1. Product Identification

Synonyms: None
CAS No.: 53-84-9
Molecular Weight: 717.48
Chemical Formula: C21H27N7O14P2 . 3H2O
Product Codes: Analytyka:

2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotinamide Adenine Dinucleotide</td>
<td>53-84-9</td>
<td>98 - 100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

WARNING! CAN DECOMPOSE AT ELEVATED TEMPERATURES KEEP REFRIGERATED.

Potential Health Effects

Inhalation:
None identified.

Ingestion:
None identified.

Skin Contact:
None identified.

Eye Contact:
May cause irritation.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

Inhalation:
If a person breathes in large amounts, move the exposed person to fresh air.
Ingestion:
If large amounts were swallowed, give water to drink and get medical advice.

Skin Contact:
In case of contact, immediately wash skin with plenty of soap and water for at least 15 minutes.

Eye Contact:
In case of eye contact, immediately flush with plenty of water for at least 15 minutes.

5. Fire Fighting Measures

Fire:
Not expected to be a fire hazard.

Explosion:
Fire or excessive heat may produce hazardous decomposition products.

Fire Extinguishing Media:
Water spray; Dry chemical; Carbon dioxide.

Special Information:
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6. Accidental Release Measures

Sweep up material and package for safe feed to an incinerator.

7. Handling and Storage

Keep from contact with oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
None established.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other Control Measures:
There is insufficient data in the published literature to assign complete numerical SAF-T-DATA* ratings and laboratory protective equipment for this product. Special precautions must be used in storage, use and handling. Protective equipment for laboratory bench use should be chosen using professional judgment based on the size and type of reaction or test to be conducted and the available ventilation, with overriding consideration to minimize contact with the chemical.

9. Physical and Chemical Properties

Appearance:
White crystalline solid.

Odor:
No information found.

**Solubility:**
Appreciable (> 10%)

**Specific Gravity:**
No information found.

**pH:**
No information found.

**% Volatiles by volume @ 21C (70F):**
0

**Boiling Point:**
No information found.

**Melting Point:**
No information found.

**Vapor Density (Air=1):**
No information found.

**Vapor Pressure (mm Hg):**
0 @ 20C (68F)

**Evaporation Rate (BuAc=1):**
0

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### 10. Stability and Reactivity

**Stability:**
Unstable.

**Hazardous Decomposition Products:**
Carbon dioxide, carbon monoxide, oxides of nitrogen, Phosphorus containing materials

**Hazardous Polymerization:**
Will not occur.

**Incompatibilities:**
Strong oxidizing agents.

**Conditions to Avoid:**
Stability not fully evaluated.

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### 11. Toxicological Information

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<table>
<thead>
<tr>
<th>Ingredient</th>
<th>NTP Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotinamide Adenine Dinucleotide (53-84-9)</td>
<td>No</td>
</tr>
</tbody>
</table>

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### 12. Ecological Information

**Environmental Fate:**
No information found.

**Environmental Toxicity:**
No information found.

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### 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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### 14. Transport Information

Not regulated.
## 15. Regulatory Information

### Chemical Inventory Status - Part 1

<table>
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<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
<th>Japan</th>
<th>Australia</th>
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<td>Yes</td>
<td>Yes</td>
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</table>

### Chemical Inventory Status - Part 2

#### Canada

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<tr>
<th>Ingredient</th>
<th>Korea</th>
<th>DSL</th>
<th>NDSL</th>
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<tbody>
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<td>Yes</td>
<td>No</td>
<td>No</td>
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</table>

### Federal, State & International Regulations - Part 1

#### SARA 302/313

<table>
<thead>
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<th>Ingredient</th>
<th>RQ</th>
<th>TPQ</th>
<th>List</th>
<th>Chemical Catg.</th>
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<tbody>
<tr>
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<td>No</td>
<td>No</td>
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<td>Nicotine sal</td>
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### Federal, State & International Regulations - Part 2

#### RCRA

<table>
<thead>
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<th>Ingredient</th>
<th>CERCLA</th>
<th>261.33</th>
<th>8(d)</th>
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<tbody>
<tr>
<td>Nicotinamide Adenine Dinucleotide (53-84-9)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### Australian Hazchem Code

None allocated.

### Poison Schedule

None allocated.

### WHMIS

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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## 16. Other Information

**Label Hazard Warning:**

WARNING! CAN DECOMPOSE AT ELEVATED TEMPERATURES KEEP REFRIGERATED.

**Label Precautions:**

No SAF-T-DATA Ratings have been developed for this product. Read and follow all warnings, precautions, instructions and other safety and handling information on the label and MSDS.

During use avoid contact with eyes, skin, clothing. Wash thoroughly after handling. When not in use keep in tightly closed container.

**Label First Aid:**

Not applicable.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

Oct. 2003

**Disclaimer:**

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