Hydrazine Hydrate (100%)
Safety Data Sheet

1. Product and Company

Product name: Hydrazine Hydrate (100% Solution)

Synonym: 64% Hydrazine Solution

CAS-No.: 302-01-2

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 Label elements

GHS Classification: Flammable liquids (Category 4), H227
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 1B), H350
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410
DANGER

Hazard statement(s)

H227  Combustible liquid.
H301 + H311 + H331  Toxic if swallowed, in contact with skin or if inhaled
H314  Causes severe skin burns and eye damage.
H317  May cause an allergic skin reaction.
H318  Causes serious eye damage.
H350  May cause cancer.
H410  Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P210  Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261  Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264  Wash skin thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P271  Use only outdoors or in a well-ventilated area.
P272  Contaminated work clothing should not be allowed out of the workplace.
P273  Avoid release to the environment.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281  Use personal protective equipment as required.
P301 + P310 + P330  IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P301 + P330 + P331  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353  IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313  IF exposed or concerned: Get medical advice/ attention.
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.
P391  Collect spillage.
3. Composition/Ingredients

Substance
Formula: \( H_4N_2 \)
CAS-No.: 302-01-2

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS</th>
<th>%</th>
<th>OSHA</th>
<th>ACGIH</th>
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</thead>
<tbody>
<tr>
<td>Hydrazine</td>
<td>5341-61-7</td>
<td>64%</td>
<td>0.1 mg/m³ Skin</td>
<td>0.013 mg/m³ Skin</td>
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<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>36%</td>
<td>Not Established</td>
<td>Not Established</td>
</tr>
</tbody>
</table>

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: Yes
Flash Points: 74-93°C (Cleveland CC)
Auto-Ignition: Not Applicable
Flammable Limits: Lower: 3.4% in air @ 1000mbar Upper: 100% in air @ 1000mbar
Extinguishing Media: Water, Carbon Dioxide & Foam
Fire Fighting Procedure: In case of fire, wear NIOSH approved self-contained breathing apparatus (SCBA) with full-face piece, operated in the positive pressure mode. Wear full protective clothing.
Fire/Explosion Hazards: Move container from the fire area, if possible. Cool fire exposed containers with water well after the fire is out. For massive fire in a storage area use an unmanned hose holder. Flooding is best technique.
6. Accidental Release

Spill or Leak Procedures: Collect wash water for approved disposal. Keep from entering water or ground water. Utilize recommended protective clothing and equipment. Clean spills in a manner that does not disperse liquid into the air. Isolate area of spill by diking. Transfer contents to a non-leaking container or storage vessel. Neutralize spilled hydrazine by diluting with water to a 5% or less solution. Add an equal volume of 5% calcium hypochlorite aqueous solution. Test for neutralization. After neutralization, transfer material to appropriate DOT container for proper 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: Liquid
Color: Colorless to Slight Amber
Odor: Slight Characteristic Odor
Molecular Weight: 32.05 g/mol as Hydrazine
Boiling Point: 120.1°C
Melting/Freezing Point: -51°C
Solubility In Water: Completely Soluble
Specific Gravity: 1.032

10. Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will Not occur
Incompatibilities: Strong Acid & Strong Oxidizers Barium Oxide, Calcium Oxide, Chromate Salts, Alkali Metals And Metal Salts.
Instable Conditions: Excessive temperatures (see Incompatibilities).
Decomposition Temperature: Not Determined
Decomposition products: Nitrogen products and in some cases hydrogen, an explosive gas.

11. Toxicological Information

RTECS Number: MV8050000
Routes of Exposure: Eye contact. Ingestion. Inhalation. Skin contact.
Toxicity Data: Orl-Rat LD50: 129 mg/kg Orl-Mus LD50: 83 mg/kg lpr-Mus LD50: 156 mg/kg
Chronic Toxic Effects: Carcinogen. May alter genetic material
Acute Toxic Effects: May be fatal if inhaled, swallowed, or absorbed through skin. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, and shortness of breath, headache, nausea and vomiting. May cause allergic reaction. Can cause CNS depression. May cause convulsions.

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: Hydrazine aqueous solution with more than 37% hydrazine by mass
UN Number: 2030
Class: 8
P.G.: II
Label Code: 8(6.1)
Reportable Quantity: RQ 1(.454)

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: This product may be subject to SARA section 313 reporting requirements.
16. Other Information

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

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