



PRODUCT INFORMATION SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Name of the substance Niobium Powder
Identification number 231-113-5 (EC number)
Registration number -
Document number H06
Synonyms C103
Issue date 12-May-2022
Version number 01

1.3. Details of the supplier of the product information sheet

Supplier

Company name Materion Newton Inc.
Address 6070 Parkland Boulevard
Mayfield, Heights, OH 44124
United States
Division
Telephone 1+216.383.4019
e-mail ehs@materion.com
Contact person Theodore Knudson

1.4. Emergency telephone number See Section 16.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Manufacture of computer, electronic and optical products, electrical equipment
Scientific research and development
Other: Manufacture of medical and defense equipment
Uses advised against Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Consumer uses: Private households (= general public = consumers)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards
Flammable solids Category 2

Hazard summary Flammable solid.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Niobium Powder

Hazard pictograms



Signal word Danger

Hazard statements
H228 Flammable solid.

Precautionary statements

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.

Supplemental label information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.1. Substances

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Niobium Powder	100	7440-03-1 231-113-5	-	-	

Classification: Flam. Sol. 1;H228

SECTION 4: First aid measures

General information

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.

4.1. Description of first aid measures

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. Consult a physician for specific advice.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Flush eyes with water as a precaution.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

None known.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media

Water Spray, Fog, CO2, dry chemical, or Alcohol Resistant Foam

Unsuitable extinguishing media

None.

5.2. Special hazards arising from the substance or mixture

Niobium oxides.

5.3. Advice for firefighters

Special protective equipment for firefighters

Wear suitable protective equipment.

Special firefighting procedures

In the event of fire, wear self-contained breathing apparatus.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Evacuate the area promptly. Avoid inhalation of dust and vapours. For personal protection, see section 8 of the SDS.

For emergency responders

Keep unnecessary personnel away.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up 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.

6.4. Reference to other sections Not available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid formation of dusts and aerosols. Combustible dust clouds may be created where operations produce fine material (dust). Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities 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).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Material	Type	Value	Form
Niobium Powder (CAS 7440-03-1)	MAK	5 mg/m ³	Inhalable fraction.
	STEL	0,5 mg/m ³	Fume and respirable dust.
		10 mg/m ³	Inhalable fraction.
		1 mg/m ³	Fume and respirable dust.

Denmark. Exposure Limit Values

Material	Type	Value	Form
Niobium Powder (CAS 7440-03-1)	TLV	5 mg/m ³	Dust.
		0,5 mg/m ³	Fume.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Material	Type	Value	Form
Niobium Powder (CAS 7440-03-1)	TWA	5 mg/m ³	Dust.
		0,5 mg/m ³	Fume.

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

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

Exposure guidelines This material does not have established exposure limits.

8.2. Exposure controls

Appropriate engineering controls 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.

Individual protection measures, such as personal protective equipment

General information Handle in accordance with good industrial hygiene and safety practices.

Eye/face 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 protection

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

- Other Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state Solid.
Form Powder.
Colour Grey.

Odour None.

Odour threshold Not applicable.

pH Not applicable.

Melting point/freezing point 2468 °C (4474,4 °F) / Not applicable.

Initial boiling point and boiling range Not applicable.

Flash point Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) None known.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not applicable.

Explosive limit - lower (%) temperature Not applicable.

Explosive limit – upper (%) Not applicable.

Explosive limit - upper (%) temperature Not applicable.

Vapour pressure Not applicable.

Vapour density Not applicable.

Relative density Not applicable.

Solubility(ies)

Solubility (water) Insoluble.

Partition coefficient (n-octanol/water) Not applicable.

Auto-ignition temperature Not applicable.

Decomposition temperature Not applicable.

Viscosity Not applicable.

Explosive properties Not available.

Oxidising properties Not available.

9.2. Other information

Density 8,57 g/cm³ at 25°C

Molecular formula Nb

Molecular weight 92,91 g/mol

SECTION 10: Stability and reactivity

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

10.2. Chemical stability Material is stable under normal conditions.

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

10.4. Conditions to avoid Contact with incompatible materials.

10.5. Incompatible materials Strong bases. Strong oxidising agents. Halogens. Oxygen.

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

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Not likely, due to the form of the product.
Skin contact	Not likely, due to the form of the product.
Eye contact	Dust may irritate the eyes.
Ingestion	Expected to be a low ingestion hazard.

Symptoms None known.

11.1. Information on toxicological effects

Acute toxicity	None known.
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not likely, due to the form of the product.
Respiratory sensitisation	Not a respiratory sensitizer.
Skin sensitisation	Not a skin sensitizer.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Mixture versus substance information	No information available.
Other information	This product has no known adverse effect on human health.

SECTION 12: Ecological information

12.1. Toxicity	No toxicity data noted for the ingredient(s).
12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse 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

13.1. Waste treatment methods

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	Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	Not available.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN3089
14.2. UN proper shipping name	METAL POWDER, FLAMMABLE, N.O.S.
14.3. Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Label(s)	4.1
Hazard No. (ADR)	40
Tunnel restriction code	E
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

RID

14.1. UN number	UN3089
14.2. UN proper shipping name	METAL POWDER, FLAMMABLE, N.O.S.
14.3. Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Label(s)	4.1
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

ADN

14.1. UN number	UN3089
14.2. UN proper shipping name	METAL POWDER, FLAMMABLE, N.O.S.
14.3. Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
Label(s)	4.1
14.4. Packing group	II
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not available.

IATA

14.1. UN number	UN3089
14.2. UN proper shipping name	Metal powder, flammable, n.o.s.
14.3. Transport hazard class(es)	
Class	4.1
Subsidiary risk	-
14.4. Packing group	II
14.5. Environmental hazards	No.
ERG Code	3L
14.6. Special precautions for user	Not available.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

14.1. UN number	UN3089
14.2. UN proper shipping name	METAL POWDER, FLAMMABLE, N.O.S.

14.3. Transport hazard class(es)

Class 4.1

Subsidiary risk -

14.4. Packing group II

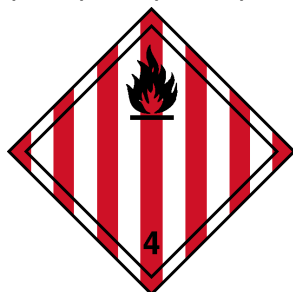
14.5. Environmental hazards

Marine pollutant No.

EmS F-G, S-G

14.6. Special precautions for user Not available.

ADN; ADR; IATA; IMDG; RID



SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

National regulations Not available.

15.2. Chemical safety assessment Not available.

SECTION 16: Other information

List of abbreviations	Not available.
References	Not available.
Information on evaluation method leading to the classification of mixture	Not applicable.
Training information	Follow training instructions when handling this material.
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
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