

Nicotinamide Adenine Dinucleotide Phosphate Monosodium Salt (NADP-Na)

Catalog # **NN01-C59**

Lot # **K4488-13**

CAS **1184-16-3**

Product Description

Molecular Formula: $C_{21}H_{27}N_7O_{17}P_3 \cdot Na$

Molecular Weight: **765.4**

Physical Appearance: white to yellowish powder

pH of Solution: 2.0-4.0 (100mg/mL water)

Alternative name(s)

β -nicotinamide adenine dinucleotide phosphate monosodium salt, Coenzyme-II monosodium salt, β -NADP⁺ monosodium salt, Triphosphopyridine nucleotide, NADP, TPN, β -NADP-sodium salt, Coenzyme II, β -NADP-Na, TPN-Na

Storage and Stability

Transport product sealed, dry, and protected from light at ambient temperature. Store product dry and protected from light. For long term storage keep between -25°C and -15°C.

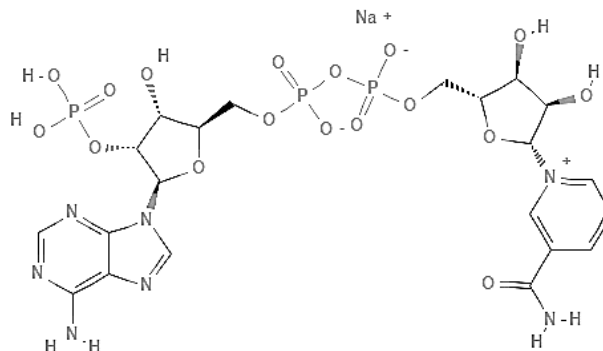
Scientific Background

Nicotinamide adenine dinucleotide phosphate monosodium salt (NADP-Na) is the sodium salt of Nicotinamide adenine dinucleotide phosphate (NADP⁺) coenzyme. NADP⁺ is an essential oxidizing agent and electron acceptor found in all forms of life (1). It serves as a cofactor in anabolic reactions driving the biosynthesis of all major cell components (i.e. lipid and nucleic acid synthesis) and the generation of reactive oxygen species (2). It plays an essential role in the activity of NADPH-dependent biosynthetic enzymes (3). Scientific applications of this product include enzymatic reactions, and pharmacological studies. It can be used as a cofactor in various enzymatic tests.

References

1. Spaans SK, Weusthuis RA, van der Oost J, Kengen SW. NADPH-generating systems in bacteria and archaea. *Front Microbiol.* 2015 Jul 29;6:742. doi: 10.3389/fmicb.2015.00742. PMID: 26284036; PMCID: PMC4518329.
2. Nakamura M, Bhatnagar A, Sadoshima J. Overview of pyridine nucleotides review series. *Circ Res.* 2012 Aug 17;111(5):604-10. doi: 10.1161/CIRCRESAHA.111.247924. PMID: 22904040; PMCID: PMC3523884.
3. Papagianni M. Recent advances in engineering the central carbon metabolism of industrially important bacteria. *Microb Cell Fact.* 2012 Apr 30;11:50. doi: 10.1186/1475-2859-11-50. PMID: 22545791; PMCID: PMC3461431.

Molecular Structure



Purity Analysis

Purity:	≥95% (HPLC)
Assay:	≥90% (UV) (calculated on sodium free and dry basis)
	≥86% (UV) (calculated on a dry basis)
Sodium Content:	2.0-4.0%
Water Content:	≤8%
ϵ at 260nm and pH 7.5:	$(18.0 \pm 1.8) \times 10^3$ L/mol/cm (UV)
Ratio at pH 7.5 A250/A260:	0.83±0.08 (UV)
Ratio at pH 7.5 A280/A260:	0.21±0.02 (UV)
ϵ when reduced with glucose-6-phosphate dehydrogenase at 340nm and pH 7.5:	$(6.2 \pm 0.6) \times 10^3$ L/mol/cm
Ratio when reduced with glucose-6-phosphate dehydrogenase at pH 7.5 A340/A260:	0.43±0.04

Nicotinamide Adenine Dinucleotide Phosphate Monosodium Salt (NADP-Na)

Catalog #	NN01-C59
Cas#	1184-16-3
Lot #	K4488-13
Expiration Date	2024-05-09
Purity	≥95% (HPLC)
Format	white to yellowish powder
Stability	Two years
Storage & Shipping	Transport product sealed, dry, and protected from light at ambient temperature. Store product dry and protected from light. For long term storage keep between -25°C and -15°C.

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SAFETY DATA SHEET

Article 1 - Product Identification

Product Name: Nicotinamide Adenine Dinucleotide Phosphate Monosodium Salt (NADP-Na)

Catalog # NN01-C59

This product is sold only for research use by qualified laboratory personnel, and is not to be used as a drug, medical device, food additive, cosmetic, nor household chemical. It is not to be used in diagnostic, therapeutic, consumer, agricultural, nor pesticidal applications.

Supplier's Name: SignalChem Diagnostics Inc.
Street Address: 110-13120 Vanier Place
City, Prov. Postal Code: Richmond, BC, V6V 2J2
Country: Canada
Fax: 604-232-4601
EMERGENCY PHONE: 604-232-4600

Article 2 - Hazard Identification

Classification of Substance (GHS)

Not a hazardous substance or mixture.

Label Elements

Not a hazardous substance or mixture.

Other hazards: None

Article 3 - Composition/Information on Ingredients

Product Name(s): Nicotinamide adenine dinucleotide phosphate monosodium salt
β-nicotinamide adenine dinucleotide phosphate monosodium salt
Coenzyme-II monosodium salt
β-NADP⁺ monosodium salt
Triphosphopyridine nucleotide
NADP
TPN
β-NADP-sodium salt
Coenzyme II
β-NADP-Na
TPN-Na

Chemical Name: Nicotinamide adenine dinucleotide phosphate monosodium salt

Molecular Formula: C₂₁H₂₇N₇O₁₇P₃ · Na

CAS Number: 1184-16-3

Concentration: ≥95%

Article 4 - First-aid Measures

- **General information:** Consult a physician and provide this SDS.
- **After inhalation:** Breathe in fresh air. If victim cannot breathe, give artificial respiration and consult a physician.
- **After skin contact:** Immediately wash with soap and plenty of water and rinse thoroughly. Consult a physician.
- **After eye contact:** Rinse opened eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Consult a physician.
- **After swallowing:** Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If you feel unwell, seek medical advice.

Article 5 - Fire-fighting Measures

- **Suitable extinguishing media:** Use water spray, extinguishing powder, carbon dioxide, alcohol resistant foam, or other appropriate measure that is suitable to the environment.
- **Specific hazards arising from the substance or mixture:**
Carbon oxides
Nitrogen oxides (NOx)
Oxides of phosphorus
Sodium oxides
- **Special protective equipment and precautions for fire-fighters:** Self-contained breathing apparatus if necessary.
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Article 6 – Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:** Apply standard laboratory practices and personal protective equipment. Avoid breathing vapors, mist, dust, or gas. Ensure adequate ventilation.
- **Environmental precautions:** Do not allow to enter drains.
- **Methods and materials for containment and cleaning up:** Sweep up and shovel. Keep in suitable, closed containers for disposal.

Article 7 - Handling and Storage

- **Precautions for safe handling:** Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing. Provide appropriate exhaust ventilation at places where dust is formed.
- **Conditions for safe storage:** Keep container tightly closed in a dry and well-ventilated place.

Article 8 - Exposure Controls/Personal Protection

- **Components with limit monitoring values at workplace:**
Contains no substances with occupational exposure limit values.
- **Appropriate engineering controls:**
Apply adequate ventilation including mechanical exhaust or laboratory fume hood. Follow standard laboratory practices.
- **Individual protection measures:**
Respiratory protection:
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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection:
Wear gloves and use proper glove removal technique to avoid skin contact. Discard gloves after use by following the applicable laboratory regulations. Wash and dry hands.
Eye/face protection:
Safety goggles with side-shields approved under appropriate government standards.
Skin/body protection:
Use appropriate clothing, footwear and any additional protection measures to protect from splashing or contamination.

Article 9 – Physical and Chemical Properties

Appearance: white to yellowish powder	Danger of explosion: Product does not present an explosion hazard.
Odour/Odour Threshold: No data available.	Explosion limits: No data available.
pH: No data available.	Decomposition temperature: No data available.
Melting point/freezing point: Melting point/range: 175 - 178 °C	Vapor pressure at 20 °C: No data available.
Boiling point/Boiling range: No data available.	Density: No data available.
Flash point: No data available.	Relative density: Not determined.
Flammability (solid, gaseous): No data available.	Vapor density: Not determined.
Ignition temperature: No data available.	Evaporation rate: Not determined.
Auto-igniting: Product is not self-igniting.	Solubility in / Miscibility with Water: 0.05g/L

Article 10 - Stability and Reactivity

- **Reactivity:** No data available.
- **Chemical stability:** Stable under recommended transport and storage conditions.
- **Possible hazardous reactions:** No data available.
- **Conditions to avoid:** No data available.
- **Incompatible materials:** Strong oxidizing reagents
- **Hazardous decomposition products:** In the event of fire: see section 5

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Article 11 - Toxicological Information

- **Acute toxicity:** No data available.
- **LD/LC50:** No data available.
- **Skin corrosion/irritation:** No data available.
- **Serious eye damage/eye irritation:** No data available.
- **Respiratory or skin sensitization:** No data available.
- **Germ cell mutagenicity:** No data available.
- **Carcinogenicity:** No data available.
- **Reproductive toxicity:** No data available.
- **Teratogenicity:** No data available.
- **Specific target organ toxicity - single exposure/ - repeated exposure (GHS):** No data available.
- **Aspiration hazard:** No data available.
- **Potential health effects:**
 - Inhalation: No data available.
 - Ingestion: No data available
 - Skin: No data available
 - Eyes: No data available
- **Signs and Symptoms of Exposure:** No data available.
- **Synergistic effects:** No data available.

Article 12 - Ecological Information

- **Eco-toxicity:** No data available.
- **Biodegradability:** No data available.
- **Bio-accumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **PBT and vPvB assessment:** No data available.
- **Other adverse effects:** No data available.

Article 13 - Disposal Considerations

- **Disposal methods:** In accordance with applicable national, regional, or local laws and regulations. For additional handling information and protection of employees please refer to Article 7 and 8.
- **Contaminated packaging:** Disposal should be made in accordance with official regulations.

Article 14 - Transport Information

- **DOT:** Not dangerous goods.
- **IMDG:** Not dangerous goods.
- **IATA:** Not dangerous goods.

Article 15 – Regulatory Information

- **WHMIS Classification:** Non-hazardous.
- **GHS label elements:** Not applicable.
- **Signal word:** Not applicable.
- **Hazard statements:** Not applicable.

Article 16 - Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SignalChem shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalog for additional terms and conditions of sale.

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