



## SAFETY DATA SHEET

### 316L V2 Rods

According to WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

#### 1. Identification

##### Product identifier

Product name 316L V2 Rods

Product number BMD-MP2002

##### Recommended use and restrictions on use

Recommended use Product is used as part of direct metal 3D printing.

Restriction on use No specific uses advised against are identified.

##### Details of the supplier of the safety data sheet

Manufacturer Desktop Metal  
63 3rd Ave.  
Burlington, MA 01803  
United States of America  
978.569.7851  
SDSInfo@desktopmetal.com

##### Emergency telephone number

Emergency telephone Emergency CONTACT (24-Hour-Number): Infotrac ID 106352: (USA domestic) 1 800 535 5053 or (International) 001 352 323 3500 or (GBK GmbH) ID 93315: +49 (0)6132-84463 (Germany)

#### 2. Hazard identification

##### Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Skin Sens. 1 - H317

Environmental hazards Not Classified

##### Label elements

##### Hazard pictograms



Signal word Warning

Hazard statements H317 May cause an allergic skin reaction.

Precautionary statements P261 Avoid breathing dust.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P302+P352 IF ON SKIN: Wash with plenty of water.  
P321 Specific treatment (see medical advice on this label).  
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P501 Dispose of contents/ container in accordance with national regulations.

Contains Nickel



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### Other hazards

This product does not contain any substances classified as PBT or vPvB.

### 3. Composition/information on ingredients

#### Mixtures

Chromium CAS number: 7440-47-3	10-30%
Nickel CAS number: 7440-02-0	10-30%
Manganese CAS number: 7439-96-5	3-7%
Molybdenum Powder CAS number: 7439-98-7	1-5%

**Composition comments** Components listed, if any, are present above their levels of disclosure. The product is not believed to present a hazard due to its physical nature.

**Ingredient notes** The exact percentage/concentration is withheld as a trade secret in accordance with the Regulations amending the Hazardous Products Regulations.

### 4. First-aid measures

#### Description of first aid measures

<b>General information</b>	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.
<b>Ingestion</b>	Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel.
<b>Skin contact</b>	It is important to remove the substance from the skin immediately. In the event of any sensitization symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognised skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.
<b>Eye contact</b>	Remove any contact lenses and open eyelids wide apart. Rinse with water. Get medical attention if any discomfort continues.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue.

#### Most important symptoms and effects, both acute and delayed

<b>General information</b>	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
<b>Inhalation</b>	Prolonged or repeated exposure may cause the following adverse effects: Suspected of causing cancer.



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<b>Ingestion</b>	May cause sensitization or allergic reactions in sensitive individuals. Prolonged or repeated exposure may cause the following adverse effects: Suspected of causing cancer.
<b>Skin contact</b>	May cause skin sensitization or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin. Prolonged or repeated exposure may cause the following adverse effects: Suspected of causing cancer.
<b>Eye contact</b>	May be slightly irritating to eyes.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Notes for the doctor</b>	Treat symptomatically. May cause sensitization or allergic reactions in sensitive individuals.

### 5. Fire-fighting measures

#### Extinguishing media

**Suitable extinguishing media** The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

#### Specific hazards arising from the hazardous product

**Specific hazards** None known.

**Hazardous combustion products** Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

#### Advice for firefighters

**Protective actions during firefighting** Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing that provides a basic level of protection during chemical incidents is defined by the Canada Occupational Health and Safety Regulations, by provincial guidelines on occupational health and safety or by NFPA standards if applicable.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid contact with skin and eyes.

#### Environmental precautions

**Environmental precautions** Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

#### Methods and material for containment and cleaning up

**Methods for cleaning up** Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.



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### Reference to other sections

**Reference to other sections** For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

## 7. Handling and storage

### Precautions for safe handling

**Usage precautions** Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Avoid breathing dust. Avoid generation and spreading of dust. Avoid handling which leads to dust formation. Keep container tightly sealed when not in use. Suspected of causing cancer. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

**Advice on general occupational hygiene** Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse.

### Conditions for safe storage, including any incompatibilities

**Storage precautions** Store away from incompatible materials (see Section 10). Store locked up. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

**Storage class** Chemical storage.

### Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.

## 8. Exposure controls/Personal protection

### Control parameters

#### Occupational exposure limits

##### Chromium

Long-term exposure limit (8-hour TWA): ACGIH 0.05 mg/m<sup>3</sup>  
A4

##### Nickel

Long-term exposure limit (8-hour TWA): ACGIH 1.5 mg/m<sup>3</sup> inhalable fraction  
A5

##### Manganese

Long-term exposure limit (8-hour TWA): ACGIH 0.02 mg/m<sup>3</sup> respirable fraction  
as Mn  
A4

Long-term exposure limit (8-hour TWA): ACGIH 0.1 mg/m<sup>3</sup> inhalable fraction  
as Mn  
A4

Long-term exposure limit (8-hour TWA): ACGIH 0.1 mg/m<sup>3</sup> fume, inhalable fraction  
as Mn  
A4

Long-term exposure limit (8-hour TWA): ACGIH 0.02 mg/m<sup>3</sup> fume, respirable fraction  
as Mn  
A4

##### Molybdenum Powder



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According to WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

Long-term exposure limit (8-hour TWA): ACGIH 10 mg/m<sup>3</sup> inhalable fraction as Mo

Long-term exposure limit (8-hour TWA): ACGIH 3 mg/m<sup>3</sup> respirable fraction as Mo

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

A5 = Not Suspected as a Human Carcinogen.

**Ingredient comments** The product is not believed to present a hazard due to its physical nature.

### Exposure controls

#### Protective equipment



<b>Appropriate engineering controls</b>	Provide adequate general and local exhaust ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients.
<b>Eye/face protection</b>	Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
<b>Hand protection</b>	It is recommended that chemical-resistant, impervious gloves are worn. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.9), and any relevant provincial regulation relating to health and safety at work. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
<b>Other skin and body protection</b>	May cause skin sensitization or allergic reactions in sensitive individuals. Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Hygiene measures</b>	Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.
<b>Respiratory protection</b>	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Full face mask respirators with replaceable filter cartridges should comply with the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Half mask and quarter mask respirators with replaceable filter cartridges should comply with the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work.
<b>Environmental exposure controls</b>	Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties



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According to WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

Appearance	Metal or metallic solid.
Colour	Gray.
Odour	Odourless.
Odour threshold	No information available.
pH	Not applicable.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	Not applicable.
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	No information available.
Density	5.3 g/cm <sup>3</sup>
Solubility(ies)	Soluble in the following materials: Organic solvents.
Partition coefficient	No information available.
Auto-ignition temperature	459°C
Decomposition Temperature	No information available.
Viscosity	Not applicable.
Explosive properties	No information available.
Oxidising properties	No information available.
Other information	No other information known.

### 10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	Strong acids. Strong bases Strong oxidizing agents.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours. Metal oxide(s).



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### 11. Toxicological information

#### Information on toxicological effects

Acute toxicity - oral

**Summary** Based on available data the classification criteria are not met.

Acute toxicity - dermal

**Summary** Based on available data the classification criteria are not met.

Acute toxicity - inhalation

**Summary** Based on available data the classification criteria are not met.

Skin corrosion/irritation

**Summary** Based on available data the classification criteria are not met.

Serious eye damage/irritation

**Summary** Based on available data the classification criteria are not met.

Respiratory sensitization

**Summary** Based on available data the classification criteria are not met.

Skin sensitization

**Summary** May cause an allergic skin reaction.

Germ cell mutagenicity

**Summary** Based on available data the classification criteria are not met.

Carcinogenicity

**Summary** Suspected of causing cancer.

**IARC carcinogenicity**

Contains a substance which may be potentially carcinogenic. IARC Group 2B Possibly carcinogenic to humans.

Reproductive toxicity

**Summary** Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

**Summary** Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

**Summary** Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

**Summary** Not relevant. Solid.

#### General information

May cause cancer after repeated exposure. Risk of cancer depends on duration and level of exposure. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation**

A single exposure may cause the following adverse effects: Temporary irritation.

**Ingestion**

May cause sensitization or allergic reactions in sensitive individuals.

**Skin contact**

May cause skin sensitization or allergic reactions in sensitive individuals. Prolonged contact may cause dryness of the skin.



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According to WHMIS 2015, in compliance with the Hazardous Product Act (HPA, as amended) and the requirements of the Hazardous Product Regulations (HPR).

Eye contact	May be slightly irritating to eyes.
Route of exposure	Ingestion Inhalation Skin and/or eye contact
Target organs	No specific target organs known.
Medical considerations	Skin disorders and allergies.

### 12. Ecological information

Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.
Acute aquatic toxicity	
Summary	Based on available data the classification criteria are not met.
Chronic aquatic toxicity	
Summary	Based on available data the classification criteria are not met.
Persistence and degradability	
Persistence and degradability	The degradability of the product is not known.
Bioaccumulative potential	
Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	No information available.
Mobility in soil	
Mobility	No data available.
Other adverse effects	
Other adverse effects	None known.

### 13. Disposal considerations

#### Waste treatment methods

General information	The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
Disposal methods	Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

### 14. Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, TDG).
UN number	
UN No. (International)	Not applicable.





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UN No. (DOT)	Not applicable.
<b>UN proper shipping name</b>	
Proper shipping name (International)	Not applicable.
Proper shipping name (DOT)	Not applicable.
<b>Transport hazard class(es)</b>	
Transport Labels (International)	No transport warning sign required.
DOT transport label	
<b>Packing group</b>	
Packing group (International)	Not applicable.
DOT packing group	Not applicable.
<b>Environmental hazards</b>	
Environmentally hazardous substance/marine pollutant	No.
<b>Special precautions for user</b>	
Not applicable.	
DOT reportable quantity	Not applicable.
DOT TIH Zone	Not applicable.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

### 15. Regulatory information

National regulations	Hazardous Products Regulations - SOR/2015-17. Transportation of Dangerous Goods Regulations -SOR/2015-100.
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#### Inventories

##### Canada – DSL/NDSL

All the ingredients are listed or exempt.

##### US - TSCA

All the ingredients are listed or exempt.

### 16. Other information

Classification abbreviations and acronyms	Carc. = Carcinogenicity Skin Sens. = Skin sensitisation STOT RE = Specific target organ toxicity-repeated exposure
General information	Only trained personnel should use this material.



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<b>Revision comments</b>	NOTE: Lines within the margin indicate significant changes from the previous revision.
<b>Issued by</b>	Team DM - ExOne
<b>Reviewed by</b>	Desktop Metal - North America
<b>Revision date</b>	2022-07-29
<b>Revision</b>	3
<b>Supersedes date</b>	2022-06-24
<b>SDS number</b>	322
<b>Hazard statements in full</b>	H317 May cause an allergic skin reaction.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.