SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name
NADH Disodium Trihydrate

Other means of identification
Product Code(s)
0384
Synonyms
No information available

Recommended use of the chemical and restrictions on use
Recommended Use
For Further Manufacturing Use Only.
Uses advised against
Not for Human or Animal Drug Use

Details of the supplier of the safety data sheet
Company Address
VWR International, LLC
Radnor Corporate Center
100 Matsonford Road
Radnor, PA 19087-8660
Company Phone Number
1-800-448-4442
E-mail Address
info@amresco-inc.com

Emergency Telephone Number
Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122)

Label elements

Emergency Overview

Appearance
Yellow
Physical State
Powder
Odor
No information available

Hazards not otherwise classified (HNOC)
Not regulated
Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>EC No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine 5'- (trihydrogen diphosphate), P'-fwdarw.5'-ester with</td>
<td>606-68-8</td>
<td>210-123-3</td>
<td>95-100</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
1,4-dihydro-1-.beta.-D-ribofuranosyl-3-pyridinecarboxamide, disodium salt

### 4. FIRST AID MEASURES

**First Aid Measures**

**Eye Contact**
Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin Contact**
Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.

**Inhalation**
Move to fresh air. If not breathing, give artificial respiration.

**Ingestion**
Never give anything by mouth to an unconscious person. Rinse mouth.

**Most important symptoms and effects, both acute and delayed**
No information available.

**Indication of any immediate medical attention and special treatment needed**
Treat symptomatically.

**Notes to Physician**

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media**
No information available.

**Specific Hazards Arising from the Chemical**
No information available.

**Hazardous Combustion Products**

**Explosion Data**
- Sensitivity to Mechanical Impact: None.
- Sensitivity to Static Discharge: None.

**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.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal protection**
Ensure adequate ventilation, especially in confined areas.

**Environmental Precautions**

**Environmental Precautions**
See Section 12 for additional Ecological information.

**Methods and material for containment and cleaning up**

**Methods for Containment**
Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up
Avoid dust formation. Pick up and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling
Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

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

Incompatible Products
Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering Measures
Shower
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection
Tightly fitting safety goggles.

Skin and Body Protection
Wear protective gloves/clothing.

Respiratory Protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Yellow</td>
<td>Odor No information available</td>
</tr>
<tr>
<td>Color</td>
<td>No information available</td>
<td>Odor Threshold No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flash Point (High in °C)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
Flammability Limit in Air
  Upper flammability limit: No information available
  Lower flammability limit: No information available
Vapor pressure: No information available
Vapor Density: No information available
Specific Gravity: No information available
Water Solubility: No information available
Solubility in other solvents: No information available
Partition coefficient: No information available
Autoignition Temperature: No information available
Decomposition Temperature: No information available
Kinematic viscosity: No information available
Dynamic viscosity: No information available
Explosive Properties: No information available
Oxidizing Properties: No information available

Other Information
Softening Point: No information available
Molecular Weight: No information available
VOC Content: No information available
Density: No information available
Bulk Density: No information available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical Stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions
None under normal processing.
Conditions to Avoid
Extremes of temperature and direct sunlight.
Incompatible Materials
Strong oxidizing agents.
Hazardous Decomposition Products

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

  Inhalation
  There is no data available for this product.

  Eye Contact
  There is no data available for this product.

  Skin Contact
  There is no data available for this product.

  Ingestion
  There is no data available for this product.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
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</table>
Information on toxicological effects

Symptoms
No information available.

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

Sensitization
No information available.

Mutagenic Effects
No information available.

Carcinogenicity
No information available.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
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</table>

Reproductive Toxicity
No information available.

STOT - single exposure
No information available.

STOT - repeated exposure
No information available.

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information

12. ECOLOGICAL INFORMATION

Ecotoxicity
100% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae/aquatic plants</th>
<th>Toxicity to Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
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</table>

Persistence and Degradability
No information available.

Bioaccumulation/Accumulation
No information available.

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<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
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</table>

Other Adverse Effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method
Dispose of material in accordance with all federal, state, and local regulations.

Contaminated Packaging
Do not re-use empty containers.

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<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
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<tbody>
<tr>
<td>Adenosine 5’- (trihydrogen diphosphate), P’ . f.wda.rw.5’-ester with 1,4-dihydro-1-.beta.-D-ribofuranosyl-3-pyridinecarboxamide, disodium salt 606-68-8</td>
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### 14. TRANSPORT INFORMATION

**DOT**
Not regulated

**IATA**
Not regulated

### 15. REGULATORY INFORMATION

#### International Inventories
- **TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
- **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
- **EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
- **ENCS** - Japan Existing and New Chemical Substances
- **IECSC** - China Inventory of Existing Chemical Substances
- **KECL** - Korean Existing and Evaluated Chemical Substances
- **PICCS** - Philippines Inventory of Chemicals and Chemical Substances
- **AICS** - Australian Inventory of Chemical Substances

**Legend:**
- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
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- KECL - Korean Existing and Evaluated Chemical Substances
- PICCS - Philippines Inventory of Chemicals and Chemical Substances
- AICS - Australian Inventory of Chemical Substances

#### U.S. Federal Regulations

**SARA 313**
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

<table>
<thead>
<tr>
<th>Component</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine 5’- (trihydrogen diphosphate), P’ . f.wda.rw.5’-ester with 1,4-dihydro-1-.beta.-D-ribofuranosyl-3-pyridinecarboxamide, disodium salt 606-68-8 ( 95-100 )</td>
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</table>

**SARA 311/312 Hazard Categories**
- Acute Health Hazard: No
- Chronic Health Hazard: No
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

**Clean Water Act**
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 430.27).
CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>Extremely Hazardous Substances RQs</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine 5’-(trihydrogen diphosphate), P’’:fwdarw.5’-ester with 1,4-dihydro-1-:.beta.-D-ribofuranosyl-3-pyridinecarboxamide, disodium salt 606-68-8</td>
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</table>

U.S. State Regulations

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Prop. 65</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

U.S. EPA Label Information

EPA Pesticide Registration Number Not regulated

16. OTHER INFORMATION

Issuing Date 04-Nov-2009
Revision Date 08-Jan-2016
Revision Note No information available
Disclaimer
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. VWR International and its Affiliates shall not be held liable for any damage resulting from handling.

End of Safety Data Sheet