

SAFETY DATA SHEET (SDS)

SDS DATE : July, 2021

Section 1. Product And Company Identification

1. **Product identifier**
 - 1.1. Product Name : PicoSens™ NAD / NADH Assay Kit
 - 1.2. Product Code : BM-NDH-100
2. **Details of the supplier of the safety data sheet**
 - 2.1. Company: BIOMAX, Inc.,
 - 2.2. Address : Keumkang Penterium IX Tower CORE-C 7F, 46, Galmaesunhwan-ro 166beon-gil, Guri-si, Gyeonggi-do, Republic of Korea
 - 2.3. Telephone: +82-2-3296-3158
 - 2.4. Emergency Phone : +82-2-3296-3159
 - 2.5. FAX: +82-2-973-2858
3. **Product use**
 - 3.1. For research use only.

Section 2. Hazard identification

| Component | Description | Volume | Safety Information |
|----------------------------|---------------------------------------|-----------|--------------------|
| NAD/NADH Extraction Buffer | Proprietary Buffer | 25 mL x 2 | No hazards |
| NAD Assay Buffer | Proprietary Buffer (contains ethanol) | 15 mL | See below |
| NAD Enzyme | Lyophilized | 1 vial | No hazards |
| NAD(H) Probe | Proprietary Buffer | 1 mL | No hazards |
| Stop Solution | Liquid | 1 mL | No hazards |
| NADH Standard | Lyophilized | 1 vial | No hazards |

1.1 Ethanol

Emergency Overview

OSHA Hazards: : Highly flammable liquid, Target organ effect, Irritant, Carcinogen

Target Organs: Nerves, Liver, Heart

GHS Classification: : Flammable liquids (Category 2)

Skin irritation (Category 2)

Eye irritation (Category 2B)

Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Danger

Hazard statement(s): H225 Highly flammable liquid and vapor
H315+H320 Causes skin and eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s): P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2

Chronic Health Hazard: *

Flammability: 3

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 3

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Section 3. Composition/Information on ingredients

| Component | CAS Number | EC-No. | Molecular Weight | Formula |
|-----------|------------|-----------|------------------|---------------------------------|
| Ethanol | 64-17-5 | 200-578-6 | 46.07 | C ₂ H ₆ O |

Section 4. First Aid Measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Fire-fighting Measures

Ethanol:

Condition of flammability: Flammable in the presence of a source of ignition when the temperature is above the flash point.

Keep away from heat/sparks/open flame/hot surface. No smoking.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions— carbon oxides, nitrogen oxides.

Further information: Use water spray to cool unopened containers.

Section 6. Accidental Release Measures

Personal precautions: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

Methods for cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling And Storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition (no smoking).

Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20°C.

Section 8: Exposure Controls/Personal Protection

| Components | CAS-No. | Value | Control parameters | Basls |
|--|---------|-------|-----------------------------------|---|
| Ethanol | 64-17-5 | TWA | 1,000 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| Remarks: Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans. | | | | |
| | | TWA | 1,000 ppm 1,900 mg/m ³ | USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000 |
| | | TWA | 1,000 ppm 1,900 mg/m ³ | USA. Occupational Exposure Limits (OSHA): Table Z-1 Limits for Air Contaminants |
| The value in mg/m ³ is approximate | | | | |
| | | TWA | 1,000 ppm 1,900 mg/m ³ | USA. NIOSH recommended exposure limits |

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

Eye protection

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

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9: Physical And Chemical Properties

| Property | Ethanol |
|----------------------------|------------------------|
| Appearance: | Clear liquid |
| pH: | No data available |
| Water Solubility: | Completely soluble |
| Other Solubility: | No data available |
| Boiling Point (°C): | 78-80°C (172.4-176°F) |
| Melting Point (°C): | -144°C (-227.2°F) |
| Flash Point (°C): | 14°C (57.2°F) |
| Ignition Temperature (°C): | 363°C (685°F) |
| Density: | 0.79 g/cm ³ |

Section 10: Stability And Reactivity

| Property | Ethanol |
|------------------------------------|---|
| Chemical Stability: | Stable under recommended storage conditions |
| Conditions to Avoid: | Heat, flames, sparks, direct sunlight |
| Materials to Avoid: | Alkali metals, ammonia, oxidizing agents, peroxides |
| Hazardous decomposition: products: | Carbon oxides |

Section 11: Toxicological Information

Ethanol:

Acute toxicity: LD50 Oral – rat – 7,060 mg/kg Remarks: Lungs, thorax, or respiration: other changes

LC50 Inhalation – rat – 10 h – 20000 ppm

Skin corrosion/irritation: Skin – rabbit – irritating to skin – 24 h

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation – 24 h (Draize test)

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

Carcinogenicity – mouse – oral -> Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Liver: tumors. Blood: Lymphomas including Hodgkin's disease.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Reproductive toxicity – human – female – oral -> Effects on newborn: apgar score (human only), other neonatal measures or effects, and drug dependence.

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): Inhalation – may cause respiratory irritation.

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure:

Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional information: RTECS: KQ6300000

Section 12: Ecological Information

Persistence and degradability: no data available

Toxicity: Toxicity to fish: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

Section 13: Disposal Considerations

Product: Observe all federal, state, and local environmental regulations. Contact licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Dispose of as unused product.

Section 14: Transport Information

Ethanol:

DOT (US): UN-number: 1170

Class: 3

Packing group: II

Proper shipping name: Ethanol

Marine pollutant: No; Poison inhalation hazard: No

IMDG: UN-number: 1170

Class: 3

Packing group: II EMS-No: F-E, S-D

Proper shipping name: Ethanol

Marine pollutant: No

IATA: UN-number: 1170

Class: 3

Packing group: II

Proper shipping name: Ethanol

Section 15: Regulatory Information

1. **Regulation under the Occupational Safety and Health Act**
 - 1.1 Harmful Substances Required Permission for Manufacture - Not relevant
 - 1.2 Harmful Substances Prohibited from Manufacturing - Not relevant
 - 1.3 Carcinogenic Substances - Not relevant
 - 1.4 Controlled Substances Subject to Environment Monitoring - Not relevant
 - 1.5 Controlled Substances Subject to Health Examination - Not relevant
 - 1.6 Hazardous substances requiring management - Not relevant
 2. **Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**
 - 2.1 Toxic Chemicals - Not relevant
 - 2.2 Observational chemicals - Not relevant
 - 2.3 Restricted Chemicals - Not relevant
 - 2.4 Prohibited Chemicals - Not relevant
 - 2.5 Accident Precaution Chemicals - Not relevant
 3. **Dangerous Substances Safety Management Act**
 - 3.1 Not relevant
 4. **Wastes Control Act**
 - 4.1 Follow article 13 of the act to dispose the product waste
 5. **Other regulations**

KECI Number

Not in compliance with the inventory
-

Section 16: Other information

OTHER INFORMATION:

PREPARATION INFORMATION:

DISCLAIMER:

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. BIOMAX, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright BIOMAX, Inc., License granted to make unlimited paper copies for internal use only.