

## Section 1 - Product and Company Information

Product Name BETA-NICOTINAMIDE ADENINE DINUCLEOTIDE  
 HYDRATE, CELL CULTURE TESTED, FROM YEAST  
 Product Number N3014  
 Brand SIGMA  
 Company Sigma-Aldrich Canada, Ltd  
 Address 2149 Winston Park Drive  
 Oakville ON L6H 6J8 CA  
 Technical Phone: 9058299500  
 Fax: 9058299292  
 Emergency Phone: 800-424-9300

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
B-NICOTINAMIDE ADENINE DINUCLEOTIDE HYDRATE (W/RESIDUAL SOLVENT)	53-84-9	Yes

  

Ingredient Name	CAS #	Percent	SARA 313
THE FOLLOWING SUBSTANCES ARE PRESENT AS RESIDUAL COMPONENTS OF PRODUCTION.	None		
ACTHIONE	67-64-1	<= 3	No

Formula C21H27N7O14P2  
 Synonyms Adenine-nicotinamide dinucleotide \* Codehydrase I  
 \* Codehydrogenase I \* Coenzyme I \* Cozymase \*  
 Cozymase I \* Diphosphopyridine nucleotide \* DPN \*  
 Enzopride \* NAD \* beta-Nad \* Nadide \*  
 Nicotinamide-adenine dinucleotide \* Nicotineamide  
 adenine dinucleotide  
 RTECS Number: U03450000

## Section 3 - Hazards Identification

EMERGENCY OVERVIEW  
 Irritant.  
 Irritating to eyes.  
 Target organ(s): Liver. Kidneys.

HMSI RATING  
 HEALTH: 2\*  
 FLAMMABILITY: 0  
 REACTIVITY: 0

NFPA RATING  
 HEALTH: 2  
 FLAMMABILITY: 0  
 REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

ORAL EXPOSURE  
 If swallowed, wash out mouth with water provided person is  
 conscious. Call a physician.

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

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

EYE EXPOSURE  
 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.

## Section 5 - Fire Fighting Measures

FLASH POINT  
 N/A

AUTOIGNITION TEMP  
 N/A

FLAMMABILITY  
 N/A

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

FIREFIGHTING  
 Protective Equipment: Wear self-contained breathing apparatus  
 and protective clothing to prevent contact with skin and eyes.  
 Specific Hazard(s): Emits toxic fumes under fire conditions.

## Section 6 - Accidental Release Measures

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.

## Section 7 - Handling and Storage

HANDLING  
 User Exposure: Avoid inhalation. Avoid contact with eyes, skin,  
 and clothing. Avoid prolonged or repeated exposure.

STORAGE  
 Suitable: Keep tightly closed.  
 Store at -20°C

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## Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS  
 Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT  
 Respiratory: Use respirators and components tested and approved  
 under appropriate government standards such as NIOSH (US) or CEN  
 (EU). Respiratory protection is not required. Where protection  
 from nuisance levels of dusts are desired, use type N95 (US) or  
 type P1 (EN 143) dust masks.  
 Hand: Protective gloves.  
 Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES  
 Wash thoroughly after handling.

## Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	663.43 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A - not available

## Section 10 - Stability and Reactivity

STABILITY  
 Stable: Stable.  
 Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS  
 Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide,

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Nitrogen oxides, Phosphorous oxides.

HAZARDOUS POLYMERIZATION  
 Hazardous Polymerization: Will not occur

## Section 11 - Toxicological Information

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: Material may be irritating to mucous membranes and  
 upper respiratory tract. May be harmful if inhaled.  
 Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)  
 Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE  
 To the best of our knowledge, the chemical, physical, and  
 toxicological properties have not been thoroughly investigated.

## TOXICITY DATA

Intraperitoneal  
 Mouse  
 4333 MG/KG  
 LD50

## Section 12 - Ecological Information

No data available.

## Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION  
 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.

## Section 14 - Transport Information

DOT  
 Proper Shipping Name: None  
 Non-Hazardous for Transport: This substance is  
 considered to be non-hazardous for transport.

IATA  
 Non-Hazardous for Air Transport: Non-hazardous for air  
 transport.

## Section 15 - Regulatory Information

US CLASSIFICATION AND LABEL TEXT  
 Indication of Danger: Irritant.  
 Risk Statements: Irritating to eyes.  
 Safety Statements: In case of contact with eyes, rinse  
 immediately with plenty of water and seek medical advice.  
 US Statements: Target organ(s): Liver. Kidneys.

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## UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes  
 NOTES: This product is or contains a component that is subject  
 to SARA313 reporting requirements.  
 TSCA INVENTORY ITEM: Yes

## CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in  
 accordance with the hazard criteria of the CPR, and the MSDS  
 contains all the information required by the CPR.  
 DSL: Yes  
 NDSL: No

## Section 16 - Other Information

DISCLAIMER  
 For R&D use only. Not for drug, household or other uses.

## 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  
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