

# SAFETY DATA SHEET

Date Printed: 04/17/2024

Date Revised: 01/15/2022

## SECTION 1. IDENTIFICATION

**Product Identifier:** (4N) 99.99% Niobium Hydride

**Product Code:** NB-HID-04

**CAS Number:** 13981-86-7

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION



Signal Word: Danger

Hazard Statements

H228 - Flammable solid.

H260 - In contact with water releases flammable gases which may ignite spontaneously.

H319 - Causes serious eye irritation.

H335 - May cause respiratory irritation.

Precautionary Phrases

P210 - Keep away from heat/sparks/open flames/hot surfaces.

P231+P232 - Handle under inert gas. Protect from moisture.

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: 1

Fire: 2

Reactivity Hazard: 1

NFPA RATING:

Health: 1  
Flammability: 2  
Reactivity Hazard: 1  
EYE CONTACT: Causes serious eye irritation.  
SKIN CONTACT: Causes severe irritation to the skin.  
INHALATION: EXTREMELY HARMFUL! Causes irritation and burns to the nasal cavity and respiratory tract.  
INGESTION: May cause severe irritation if swallowed.

---

### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula: NbH  
Molecular Weight: 93.92  
CHEMICAL NAME: Niobium Hydride  
CAS#: 13981-86-7  
%wt: 100

---

### **SECTION 4. FIRST AID MEASURES**

#### **EYE EXPOSURE:**

Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

#### **SKIN EXPOSURE:**

Wash affected area with soap and plenty of water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

#### **INHALATION:**

Remove to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

#### **INGESTION:**

Seek medical attention. Keep the victim calm.

---

### **SECTION 5. FIREFIGHTING MEASURES**

FLASH POINT: Pyrophoric

Autoignition: Not available

EXPLOSION LIMITS: Contact with water releases hydrogen (Explosive)

EXTINGUISHING MEDIUM:

Use sand, carbon dioxide, or powdered extinguishing agent. NEVER USE WATER.

Contact with water liberates extremely flammable gases.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Hydrogen gas and niobium oxides

---

### **SECTION 6. ACCIDENTAL RELEASE MEASURES**

PERSONAL PRECAUTIONS:

Wear all appropriate equipment when using this material. Ensure adequate ventilation. Avoid the formation of dust. Avoid breathing vapors, mist, gas, or dust. Keep away from sources of ignition.

**ENVIRONMENTAL PRECAUTIONS:**

Prevent spillage from entering drains or allowing to be released into the environment.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:**

Shut off all sources of ignition. Wearing appropriate protective equipment, cover spill with dry lime, dry sand, or soda ash. Sweep up and place in suitable container for proper disposal.

---

## **SECTION 7. HANDLING AND STORAGE**

**PRECAUTIONS FOR SAFE HANDLING:**

Wear appropriate personal protective equipment.

Avoid contact with skin and eyes.

Use with adequate ventilation.

Avoid formation of dusts and aerosols.

Keep away from heat, sparks, and open flames. Protect against electrostatic charges.

**CONDITIONS FOR SAFE STORAGE:**

Store in cool, dry, and well-ventilated area.

Protect from moisture. Reacts violently with water and will liberate highly flammable gases.

---

## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**EXPOSURE CONTROLS:**

Contains no substances with occupational exposure limit values.

**EYE PROTECTION:** Wear chemical safety glasses or goggles and face shield.

**SKIN PROTECTION:** Wear nitrile or rubber gloves, and a complete suit protecting against chemicals.

**VENTILATION:**

Provide local exhaust, preferably mechanical.

**RESPIRATOR:**

Use an approved respirator.

**ADDITIONAL PROTECTION:**

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

---

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**COLOR AND FORM:**

Gray powder

**ODOR:**

None

**MOLECULAR WEIGHT:**

93.92

**BOILING POINT:**

No data available

**MELTING POINT:**

500°C (dec.)

**SPECIFIC GRAVITY:**

6.6 gm/ml

**VAPOR DENSITY:**

No data available

**SOLUBILITY:**

Contact with water releases flammable gases

---

**SECTION 10. STABILITY AND REACTIVITY**

**STABILITY:**

Pyrophoric in atmosphere

**HAZARDOUS POLYMERIZATION:**

Contact with water releases flammable gases, which may ignite spontaneously

**CONDITIONS TO AVOID:**

Air and humidity

**INCOMPATIBILITY:**

Oxidizing agents, halogens and interhalogens, water, and moisture

**DECOMPOSITION PRODUCTS:**

Hydrogen gas and niobium oxides

---

**SECTION 11. TOXICOLOGICAL INFORMATION**

**ACUTE TOXICITY:**

Not available

**CARCINOGENIC EFFECTS:**

No components of this product present at levels greater than or equal to 0.1% is identified a carcinogen.

**MUTAGENIC EFFECTS:**

Not available

**TETRATOGENIC EFFECTS:**

Not available

**CHRONIC TOXICITY:**

Not available

**RTECS:**

No data

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

---

**SECTION 12. ECOLOGICAL INFORMATION**

No data available

---

**SECTION 13. DISPOSAL CONSIDERATIONS**

Dispose of in according to local, state, and federal regulation

---

**SECTION 14. TRANSPORT INFORMATION**

UN

1409

Metal hydrides, water-reactive, n.o.s.  
(Niobium hydride)  
CLASS 4.3  
PG I  
Marine Pollutant: No

---

## **SECTION 15. REGULATORY INFORMATION**

TSCA: Listed in the TSCA inventory  
SARA 302/304: Not Listed  
SARA 311/312: Not Listed  
SARA (TITLE 313): Not Listed  
CALIFORNIA PROP. 65: Not Listed  
WHMIS CANADA: Class B-6: Reactive flammable material. Class D-2A: Very toxic material causing other toxic effects.  
MASSACHUSETTS RIGHT TO KNOW COMPONENTS: No components are subject to the Massachusetts Right to Know Act.  
NEW JERSEY RIGHT TO KNOW COMPONENTS: No components are subject to the New Jersey Right to Know Act.  
PENNSYLVANIA RIGHT TO KNOW COMPONENTS: No components are subject to the Pennsylvania Right to Know Act

---

## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). 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. American Elements 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 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.