1. Identification

Product identifier Melamine

Other means of identification
- Catalog number: 1379183
- CAS number: 108-78-1
- Synonyms: Cyanurotriamide
- Chemical name: 2,4,6-Triamino-1,3,5-triazine

Recommended use: Specified quality tests and assay use only.

Recommended restrictions: Not for use as a drug. Not for administration to humans or animals.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
- Company name: U. S. Pharmacopeia
- Address: 12601 Twinbrook Parkway, Rockville, MD 20852-1790
- Telephone: RS Technical Services 301-816-8129
- Website: www.usp.org
- E-mail: RSTECH@usp.org

Emergency phone number
- CHEMTREC within US & Canada: 1-800-424-9300
- CHEMTREC outside US & Canada: +1 703-527-3887

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards: Serious eye damage/eye irritation Category 2B

Environmental hazards: Not classified.

OSHA defined hazards: Not classified.

Label elements
- Hazard symbol: None.
- Signal word: Warning
- Hazard statement: Causes eye irritation.

Precautionary statement
- Prevention: Wash thoroughly after handling.
- Response: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- Storage: Not available.
- Disposal: Not available.

Hazard(s) not otherwise classified (HNOC): None known.

Supplemental information: None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melamine</td>
<td>Cyanurotriamide</td>
<td>108-78-1</td>
<td>100</td>
</tr>
</tbody>
</table>
4. First-aid measures

**Inhalation**
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Skin contact**
Rinse skin with water/shower. Get medical attention if irritation develops and persists.

**Eye contact**
Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Ingestion**
Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

**Most important symptoms/effects, acute and delayed**
Irritation of eyes.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and treat symptomatically.

**General information**
Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

**Suitable extinguishing media**
Water. Foam. Dry chemical or CO2. Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media**
None known.

**Specific hazards arising from the chemical**
No unusual fire or explosion hazards noted.

**Special protective equipment and precautions for firefighters**
Wear suitable protective equipment.

**Fire fighting equipment/instructions**
Use water spray to cool unopened containers. As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

**Specific methods**
Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.

**General fire hazards**
No unusual fire or explosion hazards noted.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Wear appropriate personal protective equipment. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up**
For waste disposal, see section 13 of the SDS. Avoid the generation of dusts during clean-up. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

**Environmental precautions**
Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

**Precautions for safe handling**
As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.

**Conditions for safe storage, including any incompatibilities**
Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

**Occupational exposure limits**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.
### Biological limit values
No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls
For laboratory operations, use good technique and limit open handling. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.

### Individual protection measures, such as personal protective equipment

**Eye/face protection**
Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

**Skin protection**
- **Hand protection**
  Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.
- **Other**
  Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.

**Respiratory protection**
Respirators are generally not required for laboratory operations. Chose respiratory protection appropriate to the task and the level of existing engineering controls.

**Thermal hazards**
Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice. Handling practices in this SDS are recommendations for laboratory use of reference standards. Procedures for any other uses or quantities should be determined after an appropriate assessment.

### 9. Physical and chemical properties

**Appearance**
Appearance descriptions are general information and not specific to any USP lot.

**Physical state**
- Solid.

**Form**
- Crystalline powder.

**Color**
- White.

**Odor**
- Odorless.

**Odor threshold**
Not available.

**pH**
Not available.

**Melting point/freezing point**
- 669.2 °F (354 °C) (decomposes and sublimes at about 280 °C)

**Initial boiling point and boiling range**
Not available.

**Flash point**
Not available.

**Evaporation rate**
Not available.

**Flammability (solid, gas)**
Not available.

**Upper/lower flammability or explosive limits**

- **Flammability limit - lower (%)**
  Not available.

- **Flammability limit - upper (%)**
  Not available.

- **Explosive limit - lower (%)**
  Not available.

- **Explosive limit - upper (%)**
  Not available.

**Vapor pressure**
- < 0.0000001 kPa at 20 °C
- 0.2 hPa at 20 °C

**Vapor density**
- 4.3 (air = 1)

**Relative density**
Not available.

**Solubility(ies)**
- **Solubility (water)**
  Slightly soluble.

- **Solubility (other)**
  Benzene: Insoluble.
  Carbon tetrachloride: Insoluble.
Ether: Insoluble.
Glycerol: Sparingly soluble.
Glycol: Sparingly soluble.
Hot alcohol: Very slightly soluble.
Pyridine: Sparingly soluble.

**Partition coefficient**
(n-octanol/water)
-1.14
-1.37

**Auto-ignition temperature**
1216.4 °F (658 °C)

**Decomposition temperature**
Not available.

**Viscosity**
Not available.

**Other information**
- Chemical family: 1,3,5-triazine derivative.
- Molecular formula: C3H6N6
- Molecular weight: 126.13 g/mol
- pH in aqueous solution: 8.4 - 8.9 (10% slurry in water)
- Specific gravity: 1.6 (water = 1)

### 10. Stability and reactivity

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

**Chemical stability**
Material is stable under normal conditions.

**Possibility of hazardous reactions**
No dangerous reaction known under conditions of normal use.

**Conditions to avoid**
Contact with incompatible materials.

**Incompatible materials**
Peroxides. Phenols.

**Hazardous decomposition products**
Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions. NOx.

### 11. Toxicological information

**Information on likely routes of exposure**

- **Inhalation**
  Knowledge about health hazard is incomplete.

- **Skin contact**
  Knowledge about health hazard is incomplete.

- **Eye contact**
  Causes eye irritation.

- **Ingestion**
  Knowledge about health hazard is incomplete.

- **Symptoms related to the physical, chemical, and toxicological characteristics**
  Abdominal pain.

**Information on toxicological effects**

- **Acute toxicity**
  Not known.

- **Skin corrosion/irritation**
  Based on available data, the classification criteria are not met.

- **Serious eye damage/eye irritation**
  Causes eye irritation.

**Local effects**

- **Irritation test**
  Result: Irritant.
  Species: Rabbit
  Organ: Eye
  Severity: Mild.

- **Irritation test**
  Result: Not irritating.
  Species: Rabbit
  Organ: Skin

**Respiratory or skin sensitization**

- **Respiratory sensitization**
  Knowledge about health hazard is incomplete.

- **Skin sensitization**
  Based on available data, the classification criteria are not met.
Patch test
Result: Not sensitizing.
Species: Human
Organ: Skin
Sensitization
Result: Not sensitizing.
Species: Guinea pig
Organ: Skin

Knowledge about mutagenicity is incomplete.
Results for genotoxicity and mutagenicity studies were mixed.

Based on available data, the classification criteria are not met.

4500 ppm Carcinogenicity
Result: Tumors were not found in female rats when administered in diet. Transitional-cell carcinomas were found in the urinary bladder in male rats.
Species: Rat
Test Duration: 103 weeks

4500 ppm Carcinogenicity
Result: Tumors were not found in male or female mice when administered in diet.
Species: Mouse
Test Duration: 103 weeks

Melamine (CAS 108-78-1) Not classifiable as to carcinogenicity to humans.

Not regulated.
Not listed.

Based on available data, the classification criteria are not met.

Reproductive toxicity

1060 mg/kg/day Reproductivity
Result: No developmental fetal toxicity.
Species: Rat

400 mg/kg/day Reproductivity
Result: No reproductive maternal toxicity.
Species: Rat

Knowledge about health hazard is incomplete.

Knowledge about health hazard is incomplete.

Based on available data, the classification criteria are not met.

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

No data is available on the degradability of this product.

No data available.

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Dispose in accordance with all applicable regulations.

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
14. Transport information

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

General information
It is the shipper's responsibility to determine the correct transport classification at the time of shipment.

15. Regulatory information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

SARA 304 Emergency release notification
Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not regulated.

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

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
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<tr>
<td>Country(s) or region</td>
<td>Inventory name</td>
<td>On inventory (yes/no)*</td>
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<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
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<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
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<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
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<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
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<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
*A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

| Issue date | 03-22-2006 |
| Revision date | 09-21-2018 |
| Version # | 05 |

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