

SAFETY DATA SHEET

Preparation Date: 3/1/2017

Revision Date: Not Applicable

Revision Number: Not Applicable

1. IDENTIFICATION

Product identifier

Product code: N2007
Product Name: BETA-NICOTINAMIDE ADENINE DINUCLEOTIDE, REDUCED DIPOTASSIUM SALT

Other means of identification

Synonyms: No information available
CAS #: 104809-32-7
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

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

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Label elements

Warning

Hazard statements

Causes skin irritation
 Causes serious eye irritation
 May cause respiratory irritation

Product code: N2007

Product name:
 BETA-NICOTINAMIDE ADENINE
 DINUCLEOTIDE, REDUCED
 DIPOTASSIUM SALT

1 / 12

**Hazards not otherwise classified (HNOC)**

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves
Wear eye/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	100

4. FIRST AID MEASURES**First aid measures****General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact:

Flush eyes with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

2 / 12

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Causes eye irritation. Eye contact may result in redness or pain. Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Irritating to respiratory system.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon Dioxide, Carbon Monoxide. Nitrogen Oxides. Potassium oxides. Oxides of phosphorus.

Specific hazards: May be combustible at high temperatures.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment 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 Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep refrigerated. Keep at temperatures between 2 and 8 °C. Store away from incompatible materials.

Incompatible Materials:

Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
beta-Nicotinamide	104809-32-7	None	None	None	None

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

4 / 12

Adenine Dinucleotide, Reduced Dipotassium Salt					
--	--	--	--	--	--

Australia and Mexico

Components	CAS-No.	Australia	Mexico
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses with side-shields or Goggles

Skin and body protection: Chemical resistant apron
Gloves
Long sleeved clothing

Respiratory protection: Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Solid

Appearance:

No information available.

Color:

No information available.

Odor:

No information available.

Taste

No information available.

Formula:

C₂₁H₂₇K₂N₇O₁₄P₂

Molecular/Formula weight:

741-62

Flammability:

May be combustible at high temperatures

Flashpoint (°C/°F):

No information available.

Flash Point Tested according to:

Not available

Autoignition Temperature (°C/°F):

No information available

Lower Explosion Limit (%):

No information available

Upper Explosion Limit (%):

No information available

Melting point/range(°C/°F):

No information available

Decomposition temperature(°C/°F):

No information available

Boiling point/range(°C/°F):

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

5 / 12

No information available

Bulk density:
No information available

Density (g/cm³):
No information available

Specific gravity:
No information available

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
No information available

10. STABILITY AND REACTIVITY

Reactivity

No information available

Chemical stability

Stability: Moisture Sensitive. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Avoid dust formation. Incompatible materials.

Incompatible Materials: Strong oxidizing agents

Hazardous decomposition products: No information available.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt

CAS-No. 104809-32-7

LD50/oral/rat = No information available

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

6 / 12

LD50/dermal/rat = No information available
 LC50/inhalation/rat = No information available
 LC50/inhalation/mouse = No information available
 Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
 VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
 Value - Acute Tox Oral = 8500 mg/kg

LD50/dermal/rabbit
 VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
 VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
 VALUE-Vapor = No information available
 VALUE-Gas = No information available
 VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
 VALUE-Vapor = No information available
 VALUE - Gas = No information available
 VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes skin irritation.
Eye Contact: Causes serious eye irritation.
Inhalation Irritating to respiratory system.
Ingestion No information available. Health injuries are not known or expected under normal use.
Aspiration hazard No information available.

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

Chronic Toxicity No information available.
Sensitization: No information available.
Mutagenic Effects: No information available
Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances

Product code: N2007

Product name:
 BETA-NICOTINAMIDE ADENINE
 DINUCLEOTIDE, REDUCED
 DIPOTASSIUM SALT

beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
--	-------------	------------	------------	------------	------------	------------	------------

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class No information available
Packing group: No information available
Emergency Response Guide Number No information available
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions No Information available
Symbol(s): No information available
Description: No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant No Information available
Description: No information available

ADR

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available

IMO / IMDG

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant No information available

RID

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

ICAO

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
ERG Code: No information available

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

Special Provisions

No information available

15. REGULATORY INFORMATION**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt</i>	104809-32-7	Not Listed	Not present	Not present	Not present	Not present	Not present	Not present

U.S. Regulations**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt</i>	104809-32-7	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	Not Applicable	Not Applicable

Canada**WHMIS hazard class:**

D2B Toxic materials

Canada Controlled Products Regulation:

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

Product code: N2007

Product name:
 BETA-NICOTINAMIDE ADENINE
 DINUCLEOTIDE, REDUCED
 DIPOTASSIUM SALT

10 / 12

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	Not Listed	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7	Not listed

EU Classification

R-phrase(s)

R36/37/38 - Irritating to eyes, respiratory system and skin.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
beta-Nicotinamide Adenine Dinucleotide, Reduced Dipotassium Salt	104809-32-7		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xi - Irritant.

Xi



16. OTHER INFORMATION

Preparation Date: 3/1/2017
Revision Date: Not Applicable
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages,

Product code: N2007

Product name:
BETA-NICOTINAMIDE ADENINE
DINUCLEOTIDE, REDUCED
DIPOTASSIUM SALT

11 / 12

including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet