



Safety Data Sheet

Ammonium Citrate, Dibasic, pH =3.5, 40% in DI water

Section 1 - Chemical Product and Company Identification

MSDS Name: Ammonium citrate dibasic solution

Synonyms: DI water solutions of _ ; Citric acid ammonium salt, Diammonium hydrogen citrate, Dibasic ammonium citrate, Ammonium monohydrogen citrate, Ammonium citrate dibasic, DIAMMONIUM CITRATE, Ammonium monohydrogencitrate, Citric acid, diammonium salt, Diammonium hydrogen 2-hydroxypropane- 1,2,3-tricarboxylate

Company Identification:

Cymer, LLC
124 Cymer Lane
Decatur, TN 37322

For information, call: 423-334-2778

For CHEMTEL assistance, call: 1-888.255.3924

For International CHEMTEL assistance, call: +1.813.248.0573

Section 2 - Hazards Identification

Emergency Overview

OSHA Hazards

Irritant

GHS Classification

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

| | |
|-----------|--|
| Pictogram | The GHS hazard pictogram consists of a black exclamation mark centered within a red diamond-shaped border. |
|-----------|--|

| | |
|-------------|---------|
| Signal word | Warning |
|-------------|---------|

Hazard statement(s)

H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Skin Harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Ingestion May be harmful if swallowed.

Section 3 - Composition, Information on Ingredients

Ammonium citrate dibasic

Synonyms: Citric acid ammonium salt, Diammonium hydrogen citrate

Formula : C6H14N2O7

Molecular Weight : 226.18 g/mol

| CAS# | Chemical Name | Percent | EINECS/ELINCS |
|-----------|--------------------------|---------|---------------|
| 3012-65-5 | Ammonium citrate dibasic | 40 | 221-146-3 |
| 7732-18-5 | Water | 60 | 231-791-2 |

Section 4 - First Aid Measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5 - Fire Fighting Measures

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Section 6 - Accidental Release Measures

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

Section 7 - Handling and Storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Hygroscopic

Section 8 - Exposure Controls, Personal Protection

Exposure Limits

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|--------------------------|-------------|-------------|-------------------|
| Ammonium citrate dibasic | none listed | none listed | none listed |

OSHA Vacated PELs: Ammonium benzoate: No OSHA Vacated PELs are listed for this chemical.

Personal protective equipment

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: Water white to pale yellow

Odor: Threshold: no data available

pH: 3.3 – 3.7 at 20 °C (68 °F)

Vapor Pressure: Not available.

Vapor Density: Not available.

Ignition temperature: no data available

Auto ignition temperature: no data available

Lower explosion limit: no data available

Upper explosion limit: no data available

Flash point: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: no data available

Specific Gravity/Density:

Molecular Formula: C₆H₁₄N₂O₇

Molecular Weight: : 226.18 g/mol

Section 10 - Stability and Reactivity

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO_x)

Other decomposition products - no data available

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

Acute toxicity

Oral LD50

LD50

no data available

Inhalation LC50

no data available

Dermal LD50

no data available

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

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

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

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

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

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation.

Ingestion May be harmful if swallowed.

Skin Harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects

no data available

Additional Information

RTECS: Not available

Section 12 - Ecological Information

Toxicity

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Contaminated packaging

Dispose of as unused product.

Section 14 - Transport Information

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

Section 15 - Regulatory Information

OSHA Hazards

Harmful by ingestion, Irritant.

SARA 302 Components

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

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

Diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate CAS-No. 3012-65-5

Revision Date 1993-04-24

Pennsylvania Right To Know Components

Diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate CAS-No. 3012-65-5

Revision Date 1993-04-24

New Jersey Right To Know Components

Diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate CAS-No. 3012-65-5

Revision Date 1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16 - Additional Information

MSDS Creation Date: 1/15/2013

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Cymer, LLC be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Cymer has been advised of the possibility of such damages.