

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

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1 - Product and Company Information

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|                   |                                                                            |
|-------------------|----------------------------------------------------------------------------|
| Product Name      | B-NICOTINAMIDE ADENINE DINUCLEOTIDE<br>APPROX. 99% CRYSTALLINE             |
| Product Number    | N1511                                                                      |
| Company           | Sigma-Aldrich Pty, Ltd<br>Unit 2, 14 Anella Avenue<br>Castle Hill NSW 1765 |
| Technical Phone # | +61 2 9841 0555                                                            |
| Fax               | +61 2 9841 0500                                                            |
| Emergency Phone # | +61 2 9841 0566                                                            |

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2 - Composition/Information on Ingredients

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|                                        |                                                                                                                                                                                                                                                                                          |           |                         |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------|
| Product Name                           | CAS #                                                                                                                                                                                                                                                                                    | EC no     | Annex I<br>Index Number |
| B-NICOTINAMIDE ADENINE<br>DINUCLEOTIDE | 53-84-9                                                                                                                                                                                                                                                                                  | 200-184-4 | None                    |
| Formula                                | C21H27N7O14P2                                                                                                                                                                                                                                                                            |           |                         |
| Molecular Weight                       | 663.4 AMU                                                                                                                                                                                                                                                                                |           |                         |
| Synonyms                               | Adenine-nicotinamide dinucleotide * Codehydrase<br>I * Codehydrogenase I * Coenzyme I * Cozymase *<br>Cozymase I * Diphosphopyridine nucleotide * DPN<br>* Enzopride * NAD * beta-Nad * Nadide *<br>Nicotinamide-adenine dinucleotide *<br>Nicotineamide adenine dinucleotide * beta-NAD |           |                         |

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3 - Hazards Identification

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SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
Not hazardous according to Directive 67/548/EC.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult,  
call a physician.

## AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious  
amounts of water.

## AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of  
water for at least 15 minutes. Assure adequate flushing by  
separating the eyelids with fingers. Call a physician.

## AFTER INGESTION

If swallowed, wash out mouth with water provided person is

conscious. Call a physician.

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## 5 - Fire Fighting Measures

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### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

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

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## 6 - Accidental Release Measures

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### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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## 7 - Handling and Storage

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### HANDLING

Directions for Safe Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

### STORAGE

Conditions of Storage: Keep tightly closed.  
Store at -20°C

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Wear dust mask.  
Hand Protection: Protective gloves.  
Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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|            |                              |
|------------|------------------------------|
| Appearance | Color: White<br>Form: Powder |
|------------|------------------------------|

| Property     | Value | At Temperature or Pressure |
|--------------|-------|----------------------------|
| pH           | N/A   |                            |
| BP/BP Range  | N/A   |                            |
| MP/MP Range  | N/A   |                            |
| Flash Point  | N/A   |                            |
| Flammability | N/A   |                            |

|                       |                                        |
|-----------------------|----------------------------------------|
| Autoignition Temp     | N/A                                    |
| Oxidizing Properties  | N/A                                    |
| Explosive Properties  | N/A                                    |
| Explosion Limits      | N/A                                    |
| Vapor Pressure        | N/A                                    |
| SG/Density            | N/A                                    |
| Partition Coefficient | N/A                                    |
| Viscosity             | N/A                                    |
| Vapor Density         | N/A                                    |
| Saturated Vapor Conc. | N/A                                    |
| Evaporation Rate      | N/A                                    |
| Bulk Density          | N/A                                    |
| Decomposition Temp.   | N/A                                    |
| Solvent Content       | N/A                                    |
| Water Content         | N/A                                    |
| Surface Tension       | N/A                                    |
| Conductivity          | N/A                                    |
| Miscellaneous Data    | N/A                                    |
| Solubility            | Solvent: 10 mg/ml H2O clear, colorless |

## 10 - Stability and Reactivity

### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

## 11 - Toxicological Information

RTECS NUMBER: UU3450000

### ACUTE TOXICITY

LD50  
Intraperitoneal  
Mouse  
4333 MG/KG

### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: May cause eye irritation.  
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.  
Ingestion: May be harmful if swallowed.

## 12 - Ecological Information

No data available.

## 13 - Disposal Considerations

#### SUBSTANCE DISPOSAL

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. Observe all federal, state, and local environmental regulations.

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#### 14 - Transport Information

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##### RID/ADR

Non-hazardous for road transport.

##### IMDG

Non-hazardous for sea transport.

##### IATA

Non-hazardous for air transport.

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#### 15 - Regulatory Information

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Not hazardous according to Directive 67/548/EC.

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#### 16 - Other Information

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#### WARRANTY

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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