SAFETY DATA SHEET

1. Identification

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Sodium Molybdate Dihydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cat No. :</td>
<td>S336-3; S336-500</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Disodium Molybdate Dihydrate.; Molybdic Acid Sodium Dihydrate</td>
</tr>
<tr>
<td>Recommended Use</td>
<td>Laboratory chemicals.</td>
</tr>
<tr>
<td>Uses advised against</td>
<td>No Information available</td>
</tr>
</tbody>
</table>

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious Eye Damage/Eye Irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Specific target organ toxicity - (repeated exposure)</td>
<td>Category 2</td>
</tr>
<tr>
<td>Target Organs - Respiratory system.</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Signal Word
Warning

Hazard Statements
Causes skin irritation
Causes eye irritation
May cause damage to organs through prolonged or repeated exposure
3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate dihydrate</td>
<td>10102-40-6</td>
<td>100</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>7631-95-0</td>
<td>-</td>
</tr>
</tbody>
</table>

4. First-aid measures

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

**Inhalation**
Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

**Ingestion**
Do not induce vomiting. Obtain medical attention.

**Most important symptoms/effects**
No information available.

**Notes to Physician**
Treat symptomatically

5. Fire-fighting measures

**Unsuitable Extinguishing Media**
No information available

**Flash Point**
No information available

**Autoignition Temperature**
No information available

**Explosion Limits**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
Keep product and empty container away from heat and sources of ignition.
Hazardous Combustion Products
None known

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

 NFPA 

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. Accidental release measures

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions
Avoid release to the environment.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep container tightly closed in a dry and well-ventilated place. Avoid dust formation.

7. Handling and storage

Handling
Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate dihydrate</td>
<td>TWA: 0.5 mg/m³</td>
<td>(Vacated) TWA: 5 mg/m³</td>
<td>IDLH: 1000 mg/m³</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>TWA: 0.5 mg/m³</td>
<td>(Vacated) TWA: 5 mg/m³</td>
<td>IDLH: 1000 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Quebec</th>
<th>Mexico OEL (TWA)</th>
<th>Ontario TWAEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate dihydrate</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 0.5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>TWA: 0.5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Legend
ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties
10. Stability and reactivity

Reactive Hazard

None known, based on information available

Stability

Stable under normal conditions.

Conditions to Avoid


Incompatible Materials

Strong oxidizing agents, Halogens

Hazardous Decomposition Products

None under normal use conditions

Hazardous Polymerization

Hazardous polymerization does not occur.

Hazardous Reactions

None under normal processing.

11. Toxicological information

Acute Toxicity

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Mist LC50

Based on ATE data, the classification criteria are not met. ATE > 5 mg/l.

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate</td>
<td>LD50 = 4 g/kg ( Rat )</td>
<td>LD50 = 4000 mg/kg ( Rat )</td>
<td>Not listed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-component</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation

No information available

Sensitization

No information available

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.
<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate dihydrate</td>
<td>10102-40-6</td>
<td>Not listed</td>
<td>Not listed</td>
<td>A3</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>7631-95-0</td>
<td>Not listed</td>
<td>Not listed</td>
<td>A3</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects

- No information available

Reproductive Effects

- No information available

Developmental Effects

- No information available

Teratogenicity

- No information available

STOT - single exposure

- None known

STOT - repeated exposure

- Respiratory system

Aspiration hazard

- No information available

Symptoms / effects, both acute and delayed

- No information available

Endocrine Disruptor Information

- No information available

Other Adverse Effects

- The toxicological properties have not been fully investigated.

### 12. Ecological information

Ecotoxicity

- Do not empty into drains.

Persistence and Degradability

- No information available

Bioaccumulation/ Accumulation

- No information available

Mobility

- No information available

### 13. Disposal considerations

Waste Disposal Methods

- Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

DOT

- Not regulated

TDG

- Not regulated

IATA

- Not regulated

IMDG/IMO

- Not regulated

### 15. Regulatory information

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate dihydrate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>231-551-7</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend:

- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
Sodium Molybdate Dihydrate

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)  Not applicable
SARA 313  Not applicable

SARA 311/312 Hazard Categories

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>Yes</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Sudden Release of Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

CWA (Clean Water Act)  Not applicable

Clean Air Act  Not applicable

OSHA Occupational Safety and Health Administration  Not applicable

CERCLA  Not applicable

California Proposition 65  This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations  Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ):  N
DOT Marine Pollutant  N
DOT Severe Marine Pollutant  N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade  No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class  D2B  Toxic materials
16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date
11-Nov-2014

Print Date
11-Nov-2014

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS