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Stabilized Hexamine – Material Safety Data Sheet (MSDS)

Product Name: Stabilized Hexamine
Chemical Name: Hexamethylenetetramine
CAS Number: 100-97-0
Molecular Formula: $C_6H_{12}N_4$
Molecular Weight: 140.2 g/mol

SECTION 1: Identification

Product Identifier: Stabilized Hexamine

Synonyms: Hexamine, Hexamethylenetetramine, HMT, HMTA, Methenamine

Recommended Uses:

- Phenolic resin manufacturing
- Rubber processing
- Friction material production
- Industrial molding compounds
- Chemical manufacturing

Supplier Information: To be completed by the issuing supplier.

Emergency Telephone: To be provided by the responsible supplier.

SECTION 2: Hazard Identification

Reference GHS Classification for Hexamine:

- Flammable Solid, Category 2
- Skin Sensitization, Category 1

Signal Word: Warning

Hazard Statements:

- H228: Flammable solid.
- H317: May cause an allergic skin reaction.

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Precautionary Statements:

- Keep away from heat, sparks, and open flames.
- Avoid breathing dust.
- Wear protective gloves and safety glasses.
- Prevent dust accumulation and static discharge.
- Wash exposed skin thoroughly after handling.

Note: These classifications refer to Hexamine. The classification of the specific stabilized formulation requires confirmation.

SECTION 3: Composition / Information on Ingredients

Main Component: Hexamethylenetetramine

CAS Number: 100-97-0

Purity: Minimum 99.0 wt.%

Stabilizing Additive: Type and concentration not specified in the supplied technical data.

Maximum Impurity Limits:

- Ash Content: 0.53 wt.%
- Humidity: 0.25 wt.%
- Ammonium Salts: 0.02 wt.%
- Formaldehyde: 0.02 wt.%
- Chloride: Nil
- Sulfate: Nil
- Heavy Metals: Nil

SECTION 4: First Aid Measures

Inhalation: Move the affected person to fresh air. Seek medical assistance if coughing, breathing difficulties, or irritation persists.

Skin Contact: Wash immediately with soap and plenty of water. Remove contaminated clothing. Seek medical attention if skin irritation or allergic reactions develop.

Eye Contact: Rinse cautiously with clean water for several minutes. Remove contact lenses if present and easy to do. Seek medical attention if irritation continues.

Ingestion: Rinse the mouth with water. Do not induce vomiting. Contact a medical professional or poison control center for advice.

SECTION 5: Firefighting Measures

Suitable Extinguishing Media:

- Dry chemical powder
- Dry sand
- Alcohol-resistant foam

Specific Hazards:

Hexamine is a flammable solid. Airborne powder may form combustible dust mixtures. Heating or combustion may release hazardous decomposition products, including formaldehyde, ammonia, and nitrogen oxides.

Protective Equipment:

Firefighters should wear appropriate protective clothing and self-contained breathing apparatus.

SECTION 6: Accidental Release Measures

- Eliminate ignition sources.
- Avoid generating airborne dust.
- Ensure adequate ventilation.
- Wear appropriate personal protective equipment.
- Collect spilled material using suitable non-sparking equipment.
- Transfer collected material into properly labeled containers.
- Prevent uncontrolled release into drains and waterways.

SECTION 7: Handling and Storage

Handling:

Handle Stabilized Hexamine in a well-ventilated environment. Minimize dust formation and avoid contact with skin and eyes. Use appropriate equipment to prevent static electricity accumulation.

Storage:

Store in a cool, dry, and well-ventilated location. Keep containers tightly closed and protect the product from excessive moisture, heat, and direct sunlight.

Keep away from strong acids, oxidizing agents, and ignition sources.

SECTION 8: Exposure Controls / Personal Protection

Engineering Controls:

Provide adequate ventilation and dust extraction in handling areas.

Personal Protective Equipment:

- Eye Protection: Chemical safety goggles
- Hand Protection: Suitable chemical-resistant gloves
- Respiratory Protection: Appropriate particulate respiratory protection when required
- Skin Protection: Protective work clothing

Exposure Limits: Grade-specific occupational exposure limits have not been established from the supplied information. Consult applicable local regulations.

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SECTION 9: Physical and Chemical Properties

Appearance: White crystalline powder

Molecular Weight: 140.2 g/mol

Purity: Min. 99.0 wt.%

pH (10% Aqueous Solution): 8–9

Melting Point: >270°C (decomposition), as reported in the supplied TDS

Density: 1.33 g/cm³

Bulk Density: 0.7–0.8 g/cm³

Particle Size: 80–800 microns

US Mesh: 20–170

Solubility (as reported in the supplied TDS):

- Water at 12°C: Approximately 81.3 wt.%
- Methanol at 20°C: Approximately 7.25 wt.%
- Absolute Ethanol at 20°C: Approximately 2.89 wt.%
- Acetone at 20°C: Approximately 0.65 wt.%

Flammability: Flammable solid

Flash Point: Not established for this grade.

SECTION 10: Stability and Reactivity

Chemical Stability: Stable under recommended storage and handling conditions.

Conditions to Avoid:

- Excessive heat
- Open flames and ignition sources
- Dust accumulation
- Contact with incompatible chemicals

Incompatible Materials:

- Strong acids
- Strong oxidizing agents

Hazardous Decomposition Products:

Thermal decomposition or combustion may produce formaldehyde, ammonia, nitrogen oxides, and other hazardous gases.

SECTION 11: Toxicological Information

Potential Routes of Exposure:

- Inhalation
- Skin contact
- Eye contact
- Ingestion

Potential Health Effects:

Inhalation of dust may irritate the respiratory system. Direct contact may cause eye or skin irritation.

Hexamine may cause allergic skin reactions in sensitive individuals.

SECTION 12: Ecological Information

Avoid releasing the product into soil, surface water, and drainage systems.

Environmental toxicity, biodegradability, persistence, and bioaccumulation data for the actual stabilized formulation have not been provided.

SECTION 13: Disposal Considerations

Dispose of unused material, contaminated packaging, and chemical waste according to applicable local and national environmental regulations.

Do not discharge the product directly into drains or natural waterways.

Use approved chemical waste disposal facilities where required.

SECTION 14: Transport Information

Reference Classification for Hexamethylenetetramine:

UN Number: UN 1328

Proper Shipping Name: HEXAMETHYLENETETRAMINE

Transport Hazard Class: 4.1 – Flammable Solid

Packing Group: III

Marine Pollutant: Not classified as a marine pollutant in standard Hexamine transport references.

Packaging Information from Supplied TDS:

- Net Weight: 25 kg per bag
- Bag Material: PP/PE
- Bags per Pallet: 40
- Pallets per 20-foot Container: 20
- Total Shipment: 20 metric tons
- Wrapping: Shrink-PE

SECTION 15: Regulatory Information

Hexamine is subject to applicable chemical safety, classification, labeling, storage, and transportation regulations.

Relevant regulatory frameworks may include:

- GHS hazard classification and labeling
- EU REACH and CLP regulations
- ADR dangerous-goods transportation
- IMDG maritime dangerous-goods requirements
- IATA air transportation requirements

Actual regulatory obligations depend on the destination country and product composition.

SECTION 16: Other Information

Document Type: Material Safety Data Sheet (MSDS/SDS)

Product: Stabilized Hexamine, minimum 99.0 wt.% purity

Document Status: Technical reference draft — not manufacturer approved

Revision Date: Not assigned

This document combines the supplied technical specifications with published safety information for Hexamethylenetetramine.

Before official issuance, the responsible supplier must verify the stabilizer identity and concentration, hazard classification, regulatory compliance, emergency contact details, and other grade-specific safety information.