toxicity (repeated exposure )	N/A
◦Aspiration hazard	N/A

#### Section 12 – ECOLOGICAL INFORMATION

<b>1.Acquatic and Terrestrial eco toxicity</b>	Fish toxicity : LC50 59400000 mg/l 96hr Other Invertebrate toxicity : LC50 45600000 mg/l 48hr others Sea algae : EC50 21600000 mg/l 96hr Other
<b>2.Persistence and degradability</b>	Persistence : log kow -2.84 Degradability : N/A
<b>3.Bioaccumulative potential</b>	Concentrations : BCF 3.162 Bioaccumulative : N/A
<b>4.Mobility in soil</b>	N/A
<b>5.Other adverse effects</b>	N/A

#### Section 13 – Disposable considerations

<b>1.Waste methods</b>	Dispose in accordance with local regulations.
<b>2.Waste warning</b>	Dispose prohibited substances and waste separately from others.

#### Section 14 – TRANSPORT INFORMATION

<b>1. UN No.</b>	Non-described
<b>2.Proper shipping Name</b>	Non-described
<b>3.Hazard class</b>	Non-described
<b>4.Packing group</b>	Non-described
<b>5.Marine pollutant</b>	N/A
<b>6.Particular safety Measures for transportation</b>	Non-described

#### Section 15 – REGULATORY INFORMATION

<b>1.Occupation safety and health acts</b>	Non-described
<b>2. Chemical Substances Control Act</b>	Non-described
<b>3. National law of Safety management of hazardous material</b>	Non-described
<b>4.National law of management of Wastes</b>	Designated Waste
<b>5.Other domestic and foreign law</b>	Non-described

#### Section 16 – OTHER INFORMATION

<b>1. Material source</b>	A chemical information MSDS Safety and Health Agency National Institute of Environmental Research Chemical Information Systems Korea Industrial Technology National Fire Hazardous Materials Information System
<b>1. The 1<sup>st</sup> edition</b>	2002.07.30
<b>2. Revision and The final revision</b>	7 / 2019.01.03

**. Other references**

**\* The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**