

Technical Data Sheet

Product Name: NADit™ NAD+

Product Code: EZ891212b

1.Technical Data Sheet			
Chemical Name	β-Nicotinamide Adenine Dinucleotide (NAD+)		
CAS Number	53-84-9		
Molecular Weight	663.43		
Molecular Formula	C ₂₁ H ₂₇ N ₇ O ₁₄ P ₂		
Compliance (Food / Pharmacopoeia / FCC / Feed)	Food		
Brief Introduction: β-Nicotinamide adenine dinucleotide (NAD+) is a coenzyme found in all living cells that plays a critical role in energy metabolism and cellular processes. NAD+ has been proposed to enhance cellular function and promote overall health.			
Item	Standard		Analysis Method
Appearance	Fine white to off-white powder.		Visual
Identification	Positive		TLC/HPLC
Odor &Taste	Characteristic		Organoleptic
Sodium Content	≤1.0%		IC
Organic Solvents	≤1.0%		GC
Loss on Drying	≤10%		Eur.Ph.7.0 [2.8.17]
pH	2.0-4.0		pH meter
Content	≥98.0%		HPLC
Purity	≥99.0%		HPLC
Residual Solvent	Ethanol	/	GC
	Methanol	/	
	Acetone	/	
	Toluene	/	
Heavy metals			
Total Heavy Metals	≤10 ppm		USP <233>
Lead	≤1.0 ppm		USP <233>
Arsenic	≤1.0 ppm		USP <233>
Cadmium	≤1.0 ppm		USP <233>
Mercury	≤0.1 ppm		USP <233>
Microorganism			
Total plate count	≤500 cfu/g		USP <61>
Molds & Yeasts	≤50 cfu/g		USP <61>

E. coli	≤0.92MPN/g	USP <62>
Salmonella	Negative/10g	USP <62>
Staphylococcus	Negative/10g	USP <62>
Storage & Shelf Life		
Package	25kg/drum	
Shelf Life	The shelf life for the product is 24 months from date of production. Use it as soon as possible once it is opened.	
Storage	Store in unopened original package under clean and dry condition, away from sunlight.	

2.Origin & Ingredient			
Country of origin of the product: China		Origin statement: available ☒	
This product is a pure material ☒		This product is a compound material ☐	
Animal origin	☐ bovine	Specific Source: /	
	☐ porcine	Specific Source : /	
	☐ ovine	Specific Source : /	
	☐ others:	Specific Source: /	
Synthetic	☒	Starting material: MgCl ₂ , β-Nicotinamide mononucleotide, Adenosine 5'-triphosphate	Origin: China
Biotechnological processing	☐ Catalysis By Enzymes	Name of Enzyme: / Sources of Enzymes : /	
	☐ Fermentation	Source of Medium: / Strain: /	
Botanical Origin	Botanical Name:	/	
	Part:	/	
	Wild or Cultivated :	/	
	Country of Origin:	/	
	Solvent Used :	/	

3.Nutrition Data	
Nutritional Composition	☒ Per 100g ☐ Per Serving
☐ Energy (KJ) ☒ Energy (Kcal)	0kcal
Fat (g)	0
Carbohydrates (g)	0
Protein (g)	0
Sodium (mg)	0

Remarks: Nutrition Data Are Obtained By 3rd Party Lab; Tested on A Yearly Basis

4. Non-GMO Declaration

	YES	NO (Means Not Contain)
The product does not contain or consist of GMO	☐	☒
The product is not produced from GMO or not contain ingredients produced from GMO (irrespective of whether there is NDA or protein of GM origin in the final production)	☐	☒
This product is not produced by means of GM microorganism including precursor substances, e.g., with GMOs or Genetically Modified microorganisms processing aids (bacteria, yeast,).	☐	☒
This product is not produced with the help of enzymes, which were obtained from GMOs	☐	☒
Does the product contain any ingredients from animal?	☐	☒
If yes, are genetically modified crops contained in the feed for the animal?	☐	☒
We confirm that this product complies with regulations EC/1829/2003 and EC1831/2003 and keep non-GMO statement available.	☒	☐

5. Allergen Declaration

We have carefully reviewed this product according to EU Regulation 1169/2011 and modifications and confirm the following:

	Direct incorporation as a base raw material or in a derivative form (don't forget the carriers, the additives, and the processing aids)		CROSS CONTAMINATION					
			Presence on the production line		Presence on the production workshop		Presence on the production factory	
	Yes (Precise nature)	No	Yes (precise the nature)	No	Yes (precise the nature)	No	Yes (precise the nature)	No
Cereals containing gluten (1) and products thereof		N		N		N		N
Crustaceans and products thereof		N		N		N		N

Eggs and products thereof		N		N		N		N
Fish and products thereof (2)		N		N		N		N
Peanuts and products thereof		N		N		N		N
Soybeans and products thereof (3)		N		N		N		N
Milk and products thereof (including lactose) (4)		N		N		N		N
Nuts (5) or products thereof		N		N		N		N
Celery and products thereof		N		N		N		N
Mustard and products thereof		N		N		N		N
Sesame seeds and product thereof		N		N		N		N
Sulphur dioxide and sulphites at concentrations of more than 10mg/kg or 10 mg/l expressed as SO ₂		N		N		N		N
Lupines and products thereof		N		N		N		N
Mollusc and product thereof		N		N		N		N
1. Cereals which contain gluten (i.e. wheat, rye, barley, oats, spelt, kamut or their hybridised strains) except: wheat-based glucose syrups including dextrose, wheat-based maltodextrins, glucose syrups based on barley, cereals used for making distillates or ethyl alcohol of agricultural origin for spirit drinks and other alcoholic beverages; 2. Except: fish gelatine used as carrier for vitamin or carotenoid preparations, fish gelatine or Isinglass used as fining agent in beer and wine. 3. Except fully refined soybean oil and fat, natural mixed tocopherols (E306), natural D-alpha tocopherol, natural D-alpha tocopherol acetate, natural D-alpha tocopherol succinate from soybean sources; vegetable oils derived phytosterols and phytosterol esters from soybean sources; plant stanol ester produced from vegetable oil sterols from soybean sources. 4. Except when used for making distillates or ethyl alcohol of agricultural origin for spirit drinks and other alcoholic beverages, lactitol. 5. Almond (<i>Amygdalus communis</i> L.) hazelnuts (<i>Corylus avellana</i>), walnut (<i>Juglans regia</i>), cashew (<i>Anacardium occidentale</i>), pecan nuts (<i>Carya illinoensis</i>), Brazil nut (<i>Bertholletia excelsa</i>), pistachio nut (<i>Pistacia vera</i>), macadamia nut and Queensland nut (<i>Macadamia terniflora</i>) and products thereof, except nuts used for making distillates or ethyl alcohol of agricultural origin for spirit drinks and other alcoholic beverages;								

6. Non-Irradiation

(According to EU directive 1999/2/EC & 1999/3/EC)

This product has not been treated with ionising radiation	☐ YES	☒ NO, not treated
None of the raw materials we used for this product have been treated with ionising radiation.	☐ YES	☒ NO, not treated
We confirm above non-Irradiation statement is available	☒ YES	

7. Nanomaterial

(According to EU Regulation (EU) No. 1363/2013)

This product does not contain any nanomaterials as defined in EU food legislation	☐ YES	☒ NO, does not contain
This product has not been made with nanotechnology	☐ YES	☒ NO, is not made with nanotechnology
We confirm above non-Nanomaterial statement is available	☒ YES	

8. Residual Solvents

(According to UE Directive 2009/32 modified by (UE)2010/59; EP5.4; USP476; ICH Q3C(R7))

For this product following solvents are used during production process: Solvent A: max residual level:	☒ solvent used. ☐ solvent not used	
We confirm solvent residual of this product complies with:	☒ EP 7.0 ☒ USP <476> ☒ ICH Q3C(R7) ☒ Directive 2010/59/EU ☐ NA	
We confirm Solvent residual statement is available	☒ YES	

9. Pesticide Residual

(According to EC 396/2005; EP07; USP <561>)

This product is of vegetable origin	☒ YES ☐ NO
We confirm pesticide residual of this product complies with:	☒ EC 396/2005 ☒ EP 07/2008

	☒ USP<561> ☐ N/A
Pesticide residual statement available	☒ YES

10. BSE/TSE Information

(According to EU No. 2019/319; EP general chapter 5.2.8)

Cattle, sheep, goats, and other animals naturally susceptible to infection with transmissible spongiform encephalopathy (TSE) agents, or those susceptible to infection through the oral route (excluding humans and non-human primates), are defined as "BSE-relevant animal species." Pigs and birds, however, are not naturally susceptible to infection via the oral route and, therefore, are not considered TSE-relevant species. Similarly, dogs, rabbits, and fish are also not classified as TSE-relevant animal species.

The product contains no ingredients of ruminant origin and no materials derived from or exposed to ruminants affected by or under quarantine for Transmitting Transmissible Spongiform Encephalopathy (TSE) / Bovine Spongiform Encephalopathy (BSE).	☐ YES ☒ NO ☐ NA
In the manufacturing of this product, there is not any raw or source material and /or reagent used that is of animal origin i.e., bovine, serum-albumin, enzymes, culture broths including those used to prepare working or master cell tanks.	☐ YES ☒ NO
Equipment/systems/tools use for processing or storage of the material do not come into contact at any time with materials of animal origin (e.g., components of media filler used to check such system).	☐ YES ☒ NO
The material is not purified by using solvents, chromatographic media or buffers that contain components of animal origin.	☐ YES ☒ NO
We confirm this product complies with:	☒ EU legislation 999/2001 & ☒ EP general chapter 5.2.8
We confirm BSE/TSE statement is available	☒ YES

11. Contaminants Information

(According to UE regulation NO.1881/2006 and NO.629/2008 as regards maximum levels for certain contaminants in foodstuff)

Aflatoxin B1 <5ppb Aflatoxins B1 + B2 + G1 + G2 <10ppb Ochratoxin A <15ppb	☒ YES ☐ NO ☐ NA
Melamine Free	☒ YES
Dioxins, Furans, Polychlorinated Biphenyls Free	☒ YES
For polycyclic aromatic hydrocarbons, in cocoa fiber, banana chips, food supplements and their preparations, dried herbs <i>and dried spices</i> : Maximum level of 10 µg/kg of benzo(a)pyrene 50 µg/kg for the sum of PAH4 (PAH4; benzo[a]pyrene, chrysene, Benz[a]anthracene and benzo[b]fluoranthene) in food supplements	☒ YES ☐ NO ☐ NA
We confirm this product complies with NO.1881/2006 and NO.629/2008 and keep compliance statement available	☒ YES

12. WADA Statement

We confirm that none of the products manufactured or stored within our facility contain any prohormones, stimulants, steroids, or other substances listed on the current WADA (World Anti-Doping Agency) list.

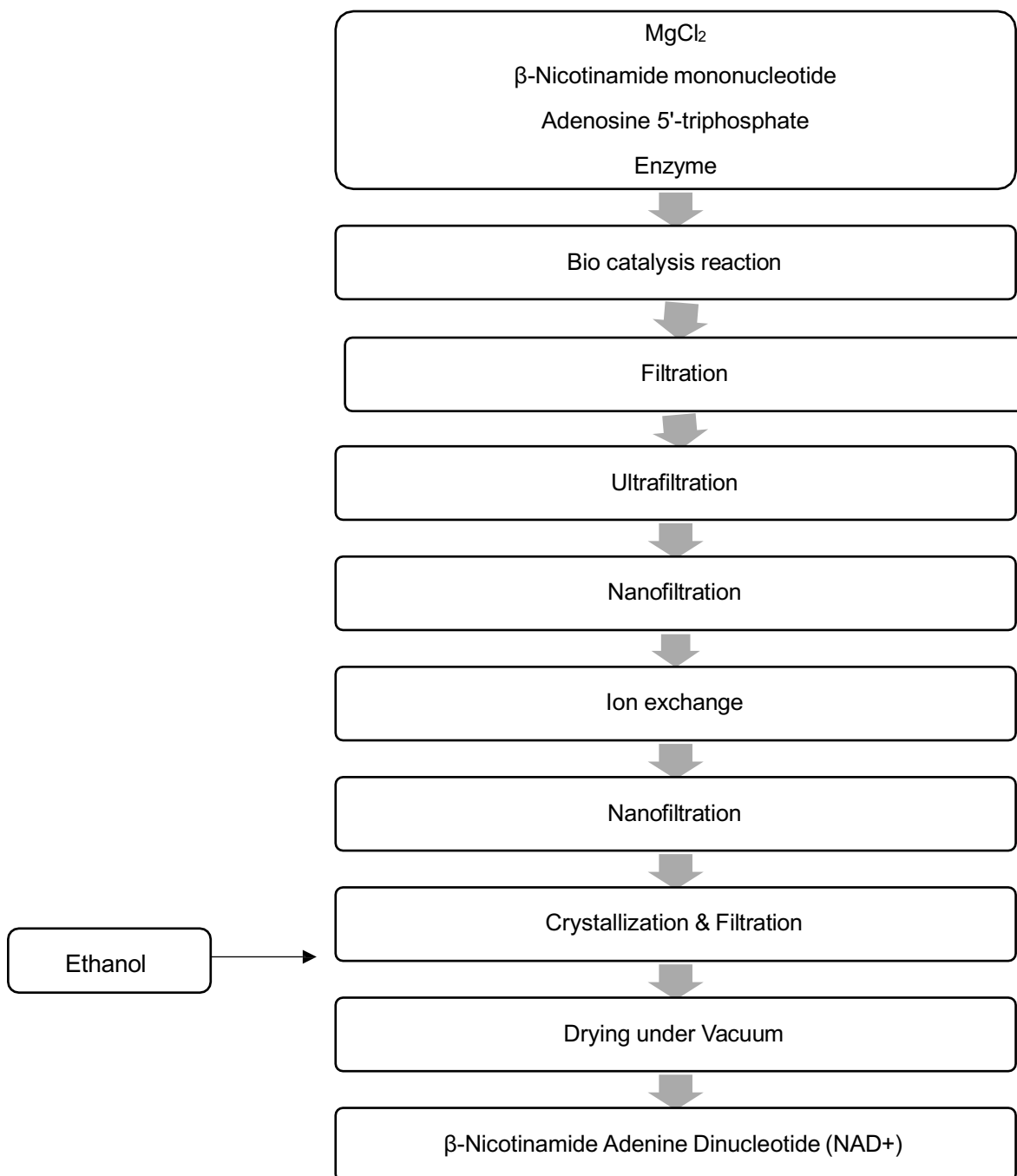
13. ETO Free Statement

We hereby confirm that ethylene oxide (ETO), 2-chloroethanol, or any other chemical sterilizing agents are not used during the manufacturing, storage, or transportation of our products.

14. Other Statements

We confirm Nitrates of this product complies with EU No 1258/2011	☒ YES ☐ NO ☐ NA
We confirm Mycotoxins / Aflatoxins of this product complies with EU No 165/2010	☒ YES ☐ NO ☐ NA
We confirm 3-MCPD of this product complies with EU No. 2020/1322	☒ YES ☐ NO ☐ NA
We confirm Pyrrolizidine alkaloids of this product complies with Regulation (EU) 2020/2040	☒ YES ☐ NO ☐ NA

Flow Chart of β -Nicotinamide Adenine Dinucleotide (NAD⁺)



Material Safety Data Sheet (MSDS)

1. PRODUCT

Product Name: β -Nicotinamide Adenine Dinucleotide (NAD⁺)

CAS#: 53-84-9

Usage: For Research purposes only, not as medicine, home medicine or other purposes.

2. HAZARD IDENTIFICATION

Consideration of human and environmental hazards.

In addition to the usual general precautions that should be observed when handling chemical compounds and recombinant proteins, there is at the date indicated above no indication of any hazardous properties.

NOTE: irritating to eyes, respiratory system, and skin. Slightly hazardous to water and ground.

3. COMPOSITION

NAME: Nicotinamide Adenine

Dinucleotide CAS number: 53-84-9

EC number: 200-184-4

Molecular Formula: $C_{21}H_{27}N_7O_{14}P_2 \cdot xH_2O$

Molecular Weight: 663.4 g/mol

NOTE: Labelling not required and contains no hazardous substances in concentrations to be declared.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove victim to fresh air. If the victim stops breathing, give artificial respiration.

Skin Contact: Rinse with soap and plenty of water.

Eye Contact: Rinse your eyes with water as a precaution above 15 minutes.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water.

Ingestion: Do not feed anything from the mouth of an unconscious person. Rinse your mouth with water.

5. FIRE FIGHTING MEASURES

Extinguishing Media: No restriction.

Decomposition: Dangerous decomposition is not anticipated.

6. ACCIDENTAL RELEASE MEASURES

If Spilt: Carefully sweep up avoiding dust

formation. Absorbent Material: N/A.

Special Measures: It is not necessary to put special measures in place for this product.

7. HANDLING AND STORAGE

Safe Handling: Avoid inhalation and minimize repeated or prolonged exposure. Avoid contact with eyes, skin, and clothing.

Storage: Refrigerate at +2 C° to +8 C° (short-term; < 6 months) or -20C° (long-term; >6 months).

NOTE: This product is shipped at ambient temperature. Ensure tight seal. Do Not Store Together With: No restriction.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Hygiene Measures: Wash hands thoroughly after use and before breaks. Respiratory Protection: Appropriate filter to be used during handling.

Eye Protection: Chemical safety goggles.

Hand Protection: Protective gloves.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands. The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection: Choose body protection in relation to its type, to the concentration and number of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount

of the dangerous substance at the specific workplace.

Respiratory protection: Respiratory protection is not required. Where protection from nuisance levels of dusts is 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).

Control of environmental exposure: Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Solid/Powder

Color: White or off-white.

Fire Promoting: No oxidizing properties. pH: 2.0~4.0

Solubility: Very soluble.

10. STABILITY AND REACTIVITY

Hazardous Reactions: None under normal use.

Hazardous Decomposition Products: No data.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Signs and Symptoms of Exposure:

The chemical, physical and toxicological properties have not been thoroughly investigated. However, intoxication has so far not become known.

Route of exposure:

Skin Contact: Skin irritation may be caused. Skin Absorption: May be harmful.

Eye Contact: Eye irritation may be caused.

Inhalation: May be harmful to mucous membranes and upper respiratory system.

Ingestion: May be harmful.

12.ECOLOGICAL INFORMATION

Water Hazard Class: 1 (German regulations [VwVwS]).

13.DISPOSAL CONSIDERATIONS

Contents: After dilution this product can be disposed of in general waste water according to local regulations.

Packaging: Non-contaminated outer paper packaging should be re-used or re-cycled as for any general paper waste. Packaging (glass vial, rubber bung and cap) used to contain this product should be disposed of in accordance with local regulations, i.e. the same as for any general chemical compound.

14.TRANSPORT INFORMATION

Non-hazardous for road (RID/ADR), sea (IMDG) and air (IATA/ICAO)

transport. DOT Classification: Not a DOT controlled material (United States).

The above captioned goods are non-hazardous materials for air transportation in any nature.

The report according of the IATA Dangerous Goods Regulations 63th Edition 2022 may be transported and applicable.

15.REGULATORY INFORMATION

U.S. Regulations:

U.S. CERCLA/SARA/TSCA Regulatory Information: The following chemicals are listed under the following TSCA/SARA/CERCLA lists. Refer to TSCA regulation if you need a definition for acronyms that may be shown in the TSCA Inventory field in the table below Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16.FURTHER INFORMATION

The above information has been presented to the best of our knowledge and is believed to be correct. However, it may not be accurate or inclusive, should only be

used as a guide, and is provided without warranty of any kind.

Among others, the recipient of this product is responsible for considering appropriate safety precautions and ensuring that existing laws and guidelines are fully observed.

We will not be held liable for damages resulting from handling, contact or use of this product.