1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Mercury(II) nitrate monohydrate

Product Number : 230421
Brand : Sigma-Aldrich
Index-No. : 080-002-00-6

CAS-No. : 7783-34-8

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Dermal (Category 1), H310
Specific target organ toxicity - repeated exposure (Category 2), H373
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

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 : Danger

Hazard statement(s)
H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/ protective clothing.
Wear respiratory protection.
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN: Gently wash with plenty of soap and water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Specific treatment is urgent (see supplemental first aid instructions on this label).
Rinse mouth.
Remove/Take off immediately all contaminated clothing.
Wash contaminated clothing before reuse.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.
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: Mercuric nitrate

Formula: HgN₂O₆ · H₂O
Molecular Weight: 342.62 g/mol
CAS-No.: 7783-34-8
EC-No.: 233-152-3
Index-No.: 080-002-00-6

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>Acute Tox. 2; Acute Tox. 1; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H300 + H310 + H330, H373, H410</td>
<td>-</td>
</tr>
</tbody>
</table>

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

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. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
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 labelling (see section 2.2) and/or in 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
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
nitrogen oxides (NOx), Mercury/mercury oxides.

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. 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. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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 and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. 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.

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>7783-34-8</td>
<td>TWA</td>
<td>0.025 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks
Central Nervous System impairment
Kidney damage
Substances for which there is a Biological Exposure Index or Indices (see BEI® section)
Not classifiable as a human carcinogen
Danger of cutaneous absorption varies
8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

**Eye/face protection**
Face shield and safety glasses Use equipment for eye protection 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.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. 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 an approval for any specific use scenario.

**Body Protection**
Complete suit protecting against chemicals, 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 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. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
   - Form: crystalline
   - Colour: white

b) Odour
   - no data available
c) Odour Threshold  no data available  
d) pH  no data available  
e) Melting point/freezing point  Melting point/range: 79 °C (174 °F) - lit.  
f) Initial boiling point and boiling range  no data available  
g) Flash point  not applicable  
h) Evaporation rate  no data available  
i) Flammability (solid, gas)  no data available  
j) Upper/lower flammability or explosive limits  no data available  
k) Vapour pressure  no data available  
l) Vapour density  no data available  
m) Relative density  4.300 g/cm3  
n) Water solubility  no data available  
o) Partition coefficient: n-octanol/water  no data available  
p) Auto-ignition temperature  no data available  
q) Decomposition temperature  no data available  
r) Viscosity  no data available  
s) Explosive properties  no data available  
t) Oxidizing properties  no data available  

9.2 Other safety information  no data available  

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  
Avoid moisture.  

10.5 Incompatible materials  no data available  

10.6 Hazardous decomposition products  
Other decomposition products - no data available  
In the event of fire: see section 5  

11. TOXICOLOGICAL INFORMATION  

11.1 Information on toxicological effects  

Acute toxicity  no data available  

Sigma-Aldrich - 230421  
Page 5 of 8
Inhalation: no data available
Dermal: no data available
no data available
Skin corrosion/irritation
no data available
Serious eye damage/eye irritation
no data available
Respiratory or skin sensitisation
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Mercury dinitrate monohydrate)
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
no data available
Specific target organ toxicity - single exposure
no data available
Specific target organ toxicity - repeated exposure
May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard
no data available
Additional Information
RTECS: OW8225000
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea
Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available
12.2 Persistence and degradability
no data available
12.3 Bioaccumulative potential
no data available
12.4 Mobility in soil
no data available
12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.
13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**
Dispose of as unused product.

14. TRANSPORT INFORMATION

**DOT (US)**
- UN number: 1625
- Class: 6.1
- Packing group: II
- Reportable Quantity (RQ): 10 lbs
- Marine pollutant: No
- Poison Inhalation Hazard: No

**IMDG**
- UN number: 1625
- Class: 6.1
- Packing group: II
- EMS-No: F-A, S-A

**IATA**
- UN number: 1625
- Class: 6.1
- Packing group: II

15. REGULATORY INFORMATION

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

**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>7783-34-8</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**SARA 311/312 Hazards**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>7783-34-8</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**Pennsylvania Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>7783-34-8</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**New Jersey Right To Know Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>7783-34-8</td>
<td>1993-04-24</td>
</tr>
</tbody>
</table>

**California Prop. 65 Components**
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury dinitrate monohydrate</td>
<td>7783-34-8</td>
<td>2007-09-28</td>
</tr>
</tbody>
</table>
16. OTHER INFORMATION

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

| Acute tox. | Acute toxicity          |
| Aquatic Acute | Acute aquatic toxicity |
| Aquatic Chronic | Chronic aquatic toxicity |
| H300 | Fatal if swallowed. |
| H300 + H310 + | Fatal if swallowed, in contact with skin or if inhaled |
| H330 | Fatal if inhaled. |
| H310 | Fatal in contact with skin. |
| H330 | Fatal if inhaled. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

**HMIS Rating**

Health hazard: 4
Chronic Health Hazard: *
Flammability: 0
Physical Hazard: 0

**NFPA Rating**

Health hazard: 4
Fire Hazard: 0
Reactivity Hazard: 0

**Further information**

Copyright 2014 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.4 Revision Date: 07/01/2014 Print Date: 09/19/2014