

MATERIAL SAFETY DATA SHEET

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SECTION 1 - IDENTIFICATION

Product Name: Niobium
Synonyms: Columbium
Chemical Family: Refractory Metal
CAS#: 7440-03-1
Molecular formula: Nb (Cb)
EINECS Number: 213-113-5

SECTION 2 - INGREDIENTS

Chemical:	Nb		
CAS#	%	PEL	TLV
7440-03-1	100	n/a	n/a

SECTION 3 - PHYSICAL DATA

Boiling Point: 4927C
Ignition Temperature n/a
Solubility in Water: Insoluble
Freezing/Melting Point: 2468C
Evaporation Rate (butyl acetate = 1): 0
Molecular Weight: 92.91
Vapor Pressure: Not Determined
Appearance and odor: Silver grey metal
Other: No data

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Auto-ignition Temperature: n/a
Extinguishing Media: Dolomite, dry sand, soda ash, sodium chloride.
 Dry powders for metal fires.

Special Fire Fighting Procedures:

Use normal firefighting procedures which include wearing NIOSH/MSHA approved self-contained breathing apparatus, flame and chemical resistant clothing, hats, boots, and gloves. If without risk, remove material from fire area.

SECTION 5 - HEALTH DATA

A. ANIMAL TOXICITY

LD50: No data
LC50: No data
Other: No data

B. EFFECTS OF EXPOSURE**ACUTE EFFECTS**

Ingestion: May cause irritation of the digestive tract.
Skin Contact: Powder or dust may cause irritation.
Eye Contact: Powder or dust may cause eye irritations.
Inhalation: Powder or dust may irritate mucous membranes and upper respiratory tract.
Other Health Hazards: None known.
Most Likely Routes of Entry: Ingestion

C. EMERGENCY AND FIRST AID PROCEDURES**Ingestion:**

Do Not Induce Vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water.

Skin Contact:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention if redness, swelling, itching or burning occur. Wash clothing before reuse.

EyeContact:

Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.

Inhalation:

Remove to fresh air. If required provide artificial respiration. Seek immediate medical attention.

SECTION 6 - REACTIVITY

Incompatibility: Oxidizers – Fire and explosion hazard
Mineral acids – incompatible
Fluorine – Incandescent reaction
Bromine Trifluoride – Incandescent reaction
Chlorine – Ignition at 205C

Dangerous Reactions: n/a

Hazardous Decomposition Products: n/a

Stability: Stable under normal conditions.

Conditions to Avoid: Dust generation, heat and sources of ignition.

SECTION 7 - ENVIRONMENTAL INFORMATION

RCRA Code: Not listed

Spill and Leak Procedures: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

Waste Disposal: Consult state, local or federal EPA regulations for proper disposal.

SECTION 8 - PROTECTION INFORMATION

Respiratory Protection:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Protective Gloves:

Rubber

Eye/Face Protection:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Other:

Keep away from food stuffs, beverages, and feed. Avoid contact with skin and wash hands before eating and at the end of the work day.

SECTION 9 - SPECIAL PRECAUTIONS

Handling and storage:

Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash hands thoroughly after use.

Transportation – Not regulated

SECTION 10 - COMMENTS

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet or in combination with any other product or process, is the responsibility of the user.