

## Safety Data Sheet

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### 1. Identification of the Substance/Mixture and of the Company/Undertaking

#### 1.1 Product Identifier

**Material Name:** WOLFMET 3D.

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

**Product Type:** Tungsten alloy.

**Product Use:** Collimators, radiation shielding.

**Uses advised against:** None.

#### 1.3 Details of the supplier of the substance or mixture

**Company:** M&I Materials Ltd., Hibernia Way, Trafford Park, Manchester, M32 0ZD, UK.

**Telephone:** +44 (0)161 864 5454.

**Emergency Telephone:** +44 (0)161 864 5439.

**Email:** RicardoRefega@mimaterials.com.

### 2. Hazards Identification

This product is not classified as hazardous and this document has been compiled for information purposes, in accordance regulation 1907/EC/2006, Annex II, as amended by Regulation (EU) No. 453/2010 and OSHA hazard communication guidelines.

#### 2.1 Classification of the substance or mixture

Parts have no health risks in their supplied form. Machining by the customer poses a risk from metal dust, which can be irritating to the eyes, respiratory system and skin.

**Regulation (EC) No 1272/2008 (CLP):** Not classified.

**OSHA:** Not classified as hazardous.

#### 2.2 Label elements

**Regulation (EC) No 1272/2008 (CLP):** No symbol or signal word.

#### 2.3 Other hazards

None.

### 3. Composition/Information on Ingredients

#### 3 Substance

**Description:** WOLFMET 3D - selective laser melted tungsten.

**Nominal composition:** Tungsten >99%.

**Hazardous ingredients:** Tungsten powder.

**CAS Number:** 7440-33-7.

**Risk phrases :** R20; R38; R41.

### 4. First Aid Measures

#### 4.1 Description of first aid measures

**General information:** Risks from parts are due to their density and weight.

**Inhalation:** If welding fume is inhaled, remove casualty to fresh air. If respiratory problems persist seek medical attention.

**Skin:** Flush areas affected by welding burns with cold water. Cover with sterile dressing and obtain medical attention

**Eyes:** Metal dust from machining parts should be carefully irrigated with copious amounts of water. Do not rub eyes due to abrasive properties of the dust. Obtain medical attention.

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### 5. Fire Fighting Measures

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

No adverse effects expected.

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

No special treatment required.

#### 5.1 Extinguishing media

The product will not burn. If the product is involved in a fire water or foam fire extinguishers should be used.

#### 5.2 Special hazards arising from the substance or mixture

None.

#### 5.3 Advice for fire fighters

No special precautions are required.

### 6. Accidental Release Measures

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

Sweep up and dispose of metal swarf via a registered waste company.

#### 6.2 Environmental precautions

Do not contaminate any lakes, streams, ponds, groundwater or soil. A registered waste company should be used to dispose of tungsten waste.

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

No special requirements.

### 7. Handling and Storage

#### 7.1 Precautions for safe handling

Handle in accordance with manual handling guidance. Mechanical means should be used for heavy blocks.

No exposure to hazardous material envisaged unless welding is being undertaken.

**Respiratory Protection:** Fume extraction should be used for welding.

**Eye Protection:** Wear safety goggles when machining or if there is a likelihood of metal particles being ejected. Normal welding precautions to be observed.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep dry in stock and during transportation, shelf-life virtually unlimited.

#### 7.3 Specific end use(s)

No special precautions are required.

### 8. Exposure Controls/ Personal Protection

#### 8.1 Control parameters

No exposure to hazardous material envisaged unless welding or machining is being undertaken.

#### 8.2 Exposure controls

Eye washes should be available for emergency use.

**Respiratory protection:** Fume extraction should be used for welding.

**Eye protection:** Wear safety goggles when machining or there is a likelihood of metal particles being ejected. Normal welding precautions to be observed.

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### 9. Physical and Chemical Properties

#### 9.1 Information on basic physical and chemical properties

**Appearance:** Solid, light grey matt colour (un-machined condition). Shiny metallic appearance (machined condition).

**Melting point of constituent Tungsten:** 3380°C.

**Boiling point of constituent Tungsten:** 5700°C.

**Flash point:** Non-flammable.

**Relative density:** 18 to 19.3 g/cm<sup>3</sup>.

**Water solubility:** Insoluble.

#### 9.2 Other information

Not applicable.

### 10. Stability and Reactivity

#### 10.1 Reactivity

Stable, absolute resistance to oxidation up to 400°C. Will not polymerise.

#### 10.2 Chemical stability

Stable under normal conditions of use.

#### 10.3 Possibility of hazardous reactions

None.

#### 10.4 Conditions to avoid

Temperatures >2700°C.

#### 10.5 Incompatible materials

None.

#### 10.6 Hazardous decomposition products

None.

### 11. Toxicological Information

#### 11.1 Information on toxicological effects

**Likely routes of exposure:** Skin and eyes are the most likely routes for exposure. Inhalation of welding fumes may occur.

**Skin corrosion/irritation:** Although not normally hazardous, some individuals can develop allergic skin reactions to metallic ingredients. Welding fumes may be irritating to the skin.

**Eye corrosion/irritation:** As shipped, product does not pose a hazard to the eyes. Welding fumes generated can be irritating to the eye. Metal dust from machining may cause irritation.

**Respiratory or skin sensitisation:** Fumes generated by welding processes can be irritating and toxic. In extreme cases they may cause damage to the lungs and respiratory tract including but not limited to fibrosis of the lung which can reduce lung capacity and produce difficulty breathing.

**Ingestion:** Not a likely route of entry. Metal ingestion can cause toxic effects.

**Carcinogenicity/mutagenicity:** No information available.

### 12. Ecological Information

When used and/or disposed of as indicated no adverse environmental effects are foreseen. Ecotoxicological effects based on knowledge of similar substances.

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### 12.1 Toxicity

None known at this time.

### 12.2 Persistence and degradability

Product will not biodegrade.

### 12.3 Bioaccumulative potential

No potential for bioaccumulation.

### 12.4 Mobility in soil

No mobility in soil.

### 12.5 Results of PBT and vPvB assessment

The product does not meet criteria for toxicity which requires further assessment. It is not considered PBT or vPvB.

### 12.6 Other adverse effects

No other adverse effects envisaged.

## 13. Disposal Considerations

### 13.1 Waste treatment methods

Product and packaging must be disposed of in accordance with local and national regulations. Unused product may be returned for reclamation.

## 14. Transport Information

Not classified as hazardous under air (ICAO/IATA), sea (IMDG), road (ADR) or rail (RID) regulations. The product has a very high density and may need mechanical means of moving.

### 14.1 UN number

Not relevant.

### 14.2 UN proper shipping name

Not relevant.

### 14.3 Transport hazard class

Not relevant.

### 14.4 Packing group

Not relevant.

### 14.5 Environmental hazards

Not relevant.

### 14.6 Special precautions for user

Not relevant.

## 15. Regulatory Information

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

Product is not subject to Authorisation under REACH.

## 16. Other Information

Compiled according to regulation 1907/EC/2006, Annex II, as amended by Regulation (EU) No. 453/2010 and OSHA hazard communication guidelines.

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**Definitions of relevant risk phrases:**

R20: Harmful by inhalation.

R38: Irritating to skin.

R41: Risk of serious damage to eyes.

**16.1 Changes from last issue:**

Contact details.

The information provided in this Safety Data Sheet is correct to our best knowledge, information and belief at the date of its publication. It is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not be construed as guaranteeing any specific property of the product.