Hexamine
Safety Data Sheet

1. Product and Company

Product name: Hexamethylenetetramine
Synonym: Hexamine
CAS-No.: 100-97-0
Company: Hummel Croton Inc.
10 Harmich Rd.
South Plainfield, NJ 07080
Telephone: 908-754-1800
Fax: 908-754-1815

Emergency telephone number
Emergency Phone #: Chemtrec US: 800-424-9300
ChemTel International: +1-813-248-0585

2. Hazards

GHS Classification Flammable solids (Category 2), H228
Skin sensitisation (Category 1), H317

GHS Label elements
Pictogram(s)

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/ fume/ gas/ mist/ vapors/ spray.
P272  Contaminated work clothing should not be allowed out of the workplace.
P280  Wear protective gloves/ 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 for extinction.
P501  Dispose of contents/ container to an approved waste disposal plant.

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

None.

3. Composition/Ingredients

Substance
Formula:  C₆H₁₂N₄
Molecular weight:  140.19 g/mol
CAS-No.:  100-97-0

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS</th>
<th>%</th>
<th>OSHA</th>
<th>ACGIH</th>
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<td>100-97-0</td>
<td>100%</td>
<td>Not Established</td>
<td>Not Established</td>
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4. First Aid

First Aid For Eye:  In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
First Aid For Skin:  In case of contact, flush skin with water. Wash clothing before reuse. Call a physician if irritation occurs.
First Aid For Inhalation:  If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
First Aid For Ingestion:  If swallowed, call a physician immediately.

5. Fire Data

Flammability: Non-Flammable
Flash Point:  250°C Closed Cup
Auto Ignition:  410°C
Flammable Limits: Not Applicable
Extinguishing Media:  Water spray, dry chemical, carbon dioxide, foam.
Fire Fighting Procedure: Firefighters should wear full protective clothing and self-contained breathing apparatus to avoid contact with skin and eyes.

Fire/Explosion Hazards: Concentrated dust may form a cloud and produce an explosive hazard. This product is combustible and can be readily ignited when a flame is applied. It is a severe relative explosive hazard, 14% is the limiting oxygen concentration in an air/CO₂ atmosphere required to prevent ignition of dust clouds by electric spark.

6. Accidental Release

Spill Or Leak Procedures: Utilize recommended protective clothing and equipment. Clean spills in a manner that does not disperse dust into the air. Spill area can be washed with water. Collect wash water for approved disposal. Keep from entering water or ground water.

7. Handling And Storage

Storage Temperatures: Store at ambient temperature
Shelf Life: Unlimited in tightly sealed container
Special Sensitivity: None.
Handling/Storage Precautions: Avoid breathing dust. Avoid getting in eyes or on skin. Wash thoroughly after handling. Store in a dry place away from direct sunlight, heat and incompatible materials. Reseal containers immediately after use. Store away from food and beverages.

8. Exposure Controls/Personal Protection

Eye Protection: Safety glasses or goggles.
Skin Protection: PVC gloves with impervious boots, apron or coveralls. Wash hands and face before eating, drinking or using tobacco.
Respirator: Work ambient concentrations should be monitored and if the recommended exposure limit is exceeded, a NIOSH/MSHA approved dust respirator must be worn.
Ventilation: Use local ventilation if dusting is a problem, to maintain air levels below the recommended exposure limit.
Additional Measures: Emergency showers and eye wash stations should be available. Educate and train employees in the safe handling of hazardous chemicals.

9. Physical And Chemical Properties

Physical Form: Crystalline Solid
Color: White
Odor: Slight Fishy Smell
Molecular Weight: 140.2 g/mol
Boiling Point: Sublimes 285-295°C
Melting/Freezing Point: Sublimes 285-295°C
Solubility In Water: Soluble
Specific Gravity: 1.27

10. Stability And Reactivity

Stability: Stable.
Hazardous Polymerization: Will not occur.
Incompatibilities: Strong oxidizing agents and strong bases.
Instable Conditions: Excessive temperatures (see incompatibilities).
Decomposition Temperature: Sublimes above 186.7°C
Decomposition Products: Carbon monoxide, carbon dioxide, hydrogen chlorine gas, phosgene gas.

11. Toxicological Information

RTECS Number: MN4725000
Routes Of Exposure: Eye contact. Ingestion. Inhalation. Skin contact.
Toxicity Data: IVN-RAT LD50:9200 mg/kg ORL-MUS LD50:569 mg/kg SCU-MUS LD50:215 mg/kg
Chronic Toxic Effects: Prolonged skin contact may produce a rash to affected area(in particular the wrist, ankles, beltline, and collar area of the neck) similar in appearance to poison ivy. Hexamine may decompose to formaldehyde in the presence of perspiration (slightly acidic pH 4-6.5). The formaldehyde is trapped in the sweat pores of the skin and then oxidized to formic acid, which is believed to be the actual agent responsible for the skin rash. (WARNING: Formaldehyde may be a potential cancer hazard).
Acute Toxic Effects: Irritating to the skin and eyes on contact. Inhalation will cause irritation to the lungs and mucus membrane. Irritation to the eyes will cause watering and redness. Reddening, scaling, and itching are characteristics of skin inflammation. Follow safe industrial hygiene practices and always wear protective equipment when handling this compound.

12. Ecological Information

Ecotoxicity: Not available at this time.

13. Disposal Considerations

Waste Disposal Method: Waste disposal should be in accordance with existing federal, state and local environmental regulations.

14. Transportation Information

Proper Shipping Name: Hexamethylenetetramine
UN Number: 1328
Class: 4.1
P.G.: III
Label Code: 4.1

15. Regulatory Information

OSHA Status: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA Chemical Inventory: This compound is on the EPA Toxic Substance Control Act (TSCA) Inventory List
California Proposition 65: To the best of our knowledge, this product contains no levels of listed substances, which the State of California has found to cause cancer, birth defects or other reproductive effects.
SARA 313 Title III:
Section 320 Extremely Hazardous Substances: None
Section 311/312 Hazardous Categories: None
Section 313 Toxic Chemicals: None

16. Other Information

Prepared By: Michael Richard
Date: March 21, 2018
Reason For Issue: Emergency Contact Update

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