

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: Niobium**Formula :** Nb**Product Code:** R-Nb-1001**Chemical Family:** Metal**Synonyms:** Niobium metal; columbium**Atomic Weight:** 92.91**Manufacturer:**

Rhexon Metals Co., Ltd.

Red Stone Technology Building, No.512 Wenchuan Rd, Shanghai, China 201906

Tel: +86 21 33191726

Fax: +86 21 33191728

Email: info@rhexon.com

Http:www.rhexon.com

EMERGENCY PHONE:**SMEC:** (0086) 21 24027777 (Monday-Friday 8:30a.m.-16:30p.m.)

(0086) 120 (24 Hours)

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS No.	Wt%
Nb	7440-03-1	100

SECTION 3 HAZARDS IDENTIFICATION

ROUTES OF ENTRYInhalation Skin Eyes Ingestion Others **CARCINOGEN LISTED IN**

NO DATA

POTENTIAL HEALTH EFFECTS:**Inhalation:**

Acute: May cause irritation to the nose and throat.

Chronic: May cause kidney damage and fibrogenic effects on the lungs.

Skin:

Acute: SEVERE IRRITANT.

Chronic: No chronic health effects recorded.

Eyes:

Acute: SEVERE IRRITANT.

Chronic: No chronic health effects recorded.

Ingestion:

Acute: No acute health effects recorded.

Chronic: No chronic health effects recorded.

Signs and Symptoms:

Inhalation: May cause a red, dry, sore throat.

Skin: May cause redness and inflammation.

Eyes: May cause redness, itching and watering.

Ingestion: No acute or chronic health effects recorded.

Target Organs: May affect the kidneys and lungs.

SECTION 4 FIRST AID MEASURES

Eyes: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Skin: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

Inhalation: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.

Ingestion: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURE

Flammable Properties:

Flash point: Not Applicable

Method used: Not flammable

Explosive limits: LEL/UEL: Not applicable

Auto-ignition Temperature: Solid metal will not ignite. High surface area material such as 5 micron powder may autoignite at room temperature.

Unusual Fire and Explosion Hazards:

Ignites in fluorine or chlorine.

Incandescent reaction with bromine trifluoride.

Extinguishing Media: Use suitable extinguishing media for surrounding materials and type of fire.

Special Fire Fighting Procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Use non-sparking tools.

SECTION 7 HANDLING AND STORAGE

Handling: Handle in accordance with all current regulations and standards. Use methods to minimize dust. Machining of niobium may result in fine turnings, chips or dust. Any material with a dimension of less than .001" is flammable. Keep away from any source of ignition. Do not accumulate large quantities of fines or machining residues. Dispose of these materials daily.

Storage: Store this material in a cool, dry and well-ventilated area. Keep containers tightly closed.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local and general exhaust ventilation is recommended to control any airborne contaminants and to reduce potential exposure.

Personal protection

Eyes: wear chemical safety glasses or goggles

Skin: gloves are recommended when handling solids

Respirator: A NIOSH approved air purifying respirator with a particulate filter or a HEPA dust mask is recommended under certain circumstances where airborne concentrations are expected to be elevated or when ventilation is not available.

Avoid breathing dust.

Other: avoid the use of contact lens in high fume and dust areas. Maintain good housekeeping. Clear up spills immediately. Source of clear water should be available. Good person hygiene is essential. Avoid eating, drinking, or smoking in the work area. Wash hand thoroughly with soap and water immediately upon leaving the working area.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Steel gray, lustrous pieces

Odor: no odor

Boiling Point: 5127.00 C (9260.6 F)

Melting Point: 2458.00 C (4456.4 F) ~ 2478.00 C (4492.4 F)

Specific Gravity: 8.57 gm/cc at 22.0 C (71.6 F)

Solubility in water: insoluble

PH: No data

Percent volatile: No data

SECTION 10 STABILITY AND REACTIVITY

General: stable
Conditions to Avoid: None
Incompatible Materials: Halogens and interhalogens
Hazardous Decompositions or byproducts: Hydrogen, fumes of nitrogen oxide, corrosive niobium halide vapors
Hazardous Polymerization: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Carcinogenicity
Occupational Safety & Health Administration (OSHA) NO
U.N. International Agency for Research on Cancer (IARC) NO

Irritancy of product : may be a irritancy
Sensitization to product: not established
Reproductive toxicity: not establish
Mutagenicity: not established
Teratogenicity: not established
synergistic products: not established

SECTION 12 ECOLOGICAL INFORMATION

Do not allow material to be released to the environment without proper governmental permits.

SECTION 13 DISPOSAL CONSIDERATIONS

Consult local or national regulations to ensure proper disposals

SECTION 14 TRANSPORT INFORMATION

Not a hazardous material for transportation. Transport in accordance with applicable regulations and requirements.

SECTION 15 OTHER INFORMATION

HMIS Hazard Rating

Minimal 0 ; Slight 1 ; Moderate 2; Serious 3; Extreme 4

Health 0

Flammability 0

Reactivity: 0

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