

**Product Name:** NAADP tetrasodium salt

**Catalog No.:** 3905

**Batch No.:** 4

**IUPAC Name:** Nicotinic acid adenine dinucleotide phosphate tetrasodium salt

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>21</sub>H<sub>23</sub>N<sub>6</sub>Na<sub>4</sub>O<sub>18</sub>P<sub>3</sub>

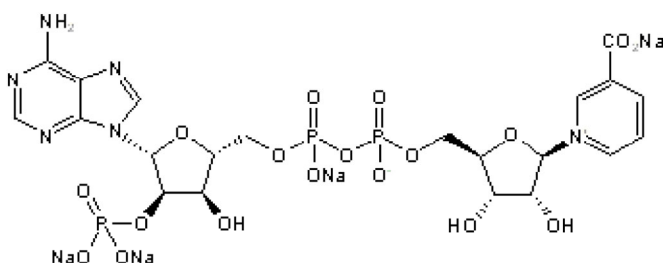
**Batch Molecular Weight:** 832.32

**Physical Appearance:** White solid

**Solubility:** water to 50 mM

**Storage:** Store at -20°C

**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 99.1% purity

**Mass Spectrum:** Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**IUPAC Name:** Nicotinic acid adenine dinucleotide phosphate tetrasodium salt

**Description:**

NAADP tetrasodium salt is a Ca<sup>2+</sup> mobilizing agent. Initiates Ca<sup>2+</sup> release via type 1 ryanodine receptor (RyR1) activation. Also regulates Ca<sup>2+</sup> release from intracellular stores distinct from the endoplasmic reticulum (ER); displays affinity for two-pore channels (TPCs) which release Ca<sup>2+</sup> from acidic organelles.

**Physical and Chemical Properties:**

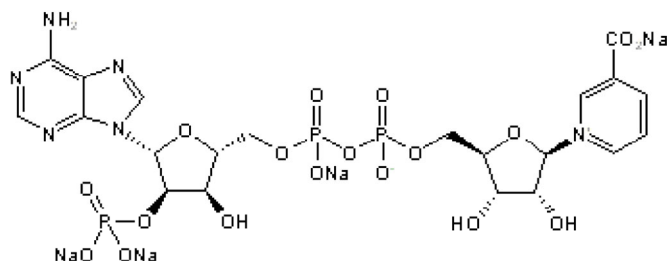
Batch Molecular Formula: C<sub>21</sub>H<sub>23</sub>N<sub>6</sub>Na<sub>4</sub>O<sub>18</sub>P<sub>3</sub>

Batch Molecular Weight: 832.32

Physical Appearance: White solid

**Minimum Purity:** ≥98%

**Batch Molecular Structure:**



**Storage:** Store at -20°C

**Solubility & Usage Info:**

water to 50 mM

Solutions of NAADP should ideally be prepared and used as quickly as possible. Solutions of 10 mg/mL stored at 2-8°C at neutral pH are expected to lose 2-5% activity per week. Solutions stored at -20°C are expected to lose between 2-5% activity after six months. Lyophilized NAADP shows a loss of activity of less than 2% after 12 months when stored at -20°C

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. \*Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Calcraft *et al*** (2009) NAADP mobilizes calcium from acidic organelles through two-pore channels. *Nature* **459** 596. PMID: 19387438.

**Dammerman *et al*** (2009) NAADP-mediated Ca<sup>2+</sup> signaling via type 1 ryanodine receptor in T cells revealed by a synthetic NAADP agonist. *Proc.Natl.Acad.Sci.* **106** 10678.

**Galion** (2006) NAADP, a new intracellular messenger that mobilizes Ca<sup>2+</sup> from acidic stores. *Biochem.Soc.Transactions* **34** 922.

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**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

www.tocris.com/distributors

Tel:+1 612 379 2956