

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.5

Revision Date 19.01.2023

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : DIHYDRONICOTINAMIDE ADENINE  
DINUCLEOTIDE DISODIUM SALT FOR  
BIOCHEMISTRY NADH-NA2

Product Number : 1.24644  
Catalogue No. : 124644  
Brand : Millipore  
REACH No. : A registration number is not available for this substance as the  
substance or its uses are exempted from registration, the  
annual tonnage does not require a registration or the  
registration is envisaged for a later registration deadline.

CAS-No. : 606-68-8

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Biochemical research/analysis

### 1.3 Details of the supplier of the safety data sheet

Company : Merck KGaA  
Frankfurter Str. 250  
D-64271 DARMSTADT

Telephone : +49 (0)6151 72-0  
Fax : +49 6151 727780  
E-mail address : TechnicalService@merckgroup.com

### 1.4 Emergency telephone

Emergency Phone # : +(44)-870-8200418 (CHEMTREC (GB))  
+(353)-19014670 (CHEMTREC Ireland)  
001-803-017-9114 (CHEMTREC India)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008

Pictogram none

Signal Word none



Hazard statement(s)	none
Precautionary statement(s)	none
Supplemental Hazard Statements	none
EUH210	Safety data sheet available on request.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula	: C <sub>21</sub> H <sub>27</sub> N <sub>7</sub> O <sub>14</sub> P <sub>2</sub> Na <sub>2</sub>
CAS-No.	: 606-68-8
EC-No.	: 210-123-3

Component	Classification	Concentration
<b>ethanol</b>		
CAS-No.	64-17-5	>= 1 - < 10 %
EC-No.	200-578-6	
Index-No.	603-002-00-5	
		Flam. Liq. 2; Eye Irrit. 2; H225, H319
		Concentration limits: >= 50 %: Eye Irrit. 2A, H319;

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available



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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Oxides of phosphorus

Sodium oxides

Fire may cause evolution of:

nitrogen oxides, Oxides of phosphorus

Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

### 5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage conditions

Protected from light. Tightly closed. Dry.

Recommended storage temperature see product label.

#### Storage class



Storage class (TRGS 510): 11: Combustible Solids

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

##### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: > 480 min

Material tested:KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: > 480 min

Material tested:KCL 741 Dermatril® L

##### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

##### Control of environmental exposure

Do not let product enter drains.



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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Physical state                               | powder   |
| b) Color  | yellow   |
| c) Odor   | No data available  |
| d) Melting point/freezing point                 | No data available  |
| e) Initial boiling point and boiling range      | No data available  |
| f) Flammability (solid, gas)                    | No data available  |
| g) Upper/lower flammability or explosive limits | No data available  |
| h) Flash point                                  | No data available  |
| i) Autoignition temperature                     | No data available  |
| j) Decomposition temperature                    | No data available  |
| k) pH   | No data available  |
| l) Viscosity                                    | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                             | No data available  |
| n) Partition coefficient: n-octanol/water       | No data available  |
| o) Vapor pressure                               | No data available  |
| p) Density                                      | No data available  |
| Relative density                                | No data available  |
| q) Relative vapor density                       | No data available  |
| r) Particle characteristics                     | No data available  |
| s) Explosive properties                         | Not classified as explosive.   |
| t) Oxidizing properties                         | none   |

### 9.2 Other safety information

No data available



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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### 10.2 Chemical stability

Decomposes on exposure to light.

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Alkali metals

Oxidizing agents

Reducing agents

Acid chlorides

Ammonia

Peroxides

Acids

### 10.4 Conditions to avoid

Exposure to moisture.

no information available

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - female - > 2.000 mg/kg (dihyronicotinamide-adenine dinucleotide, disodium salt)

(OECD Test Guideline 423)

Inhalation: No data available

Dermal: No data available

#### Skin corrosion/irritation

Skin - human skin (dihyronicotinamide-adenine dinucleotide, disodium salt)

Result: No skin irritation

(OECD Test Guideline 439)

#### Serious eye damage/eye irritation

Remarks: No data available

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

No data available

Test Type: Ames test

(dihyronicotinamide-adenine dinucleotide, disodium salt)



Test system: *S. typhimurium*  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available (dihydronicotinamide-adenine dinucleotide, disodium salt)

**11.2 Additional Information**

**Endocrine disrupting properties**

**Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (dihydronicotinamide-adenine dinucleotide, disodium salt)

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**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to daphnia and other aquatic invertebrates      semi-static test EC50 - *Daphnia magna* (Water flea) - > 100 mg/l - 48 h (dihydronicotinamide-adenine dinucleotide, disodium salt) (OECD Test Guideline 202)

Toxicity to algae      static test ErC50 - *Desmodesmus subspicatus* (green algae) - > 100 mg/l - 72 h (dihydronicotinamide-adenine dinucleotide, disodium salt) (OECD Test Guideline 201)

**12.2 Persistence and degradability**

Biodegradability      aerobic - Exposure time 28 d (dihydronicotinamide-adenine dinucleotide, disodium salt)  
Result: 90 % - Readily biodegradable.  
(OECD Test Guideline 301F)  
Remarks: No data available

**12.3 Bioaccumulative potential**

No data available





This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

## 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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### SECTION 16: Other information

#### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative



**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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