

## Product Information

# β-Nicotinamide adenine dinucleotide 2'-phosphate reduced tetrasodium salt hydrate

≥95% (HPLC)

**N6505**

## Product Description

CAS Registry Number: 2646-71-1

Synonyms: β-NADPH, Coenzyme II reduced tetrasodium salt, 2'-NADPH hydrate, NADPH, TPNH, Triphosphopyridine nucleotide reduced tetrasodium salt, NADPH Na<sub>4</sub>, TPNH<sub>2</sub> Na<sub>4</sub>, Dihyronicotinamide adenine dinucleotide phosphate tetrasodium salt

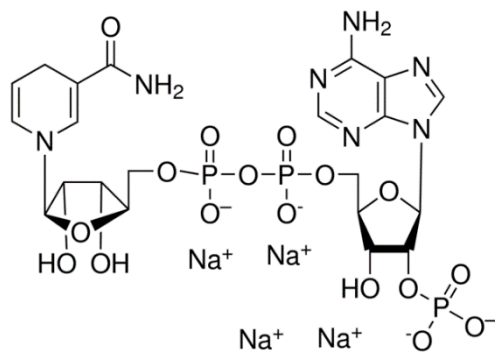
Molecular Formula: C<sub>21</sub>H<sub>26</sub>N<sub>7</sub>Na<sub>4</sub>O<sub>17</sub>P<sub>3</sub> • xH<sub>2</sub>O

Formula Weight: 833.35 (anhydrous basis)

E<sup>m</sup><sub>M</sub> (340nm) = 6.22 (pH >10)

A<sub>260nm</sub> / A<sub>340nm</sub> = 2.32

Structure:



β-Nicotinamide adenine dinucleotide 2'-phosphate (β-NADPH) is a product of the pentose phosphate pathway, a multifunctional pathway whose primary purpose is to generate reducing power, in the form of β-NADPH. β-NADPH transfers H<sup>+</sup> and 2e<sup>-</sup> to oxidized precursors in the reduction reactions of biosynthesis. Thus, β-NADPH cycles between catabolic and biosynthetic reactions, and serves as the carrier of reducing power in the same way that ATP serves as the carrier of energy.<sup>1</sup>

Enzymes that use β-NADPH as a coenzyme include glutathione reductase, diacetyl reductase, dihydrofolate reductase, glutamic dehydrogenase, *p*-hydroxybenzoate hydroxylase, NADPH-FMN oxidoreductase, nitrate reductase and thioredoxin reductase. β-NADPH is also involved with cytochrome P450 electron transport systems.<sup>2</sup>

This listing of β-Nicotinamide adenine dinucleotide phosphate reduced form, N6505, is prepared by enzymatic reduction. Several publications,<sup>3</sup> theses<sup>4-7</sup> and dissertations<sup>8-13</sup> have cited use of N6505 in their research protocols.

## Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

It is recommended to store N6505 desiccated at -20 °C, protected from light. The normal impurities and/or decomposition products are β-NADP and Monophosphoadenosine 5'-diphosphoribose.

It is suggested to prepare β-NADPH solutions fresh and use promptly, unless you are sure that this is an unnecessary precaution for your work. However, it has been reported that a 0.5 mM solution in 0.02 M NaOH (pH 12.3) showed no loss of purity in a week at 4 °C or -85 °C, but a 13% loss at -20 °C.<sup>14</sup> One publication has investigated the solution stability of NADPH.<sup>15</sup>

## Preparation Instructions

β-NADPH is tested for solubility in 0.01 M sodium hydroxide at 50 mg/mL.

## References

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