



# CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

**MATERION**

Product name: Niobium Powder

Issue date: 05-12-2022

Version #: 01

SDS No: H06

## SECTION 1 Chemical product and company identification

Chinese name of chemical	铌粉
English name of chemical	Niobium Powder
Synonyms	C103
Manufacturer/Supplier	Materion Newton Inc.
Address	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States
Contact person	Theodore Knudson
Telephone	1+216.383.4019
e-mail	ehs@materion.com
Emergency telephone number	See Section 16.
Issue date	05-12-2022
SDS No	H06

## SECTION 2 Hazards identification

Emergency overview	Flammable Solid.	
GHS hazard categories		
Physical hazards	Flammable solids	Category 2
Health hazards	Not classified.	
Environmental hazards	Not classified.	
Label elements		
Pictograms		
Signal word	Danger	
Hazard statement		
H228	Flammable solid.	
Precautionary statement		
Prevention		
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.	
P240	Ground and bond container and receiving equipment.	
P241	Use explosion-proof electrical/ventilating/lighting/equipment.	
P280	Wear protective gloves/eye protection/face protection.	
Response		
	Wash hands after handling.	
P370 + P378	In case of fire: Use appropriate media to extinguish.	
Storage	Store away from incompatible materials.	
Disposal		
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Physical and chemical hazards	Not available.	

<b>Health hazards</b>	Not available.
<b>Environmental hazards</b>	Not available.
<b>Supplemental information</b>	For further information, please contact the Product Stewardship Department at +1.216.383.4019.

### SECTION 3 Composition/information on ingredients

<b>Substance/mixture</b>	Substance		
<b>Chemical name</b>	<b>Concentration (%)</b>	<b>CAS Number</b>	
铌粉 Niobium Powder	100	7440-03-1	

### SECTION 4 First aid measures

<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. Consult a physician for specific advice.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Flush eyes with water as a precaution.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Consult a physician.
<b>Most important symptoms and health effects</b>	None known.
<b>Personal protection for first-aid responders</b>	Consult a physician. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
<b>Notes to physician</b>	Provide general supportive measures and treat symptomatically.

### SECTION 5 Fire-fighting measures

<b>Extinguishing media</b>	Water spray, fog, CO2, dry chemical, or alcohol resistant foam.
<b>Extinguishing media to avoid</b>	None.
<b>Specific hazards</b>	Niobium oxides.
<b>Special fire fighting procedures</b>	In the event of fire, wear self-contained breathing apparatus.
<b>Protection of fire-fighters</b>	Wear suitable protective equipment.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

### SECTION 6 Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	
<b>For non-emergency personnel</b>	Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Evacuate the area promptly. Avoid inhalation of dust and vapors. For personal protection, see section 8 of the SDS.
<b>For emergency responders</b>	Keep unnecessary personnel away.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not allow to enter drains, sewers or watercourses.
<b>Clean-up methods and materials and containment measures</b>	Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container. For waste disposal, see section 13 of the SDS.
<b>Prevention of secondary hazards</b>	Not available.

### SECTION 7 Handling and storage

<b>Handling</b>	Avoid formation of dusts and aerosols. Combustible dust clouds may be created where operations produce fine material (dust). Observe good industrial hygiene practices.
<b>Storage</b>	Storage class (TRGS 510): 4.2 (Pyrophoric or self-heating substances) Keep container tightly closed in a cool, well-ventilated place. Keep container dry. Store away from incompatible materials (see Section 10 of the SDS).

## SECTION 8 Exposure controls/personal protection

### Exposure limits

No exposure limits noted for ingredient(s).

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Exposure guidelines

This material does not have established exposure limits.

### Monitoring methods

Not available.

### Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Personal protective equipment

#### Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

#### Hand protection

Wear gloves to prevent metal cuts and skin abrasions during handling.

#### Eye protection

Wear approved safety glasses, goggles, face shield and/or welder's helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.

#### Skin and body protection

Flame retardant protective clothing is recommended.

### Hygiene measures

Wash hands before breaks and immediately after handling the product.

## SECTION 9 Physical and chemical properties

### Appearance

#### Physical state

Solid.

#### Form

Powder

#### Color

Grey.

### Odor

None.

### Odor threshold

Not applicable.

### pH

Not applicable.

### Melting point/freezing point

4474.4 °F (2468 °C) / Not applicable.

### Boiling point, initial boiling point, and boiling range

Not applicable.

### Flash point

Not applicable.

### Flammability limit - lower (%)

Not available.

### Flammability limit - upper (%)

Not available.

### Explosive limit - lower (%)

Not applicable.

### Explosive limit - lower (%)

Not applicable.

### temperature

### Explosive limit - upper (%)

Not applicable.

### Explosive limit - upper (%)

Not applicable.

### temperature

### Vapor pressure

Not applicable.

### Vapor density

Not applicable.

### Relative density

Not applicable.

### Density

8.57 g/cm<sup>3</sup> at 25°C

### Solubility(ies)

#### Solubility (water)

Insoluble.

### Partition coefficient (n-octanol/water)

Not applicable.

### Auto-ignition temperature

Not applicable.

### Decomposition temperature

Not applicable.

### Evaporation rate

Not applicable.

**Flammability (solid, gas)** None known.

**Other data**

**Molecular formula** Nb

**Molecular weight** 92.91 g/mol

**Viscosity** Not applicable.

## SECTION 10 Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**Stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**Conditions to avoid** Contact with incompatible materials.

**Incompatible materials** Strong bases. Strong oxidizing agents. Halogens. Oxygen.

**Hazardous decomposition products** No hazardous decomposition products are known.

## SECTION 11 Toxicological information

**Acute toxicity** None known.

**Routes of exposure** Not established.

**Symptoms** None known.

**Skin corrosion/irritation** Not classified.

**Serious eye damage/eye irritation** Not likely, due to the form of the product.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not a respiratory sensitizer.

**Skin sensitizer** Not a skin sensitizer.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** Not classified.

**Toxic to reproduction** Not classified.

**Specific target organ toxicity following single exposure** Not classified.

**Specific target organ toxicity following repeated exposure** Not classified.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** No data recorded.

## SECTION 12 Ecological information

**Ecotoxicity** Not available.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulation** No data available.

**Mobility in soil** No negative effects on the aquatic environment are known.

**Other hazardous effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13 Disposal considerations

**Residual waste** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**Local disposal regulations**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**SECTION 14 Transport information****CNDG**

UN number	UN3089
UN proper shipping name	METAL POWDER, FLAMMABLE, N.O.S.
Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Packing group	II
Special precautions for user	Not available.

**IATA**

UN number	UN3089
UN proper shipping name	Metal powder, flammable, n.o.s.
Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Packing group	II
Environmental hazards	No.
ERG Code	3L
Special precautions for user	Not available.
Other information	

Passenger and cargo aircraft	Allowed with restrictions.
------------------------------	----------------------------

Cargo aircraft only	Allowed with restrictions.
---------------------	----------------------------

**IMDG**

UN number	UN3089
UN proper shipping name	METAL POWDER, FLAMMABLE, N.O.S.
Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-G, S-G
Special precautions for user	Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
--------------------------------------------------------------------------	-----------------

CNDG; IATA; IMDG

**SECTION 15 Regulatory information**

Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Not regulated.

**Regulations on the Control over Safety of Dangerous Chemicals**

Not regulated.

**Provision on the Environmental Administration of New Chemical Substances****China Inventory of Existing Chemical Substances**

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**International regulations****Stockholm Convention**

Not applicable.

**Rotterdam Convention**

Not applicable.

**Montreal Protocol**

Not applicable.

**Kyoto protocol**

Not applicable.

**Basel Convention**

Not applicable.

**SECTION 16 Other information****References**

EPA: AQUIRE database  
 NLM: Hazardous Substances Data Base  
 US. IARC Monographs on Occupational Exposures to Chemical Agents

**Further information**

Transportation Emergency  
 Call Chemtrec at:  
 US: 800.424.9300  
 International: 703.741.5970  
 Spain: 900.868.538  
 Switzerland: 0800.564.402  
 Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059  
 South Korea Toll-free Number – 080-880-0468

**Disclaimer**

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.