Material Safety Data Sheet

Mercury (I) Nitrate Dihydrate

MSDS # 448.00

Section 1: Product and Company Identification

Mercury (I) Nitrate Dihydrate

Synonyms/General Names: Mercurous Nitrate
Product Use: For educational use only
Manufacturer: Columbus Chemical Industries, Inc., Columbus, WI 53925,

24 Hour Emergency Information Telephone Numbers
CHEMTREC (USA): 800-424-9300 CANUTEC (Canada): 613-424-6666
ScholAR Chemistry; 5100 W. Henrietta Rd, Rochester, NY 14586; (866) 260-0501; www.Scholarchemistry.com

Section 2: Hazards Identification

Slight yellow crystalline powder, slight odor.

DANGER! Strong oxidizing agent and highly toxic by ingestion.
Target organs: Central nervous system, kidneys.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Section 3: Composition / Information on Ingredients

Mercurous Nitrate (14836-60-3), >99%

Section 4: First Aid Measures

Always seek professional medical attention after first aid measures are provided.

Eyes: Immediately flush eyes with excess water for 15 minutes, lifting lower and upper eyelids occasionally.
Skin: Immediately flush skin with excess water for 15 minutes while removing contaminated clothing.
Ingestion: Call Poison Control immediately. Rinse mouth with cold water. Give victim 1-2 cups of water or milk to drink. Induce vomiting immediately.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration.

Section 5: Fire Fighting Measures

Strong Oxidizer. When heated to decomposition, emits acrid fumes of mercury and NOx.
Protective equipment and precautions for firefighters: Use foam or dry chemical to extinguish fire.
Firefighters should wear full fire fighting turn-out gear and respiratory protection (SCBA). Cool container with water spray. Material is not sensitive to mechanical impact or static discharge.

Section 6: Accidental Release Measures

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Sweep up spill and place in sealed bag or container for disposal. Wash spill area after pickup is complete. See Section 13 for disposal information.

Section 7: Handling and Storage

Handling: Use with adequate ventilation and do not breathe dust or vapor. Avoid contact with skin, eyes, or clothing. Wash hands thoroughly after handling.
Storage: Store in Toxic Storage Area [Blue Storage] with other toxic material. Store in a dedicated poison cabinet. Store in a cool, dry, well-ventilated, locked store room away from incompatible materials. Strong oxidizer, store away from combustibles and acids.

Section 8: Exposure Controls / Personal Protection

Use ventilation to keep airborne concentrations below exposure limits. Have approved eyewash facility, safety shower, and fire extinguishers readily available. Wear chemical splash goggles and chemical resistant clothing such as gloves and aprons. Wash hands thoroughly after handling material and before eating or drinking. Use NIOSH-approved respirator with a dust cartridge. Exposure guidelines: Mercury compounds: OSHA PEL: 0.01 mg/m³ ceiling, ACGIH: TLV: 0.1 mg/m³, STEL: Not Available.
Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular formula</td>
<td>$\text{Hg}_2(\text{NO}_3)_2 \cdot 2\text{H}_2\text{O}$</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>561.22</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>4.78 g/ml @ 4°C</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting Point</td>
<td>70°C decomposes</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temp.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Appearance**: Slight yellow crystalline powder.
**Odor**: Slight odor.
**Solubility**: Soluble in water and alcohol.
**Evaporation rate**: N/A. (Butyl acetate = 1).
**Partition Coefficient**: N/A. ($\log P_{ow}$).
**Flash Point**: N/A.
**EL**: N/A.
**Autoignition Temp.**: N/A.

N/A = Not available or applicable

Section 10: Stability and Reactivity

Avoid heat and ignition sources.
**Stability**: Stable under normal conditions of use and storage.
**Incompatibility**: Reducing agents, phosphorus.
**Shelf life**: Poor, sensitive to light and is deliquescent. Store in a cool, dark, dry environment.

Section 11: Toxicology Information

**Acute Symptoms/Signs of exposure**: 
- **Eyes**: Redness, tearing, itching, burning, conjunctivitis. **Skin**: Redness, itching.
- **Ingestion**: Irritation and burning sensations of mouth and throat, nausea, vomiting and abdominal pain. **Inhalation**: Irritation of mucous membranes, coughing, wheezing, shortness of breath.
**Chronic Effects**: No information found.
**Sensitization**: none expected

**Mercury Nitrate**: 
- LD$_{50}$ [oral, rat]: 170 mg/kg; LC$_{50}$ [rat]: N/A; LD$_{50}$ Dermal [rabbit]: N/A

Material has not been found to be a carcinogen nor produce genetic, reproductive, or developmental effects.

Section 12: Ecological Information

**Ecotoxicity (aquatic and terrestrial)**: Contains a heavy metal – toxic to terrestrial and aquatic plants and animals. Do not release to environment.

Section 13: Disposal Considerations

Check with all applicable local, regional, and national laws and regulations. Local regulations may be more stringent than regional or national regulations. Use a licensed chemical waste disposal firm for proper disposal.

Section 14: Transport Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>DOT Shipping Name</td>
<td>Mercurous Nitrate.</td>
</tr>
<tr>
<td>DOT Hazard Class</td>
<td>6.1, pg II, Marine Pollutant.</td>
</tr>
<tr>
<td>Identification Number</td>
<td>UN1627</td>
</tr>
<tr>
<td>Canada TDG</td>
<td>Mercurous Nitrate.</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>6.1, pg II, Marine Pollutant.</td>
</tr>
<tr>
<td>UN Number</td>
<td>UN1627</td>
</tr>
</tbody>
</table>

Section 15: Regulatory Information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS:</td>
<td>Not listed.</td>
</tr>
<tr>
<td>WHMIS Canada:</td>
<td>Not WHMIS controlled.</td>
</tr>
<tr>
<td>TSCA:</td>
<td>All components are listed or are exempt.</td>
</tr>
<tr>
<td>California Proposition 65:</td>
<td>Listed - Developmental hazard.</td>
</tr>
</tbody>
</table>

The product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16: Other Information

**Current Issue Date**: December 22, 2011

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