



TECHNICAL DATA SHEET

**Product Name:**  $\beta$ -Nicotinamide Adenine Dinucleotide (NAD<sup>+</sup>)

**CAS Number:** 53-84-9

**Molecular Formula:** C<sub>21</sub>H<sub>27</sub>N<sub>7</sub>O<sub>14</sub>P<sub>2</sub>

**Molecular Weight:** 663.43

**EINECS No.:** 200-184-4

**EC Code:** Not allocated

1. Product Description

$\beta$ -Nicotinamide Adenine Dinucleotide (NAD<sup>+</sup>) is a naturally occurring coenzyme found in all living cells and plays a critical role in cellular energy metabolism and redox reactions. It functions as an essential cofactor for numerous enzymes involved in mitochondrial function, DNA repair, and metabolic regulation. NAD<sup>+</sup> appears as a white to off-white lyophilized powder with high purity and excellent water solubility. It is widely used in biochemical research, nutraceutical formulations, anti-aging research, and pharmaceutical applications.

2. Specification

Parameter	Specification
Appearance	White to off-white powder
Assay (HPLC)	≥ 98.0%
Purity	≥ 98.0%
Solubility	Freely soluble in water
pH (10 mg/mL solution)	2.0 – 4.0
Water Content	≤ 5.0%
Sodium Content	≤ 1.0%
Residual Solvents	Complies with ICH guidelines
Heavy Metals (Pb)	≤ 10 ppm
Arsenic (As)	≤ 1 ppm
Microbiological Standards	
Total Plate Count	≤ 100 CFU/g
Yeast & Mold	≤ 10 CFU/g
E. coli	Negative
Salmonella	Negative

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### 3. Applications

- Nutritional supplements – cellular energy support
- Anti-aging formulations – NAD+ replenishment research
- Biochemical and pharmaceutical research
- Functional foods and nutraceutical products
- Enzyme cofactor applications in biotechnology

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### 4. Packaging & Storage

- **Packaging:** 1 g / 5 g / 10 g / 100 g sterile vial or aluminum foil bag with vacuum sealing
- **Shelf Life:** 24 months under recommended storage conditions
- **Storage Conditions:** Store at 2–8°C for short-term storage or -20°C for long-term storage, protected from light and moisture

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### 5. Regulatory Status

- Research grade / nutraceutical grade (depending on specification)
- Manufactured under ISO and HACCP-certified facilities
- Non-GMO, allergen-free, BSE/TSE-free
- Not intended for direct pharmaceutical injection use unless otherwise specified