# Safety Data Sheet

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



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

### 1.1 Product identifier

**Material name:** Wolfmet HA 188, HA 190, HA 1925, HA 193, HA 195, HE 360, HE 390, HE 395, HE 397, HE 3925, HE 5925, HM 490.

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

**Product type:** Tungsten alloy
**Product use:** Ballast, balance, inertia & trim weights, radiation shielding, vibration damping, welding rods (HE 360), die-cast & extrusion tooling (HM 490).
**Uses advised against:** None.

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

**Company:** M&I Materials Limited, Hibernia Way, Trafford Park, Manchester, M32 0ZD, UK.
**Telephone:** +44 (0)161 864 5454.
**Email:** wolfmetsales@mimaterials.com

### 1.4 Emergency telephone

**Emergency telephone:** +44 (0)161 864 5439.
**Opening hours:** 24/7.

### 1.5 Other comments

**National Poisons Information Service:** NPIS contact details

| Country | Organisation/Company | Address | Emergency number |
|---|---|---|---|
| United Kingdom | National Poisons Information Service (Birmingham Centre) City Hospital | Dudley Road B18 7QH Birmingham | 0344 892 0111 |

The NPIS does not provide poisons information to members of the public - you should contact your general practitioner or telephone NHS 111 (England), NHS 24 (Scotland) or NHS Direct (Wales).

## SECTION 2. Hazards Identification

This product is not classified as hazardous and this document has been compiled for information purposes, in accordance with regulation REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758 and OSHA hazard communication guidelines.

### 2.1 Classification of the substance or mixture

Machined Wolfmet blocks have no health risks in their supplied form.
Blocks supplied for machining by the customer pose a risk from metal dust, which can be irritating to the eyes, respiratory system and skin.
Welding rods pose a risk from welding fume, particularly nickel fume.
**Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567):** Not classified.

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567):** No symbol or signal word.

### 2.3 Other hazards

No data available.

## SECTION 3. Composition/Information on Ingredients

### 3.1 Substance

Not applicable.

### 3.2 Mixture

**Description:** Tungsten Alloys

**Composition:**

| Constituent | CAS Number<br>EC Number<br>EU REACH No | Classification |
|---|---|---|
| Tungsten powder | 7440-33-7<br>231-143-9<br>Not applicable | Flammable solids, Category 2<br>H228: Flammable solid. |
| Nickel powder | 7440-02-0<br>231-111-4<br>Not applicable | H317: May cause an allergic skin reaction. (Skin 1)<br>H351: Carc. 2 (inhalation)<br>H372: STOT RE 1 (lung) (inhalation)<br>H412: Aquatic Chronic 3 |
| Copper powder | 7440-50-8<br>231-159-6<br>Not applicable | AH400: Aquatic Acute 1<br>H412: Aquatic Chronic 3 |
| Iron powder | 7439-89-6<br>231-096-4<br>Not applicable | H228: Flammable solid<br>H251: Self-heating: may catch fire |
| Molybdenum powder | 7439-98-7<br>231-107-2<br>Not applicable | None |

**Wolfmet nominal composition:**

| Grade | Binder | % Tungsten (w/w) |
|---|---|---|
| HA 188 | Ni/Cu | 88.6% |
| HA 190 | Ni/Cu | 90% |
| HA 1925 | Ni/Cu | 92.5% |
| HA 193 | Ni/Cu | 93% |
| HA 195 | Ni/Cu | 95% |
| HA 360 | Ni/Fe | 60% |
| HA 390 | Ni/Fe | 90% |
| HA 395 | Ni/Fe | 95% |
| HA 397 | Ni/Fe | 97% |
| HA 3925 | Ni/Fe | 92.5% |
| HA 5925 | Ni/Fe | 92.5% |
| HM 490 | Ni/Fe/Mo | 90.0% |

## SECTION 4. First Aid Measures

### 4.1 Description of first aid measures

**General information:** Risks from Wolfmet machined 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 Wolfmet blocks should be carefully irrigated with copious amounts of water. Do not rub eyes due to abrasive properties of the dust. Obtain medical attention.

### 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. Treat symptomatically.

## SECTION 5. Fire Fighting Measures

### 5.1 Extinguishing media

The product will not burn.
**Suitable extinguishing media:** Foam or water fog.
**Unsuitable extinguishing media:** None.

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

None.

### 5.3 Advice for fire fighters

No special precautions are required.

## SECTION 6. Accidental Release Measures

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

**Personal precautions**: Refer to protective measures listed in sections 7 and 8.

### 6.2 Environmental precautions

Do not contaminate any lakes, streams, ponds, groundwater or soil.

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

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

### 6.4 Reference to other sections

For disposal considerations see section 13.
Refer to protective measures listed in sections 7 and 8.

## SECTION 7. Handling and Storage

### 7.1 Precautions for safe handling

**Advice on safe handling:** Handle blocks in accordance with manual handling guidance. Mechanical means should be used for heavy blocks.
No exposure to hazardous material envisaged unless welding of HE 360 welding rods or machining of blocks is being undertaken, in which case for personal protection see section 8.

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

**Requirements for storage areas and containers:** Keep dry in stock and during transportation, shelf-life virtually unlimited. Keep out of the reach of children. Keep away from food, drink and animal feed.

### 7.3 Specific end use(s)

No special precautions are required.

## SECTION 8. Exposure Controls/ Personal Protection

### 8.1 Control parameters

No exposure to hazardous material envisaged unless welding of HE 360 welding rods or machining of blocks is being undertaken.
**Biological occupational exposure limits:** N/A
**Derived No Effect Level (DNEL):** N/A
**Predicted No Effect Concentration (PNEC):** N/A

### 8.2 Exposure controls

**Engineering measures:** The extent of these protection measures depends on the actual risks in use.
**Personal protective equipment for welding HE 360 rods or machining blocks:**

**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.
**Recommended safety goggles:** Anti-Mist/Dust Safety Goggles with Clear Lenses
**Material:**
**Lens:** Polycarbonate/Acetate.
**Frame:** PVC.
**Head strap clips:** Nylon.
**Head strap:** Elasticated Polyester.
**Standards:** EN 166:2001
**Protection level:** Level 4, protects against large dust particles. Product protects against molten metals and hot solids.
**Remarks:** Goggles should be discarded and replaced if there is any indication of degradation or breakthrough.

## SECTION 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/Boiling point:** Not available – individual constituents listed below.

| Wolfmet constituents: | Melting point | Boiling point |
|---|---|---|
| Tungsten powder | 3380°C | 5700°C |
| Nickel powder | 1453°C | 2820°C |
| Iron powder | 1539°C | 2900°C |
| Copper powder | 1083°C | 2580°C |
| Molybdenum | 2620°C | 4600°C |

**Flash point:** Non-flammable.

**Flammability (solid, gas):** Non-flammable.
**Upper/lower flammability or explosive limits:** n/a.
**Relative density:** Varies (depending on product grade) 12.5-18.6 g/cm$^3$.
**Water solubility:** Insoluble.
**Odour:** Metallic.
**pH**: n/a.
**Freezing point:** n/a.
**Vapour pressure:** n/a.
**Vapour density:** n/a.
**Solubility:** n/a.
**Partition coefficient:** n/a.
**Auto-ignition temperature:** No auto-ignition expected.
**Decomposition temperature:** n/a.
**Viscosity:** n/a.
**Explosive properties:** Non-explosive.
**Oxidising properties:** Non-oxidising.

### 9.2 Other information
Not applicable.

## SECTION 10. Stability and Reactivity

### 10.1 Reactivity
Stable, absolute resistance to oxidation up to 400ºC. Will not polymerise.

### 10.2 Chemical stability
Stable under normal conditions of use.

### 10.3 Possibility of hazardous reactions
**Hazardous decomposition products:** Nickel vapour when using welding rods.

### 10.4 Conditions to avoid
Temperatures >2700°C.

### 10.5 Incompatible materials
None.

### 10.6 Hazardous decomposition products
None.

## SECTION 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.
**Product:**
**Skin corrosion/irritation:** Although not normally hazardous, some individuals can develop allergic skin reactions to nickel and other 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.
Nickel is listed in Annex XVII to Regulation (EC) 1907/2006 as amended by UK REACH Regulations SI 2019/758 and may not be used within the human body or in prolonged contact with the human body if the rates of release of nickel exceed 0.2 or 0.5µg per square cm per week respectively.
**Ingestion:** Not a likely route of entry. Metal ingestion can cause toxic effects.
**Carcinogenicity/mutagenicity:** Nickel is an animal carcinogen and inhalation of fumes and dusts should be avoided.
OSHA: Nickel is a select carcinogen.
NTP: Nickel is reasonably anticipated to be a human carcinogen.
IARC: Nickel is classed under Group 2b: possibly carcinogenic to humans.

## SECTION 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.

### 12.1 Toxicity
**Product:** 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 Endocrine disrupting properties
n/a.

### 12.7 Other adverse effects
No other adverse effects envisaged.

## SECTION 13. Disposal Considerations

### 13.1 Waste treatment methods
**Product:** Product must be disposed of in accordance with local and national regulations. Sweep up and dispose of metal swarf via a registered waste company.
Unused product may be returned for reclamation.
**Contaminated packaging:** Packaging should be taken to an approved waste handling site for recycling or disposal.
**Waste code:** Packaging code 15-01-10 - Empty packaging contaminated with residues of hazardous substances (paper and cardboard).

## SECTION 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.

## SECTION 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.
**REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII):** Not applicable.
**REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59):** Not applicable.
**Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:** Not applicable.
**Regulation (EU) 2019/1021 on persistent organic pollutants (recast):** Not applicable.
**UK REACH List of substances subject to authorisation (Annex XIV):** Not applicable.
**GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation:** Not applicable.

**15.2 Chemical safety assessment**
A chemical safety assessment has been performed for this substance.

## SECTION 16. Other Information

Compiled according to regulation 1907/EC/2006, as amended by UK REACH Regulations SI 2019/758 and OSHA hazard communication guidelines.

**16.1 Changes from last issue:**
Complete review due to update in regulations.

**16.2 Abbreviations and acronyms**
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration

associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International code for the construction and equipment of ships carrying dangerous chemicals in bulk : with standards and guidelines relevant to the code.

**16.3 Key literature references and sources for data**

Company data.

**16.4 Classification and procedure used to derive the classification**

**Further information classification of the mixture:** Not classified.
**Classification procedure:** Based on product data or assessment.

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.