

## 1. Product and Company Identification

<b>Material name</b>	<b>AMMONIA CITRATE DIBASIC</b>
<b>Version #</b>	01
<b>Revision date</b>	12-08-2011
<b>CAS #</b>	3012-65-5
<b>Product Codes</b>	<b>J.T.Baker: 0682</b> <b>Macron: 0644, IM0682</b>
<b>Synonym(s)</b>	Diammonium hydrogen citrate; Citric acid diammonium salt; 1,2,3-Propanetricarboxylic acid,2-hydroxy-,diammonium salt
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	<b>WARNING</b>  Irritating to eyes, respiratory system and skin.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Skin contact. Eye contact. Ingestion.
<b>Eyes</b>	Causes eye irritation.
<b>Skin</b>	Irritating to skin.
<b>Inhalation</b>	Dust irritates the respiratory system, and may cause coughing and difficulties in breathing.
<b>Ingestion</b>	Ingestion can cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Target organs</b>	Skin. Eyes. Respiratory system.
<b>Chronic effects</b>	None known.
<b>Potential environmental effects</b>	The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
AMMONIA CITRATE DIBASIC	3012-65-5	98 - 103

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
<b>Skin contact</b>	Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	Move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.
<b>Ingestion</b>	Drink plenty of water. Seek medical advice. If ingestion of a large amount does occur, call a poison control center immediately.

<b>Notes to physician</b>	Treat symptomatically.
<b>General advice</b>	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

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<b>Flammable properties</b>	Dust may form explosive mixture with air.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water. Carbon dioxide (CO2). Dry chemical.
<b>Unsuitable extinguishing media</b>	None known.
<b>Protection of firefighters</b>	
<b>Protective equipment and precautions for firefighters</b>	Firefighters should wear full protective gear. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
<b>Special protective equipment for fire-fighters</b>	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
<b>Specific methods</b>	In the event of fire, cool tanks with water spray. In the event of fire and/or explosion do not breathe fumes.
<b>Hazardous combustion products</b>	Combustion generates toxic fumes of ammonia. Nitrogen Oxides (NOx). Carbon monoxide and carbon dioxide.

## 6. Accidental Release Measures

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<b>Personal precautions</b>	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. Local authorities should be advised if significant spillages cannot be contained.
<b>Environmental precautions</b>	This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.
<b>Methods for containment</b>	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). 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.
<b>Methods for cleaning up</b>	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

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<b>Handling</b>	Keep formation of airborne dusts to a minimum. Dust may form explosive mixture with air. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.
<b>Storage</b>	Keep container tightly closed. Store in a well-ventilated place.

## 8. Exposure Controls / Personal Protection

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<b>Exposure guidelines</b>	Not established.
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<b>Engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Use tight fitting goggles if dust is generated.
<b>Skin protection</b>	Wear protective gloves. 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

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<b>Appearance</b>	Granules to powder
<b>Color</b>	White.
<b>Odor</b>	Ammoniacal.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder. Granular.
<b>pH</b>	4.3 (0.1 M Solution)
<b>Melting point</b>	Not available.
<b>Freezing point</b>	Not available.
<b>Boiling point</b>	Not available.
<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>Vapor density</b>	Not available.
<b>Specific gravity</b>	1.48 @ 25°C/4°C
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	Soluble
<b>Partition coefficient (n-octanol/water)</b>	Not available
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Molecular weight</b>	226.19 g/mol
<b>Molecular formula</b>	(NH <sub>4</sub> ) <sub>2</sub> HC <sub>6</sub> H <sub>5</sub> O <sub>7</sub>

## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	Heat, sparks, flames.
<b>Incompatible materials</b>	Strong oxidizing agents. Caustics.
<b>Hazardous decomposition products</b>	Ammonia. Nitrogen oxides (NO <sub>x</sub> ). Carbon oxides.

**Possibility of hazardous reactions** Hazardous polymerization does not occur.

## 11. Toxicological Information

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**Sensitization** Not a skin sensitizer.

**Acute effects** Low hazard for usual industrial or commercial handling.

**Local effects** Irritating to eyes, respiratory system and skin.

**Chronic effects** None known.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Skin corrosion/irritation** Causes skin irritation.

**Epidemiology** No epidemiological data is available for this product.

**Mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Neurological effects** None known.

**Reproductive effects** Contains no ingredient listed as toxic to reproduction

**Teratogenicity** No data available to indicate product or any components present at greater than 0.1% may cause birth defects.

**Symptoms and target organs** Irritant effects.

## 12. Ecological Information

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**Ecotoxicity** Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the environment.

**Persistence and degradability** Expected to be readily biodegradable.

**Partition coefficient (n-octanol/water)** Not available

## 13. Disposal Considerations

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**Disposal instructions** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Contaminated packaging** 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

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### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

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**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

AMMONIA CITRATE DIBASIC (CAS 3012-65-5) 1.0 %

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

AMMONIA CITRATE DIBASIC (CAS 3012-65-5) Listed.

### CERCLA (Superfund) reportable quantity

AMMONIA CITRATE DIBASIC: 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)	No
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

AMMONIA CITRATE DIBASIC (CAS 3012-65-5) Listed.

**Saf-T-Data**  
Health: 1 - Slight  
Flammability: 1 - Slight  
Reactivity: 0 - None  
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

Irritating to eyes, respiratory system and skin.

**Label Precautions**  
Keep away from heat, sparks and flame. Avoid contact with eyes, skin, and clothing. Avoid breathing dust. 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. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if irritation develops or persists. Rinse mouth thoroughly. If ingestion of a large amount does occur, call a poison control center immediately.

## 17. Other Information

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**NFPA ratings**

Health: 2  
Flammability: 1  
Instability: 0

**Disclaimer**

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**Issue date**

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