

SPECIFICATION SHEET

Product Name: Nicotinamide Adenine Dinucleotide Reduced Form (NADH) disodium salt **Catalog #** NH01-C59

Product Description: Coenzyme Nicotinamide Adenine Dinucleotide Reduced Form (NADH) disodium salt, CAS 606-68-8, for catalytic reactions.

CAS: 606-68-8

Storage and Stability: Product can be stored at 2~8°C for transportation process up to ten days but long-term storage should be at -20°C.

Alternate Names

: β -nicotinamide adenine dinucleotide reduced form disodium salt, Reduced Coenzyme-I disodium salt, β -NADH disodium salt, Disodium NADH

Appearance

: Yellow or pale-yellow power

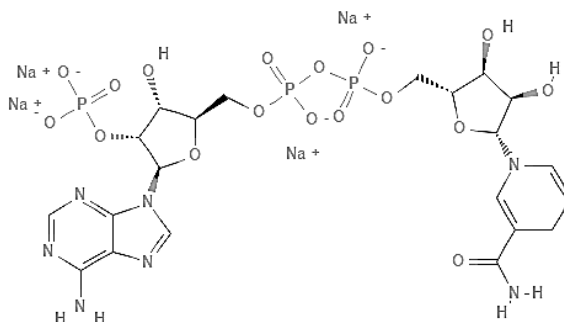
Molecular Weight

: 709.41 g/mol

Molecular Formula

: $C_{21}H_{27}N_7O_{14}P_2 Na_2$

Molecular Structure



Purity Analysis

Purity:	≥95%
HPLC Purity:	≥98%
Heavy Metals:	≤10ppm
Pb:	≤1ppm
As:	≤1ppm
Hg:	≤1ppm
Cd:	≤1ppm
Total plate count:	≤1000 CFU/g
Coliform:	≤3 MPN/g
E.Coli:	Negative
Salmonella:	Negative
Staphylococcus aureus:	Negative

pH of Solution

: 7.0-10.0 (100 mg/mL water)

Scientific Background

: Nicotinamide adenine dinucleotide reduced form (NADH) disodium salt is a coenzyme necessary for the catalytic reaction of certain metabolic enzymes found in all living cells (1). It consists of two nucleosides joined by a pyrophosphate (2). Enzymes catalyze the reversible transfer of a hydride ion (H^-) from NADH to a substrate molecule to form the oxidized product NAD. The reaction is easily reversible when NAD^+ oxidizes another molecule and is re-reduced to NADH. Thus, the coenzyme can continuously cycle between the NAD^+ and NADH forms without being consumed (3). Laboratory applications of this enzyme include biocatalytic synthesis reactions, and kinetic studies.

References

1. Pollak N, Dölle C, Ziegler M. The power to reduce: pyridine nucleotides--small molecules with a multitude of functions. *Biochem J.* 2007 Mar 1;402(2):205-18. doi: 10.1042/BJ20061638. PMID: 17295611; PMCID: PMC1798440.
2. Alfred D. Winer. Crystallization of Nicotinamide Adenine Dinucleotide, *Journal of Biological Chemistry*, Volume 239, Issue 10, 1964, Pages PC3598-PC3600, ISSN 0021-9258. [https://doi.org/10.1016/S0021-9258\(18\)97765-3](https://doi.org/10.1016/S0021-9258(18)97765-3).
3. Katsyuba E, Romani M, Hofer D, Auwerx J. NAD⁺ homeostasis in health and disease. *Nat Metab.* 2020 Jan;2(1):9-31. doi: 10.1038/s42255-019-0161-5. Epub 2020 Jan 20. PMID: 32694684.
4. National Center for Biotechnology Information (2022). PubChem Compound Summary for CID 2724710, Disodium nicotinamide adenine dinucleotide. Retrieved October 24, 2022 from <https://pubchem.ncbi.nlm.nih.gov/compound/Disodium-nicotinamide-adenine-dinucleotide>.

Version: 1.0