



Safety Data Sheet

Vesta Pharmaceuticals, Inc. urges the customer receiving this Safety Data Sheet (SDS) to study the information provided carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should: (1) Notify your employees, agents, contractors of the information on this sheet and (2) furnish a copy to each of your customers to inform their employees and customers as well.

1. Product and Company Identification

1.1 Product identifiers

Product name Methenamine

CAS-No. 100-97-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses For timed burning

1.3 Details of the supplier of the safety data sheet

Company Vesta Pharmaceuticals, Inc.
5767 Thunderbird Rd.
Indianapolis, IN 46236

Telephone 1-317-895-9000

Fax 1-317-895-9340

1.4 Emergency telephone number

Phone number 1-888-558-3782

2. Hazards Identification

2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 2), H228

Skin sensitization (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Warning

Hazard Statement(s)

H228

Flammable solid

H317	May cause an allergic skin reaction
Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352	If on skin: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol resistant foam to extinguish.
P501	Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

3. Composition/Information on Ingredients

3.1 Substances

Synonyms	Hexamethylenetetramine Hexamine Urotropine 1,3,5,7-Tetraazatricyclo[3.3.1.1 ^{3,7}]decane
Formula	C ₆ H ₁₂ N ₄
Molecular Weight	140.19
CAS-No.	100-97-0
EC-No.	202-905-8

Hazardous components

Methenamine - Flam. Sol. 2; Skin Sens. 1; H228, H317 - Concentration ≤ 100%

4. First-Aid Measures

4.1 Description of 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

Flush eyes with water as a precaution.

If ingested

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. Firefighting Measures**5.1 Extinguishing media****Suitable extinguishing media**

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

5.2 Special hazards arising from the substance

Carbon oxides, Nitrogen oxides (NO_x), Hydrogen cyanide (hydrocyanic acid)

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. Accidental Release Measures**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wetbrushing and place in container for disposal according to local regulations (see Section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing

6.4 Reference to other sections

For disposal see section 13.

7. Handling and Storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - no smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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

Hygroscopic

Storage class (TRGS 510): Flammable solid hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in Section 1.2. No other specific uses are stipulated.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Components with workplace control parameters

Contains no substance with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Face shield and safety glasses. Use equipment for eye protection that is tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin 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.

This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering and approval for any specific use scenario.

Body protection

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

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

- | | | |
|----|--|--|
| a) | Appearance | Form: Tablet
Color: Colorless |
| b) | Odor | Ammoniacal |
| c) | Odor Threshold | No data available |
| d) | pH | 8.4 (0.2 mol aq solution) |
| e) | Melting point/freezing point | 280°C |
| f) | Initial boiling point and boiling range | No data available |
| g) | Flash point | 250°C |
| h) | Evaporation rate | No data available |
| i) | Flammability (solid, gas) | The substance or mixture is a flammable solid with the category 2. |
| j) | Upper/lower flammability or explosive limits | No data available |
| k) | Vapor pressure | < 0.01 mmHg at 20°C |
| l) | Vapor density | No data available |
| m) | Relative density | 1.331 g/cm ³ |
| n) | Water solubility | soluble |
| o) | Partition coefficient: n-octanol/water | log Pow: -2.179 at 20°C |
| p) | Auto-ignition temperature | 410°C |
| q) | Decomposition temperature | 200-800°C (From 200-300°C, decomposes to mainly formaldehyde and ammonia. From 300-800°C, increasing HCN and decreasing ammonia emissions) |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | No data available |

9.2 Other safety information

- | | |
|-----------------|-------------------|
| Surface tension | 70.4 mN/m at 20°C |
|-----------------|-------------------|

10. Stability and Reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Exposure to moisture, heat, flames and sparks.

10.5 Incompatible materials

Strong acids, acids, strong oxidizing agents

10.6 Hazardous decomposition products

NO_x, formaldehyde, ammonia, irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.
In the event of a fire: see Section 5

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral: Rat > 2000 mg/kg

Inhalation: No data available

Dermal: Rat > 2000 mg/kg
OECD Test Guideline 402

Skin corrosion/irritation

Rabbit - no skin irritation after 4 hrs. (OECD Test Guideline 404)

Serious eye damage/eye irritation

Rabbit - no eye irritation (OECD Test Guideline 405)

Respiratory or skin sensitization

Guinea pig - may cause sensitization by skin contact (OECD Test Guideline 406)

Germ cell mutagenicity

Mouse - negative

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

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. Transport Information

DOT (US)

UN number: 1328	Class 4.1	Packing group: III
Proper shipping name:	Methenamine	
Reportable Quantity (RQ):		

Poison Inhalation Hazard: No

IMDG

UN number: 1328	Class 4.1	Packing group: III	EMS-No:F-A, S-G
Proper shipping name:	Methenamine		

IATA

UN number: 1328	Class 4.1	Packing group: III
Proper shipping name:	Methenamine	

15. Regulatory Information

SARA 302 Components

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

SARA 313 Components

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

SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components

Methenamine - CAS 100-97-0

New Jersey Right to Know Components

Methenamine - CAS 100-97-0

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.

16. Other Information

Full text of H-Statements referred to under Sections 2 and 3

Flammable Solid	Flammable solids
H228	Flammable solid
H317	May cause an allergic skin reaction
Skin Sensitization	Skin sensitization

HMIS Rating

Health hazard:	0
Chronic health hazard:	*
Flammability:	2
Physical hazard:	2

NFPA Rating

Health hazard:	0
Fire hazard:	1
Reactivity hazard:	2

Further Information

The information contained in this Safety Data Sheet, as of the date of issue, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this product. The information in this sheet does not represent analytical specifications. The format of this enzyme Material Safety Data Sheet complies both with the EEC Directive 91/155/EEC and ISO standard 11014-1 and is recommended by the Association of Microbial Food Enzyme Producers "AMFEP".

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