

<a href="#">Niobium Balls</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Band</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Bars</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Blocks</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Boats</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Cathodes</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Chips</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Chunk</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Coil</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Concentrate</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Crucibles</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Cylinder</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Disc</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Flake</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Flange</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Foam</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Foil</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Formed Cups</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Gauze</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Granules</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Honeycomb</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Ingot</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Insulated Wire</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Lump</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Mesh</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Metal</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Microfoil</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Microleaf</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Nanoparticle Dispersion</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Nanoparticles</a>	<a href="#">Pricing &gt;</a>

<a href="#">Niobium Nanoprisms</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Nanorods</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Particles</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Parts</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Pellets</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Pieces</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Plate</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Powder</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Puck</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Ribbon</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Ring</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Rod</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Rotatable Sputtering Target</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Samples</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Shavings</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Sheet</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Shot</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Single Crystal</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Sleeve</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Slugs</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Specimen</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Spheres</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Sponge</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Spring</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Sputtering Target</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Strip</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Tablets</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Tape</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Tube</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Turnings</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Wafer</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Washer</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Wire</a>	<a href="#">Pricing &gt;</a>
<a href="#">Niobium Wool</a>	<a href="#">Pricing &gt;</a>

[Ultra Thin Niobium Nanofoil](#)[Pricing >](#)

<b>Linear Formula</b>	Nb
<b>Pubchem CID</b>	23936
<b>MDL Number</b>	MFCD00011126
<b>EC No.</b>	231-113-5
<b>Beilstein/Reaxys No.</b>	N/A
<b>SMILES</b>	[Nb]
<b>Inchl Identifier</b>	InChI=1S/Nb
<b>Inchl Key</b>	GUCVJGMIXFAOAE-UHFFFAOYSA-N
<b>Signal Word</b>	N/A
<b>Hazard Statements</b>	N/A
<b>Hazard Codes</b>	N/A
<b>Precautionary Statements</b>	N/A
<b>Flash Point</b>	Not applicable
<b>Risk Codes</b>	N/A
<b>Safety Statements</b>	N/A
<b>RTECS Number</b>	N/A
<b>Transport Information</b>	NONH
<b>WGK Germany</b>	NONH

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## SAFETY DATA SHEET

Date Accessed: 05/19/2022

Date Revised: 05/15/2015

### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #7440-03-1

**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:  
Domestic, North America +1 800-424-9300

## **SECTION 2. HAZARDS IDENTIFICATION**

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The substance is not classified as hazardous to health or the environment according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

N/A

Information concerning particular hazards for human and environment:

No data available

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

N/A

Hazard pictograms

N/A

Signal word

N/A

Hazard statements

N/A

WHMIS classification

Not controlled

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

0

0

0

Health (acute effects) = 0

Flammability = 0

Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

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

Substances

CAS No. / Substance Name:

7440-03-1 Niobium

Identification number(s):  
EC number: 231-113-5

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

Description of first aid measures

General information

No special measures required.

If inhaled:

Seek medical treatment in case of complaints.

In case of skin contact:

Generally the product does not irritate the skin.

In case of eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

If swallowed:

If symptoms persist consult doctor.

Information for doctor

Most important symptoms and effects, both acute and delayed

No data available

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents

Water

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Metal oxide fume

Advice for firefighters

Protective equipment:

No special measures required.

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

Personal precautions, protective equipment and emergency procedures

Not required.

Environmental precautions:

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

Do not allow product to enter drains, sewage systems,

or other water courses.

Do not allow material to penetrate the ground or soil.

Methods and materials for containment and cleanup:

Pick up mechanically.

Prevention of secondary hazards:

No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information

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

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Information about protection against explosions and fires:

No special measures required.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

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

Additional information about design of technical systems:

No further data; see section 7.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that should be monitored at the workplace.

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Not required.

Protection of hands: Not required.

Penetration time of glove material (in minutes): No data available

Eye protection: Safety glasses

Body protection: Protective work clothing.

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

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: Silver grey

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 2477 °C (4491 °F)

Boiling point/Boiling range: 4927 °C (8901 °F)

Sublimation temperature / start: No data available

Flammability (solid, gas): No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density at 20 °C (68 °F): 8.57 g/cm<sup>3</sup> (71.517 lbs/gal)

Relative density: No data available.

Vapor density: N/A

Evaporation rate: N/A

Solubility in Water (H<sub>2</sub>O): Insoluble

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information

No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions  
Reacts with strong oxidizing agents  
Conditions to avoid  
No data available  
Incompatible materials:  
Acids  
Oxidizing agents  
Hazardous decomposition products:  
Metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity: No effects known.  
LD/LC50 values that are relevant for classification: No data  
Skin irritation or corrosion: May cause irritation  
Eye irritation or corrosion: May cause irritation  
Sensitization: No sensitizing effects known.  
Germ cell mutagenicity: No effects known.  
Carcinogenicity:  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.  
Reproductive toxicity: No effects known.  
Specific target organ system toxicity - repeated exposure: No effects known.  
Specific target organ system toxicity - single exposure: No effects known.  
Aspiration hazard: No effects known.  
Subacute to chronic toxicity: No effects known.  
Additional toxicological information:  
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity  
Aquatic toxicity:  
No data available  
Persistence and degradability  
No data available  
Bioaccumulative potential  
No data available  
Mobility in soil  
No data available



Additional ecological information:  
Do not allow material to be released to the environment without official permits.  
Avoid transfer into the environment.  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A  
Other adverse effects  
No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods  
Recommendation  
Consult official regulations to ensure proper disposal.  
Uncleaned packagings:  
Recommendation:  
Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

UN-Number  
DOT, ADN, IMDG, IATA  
N/A  
UN proper shipping name  
DOT, ADN, IMDG, IATA  
N/A  
Transport hazard class(es)  
DOT, ADR, ADN, IMDG, IATA  
Class  
N/A  
Packing group  
DOT, IMDG, IATA  
N/A  
Environmental hazards:  
N/A  
Special precautions for user  
N/A  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code  
N/A  
Transport/Additional information:  
DOT  
Marine Pollutant (DOT):  
No

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)  
Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer  
Substance is not listed.

Prop 65 - Developmental toxicity  
Substance is not listed.

Prop 65 - Developmental toxicity, female  
Substance is not listed.

Prop 65 - Developmental toxicity, male  
Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

Substance is not listed.

REACH - Pre-registered substances

Substance is listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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## **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.

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