

Material Safety Data Sheet

Metal Alloy Powder

Date prepared: November 28, 2007
LPW Technology Ltd

Date revised: 18 June, 2009 (Issue 2)
Conforms to EU Directive 91/155 EEC &
2001/58/EC

1. Identification of the substance and the company

Substance or preparation trade name: LPW metal alloy powders. To include alloys based on Cobalt, Iron, Nickel, or Titanium
Unique reference number: Advised on unique Test Certificate
Company/undertaking name & address: LPW Technology Ltd
PO Box 768
Lymm, WA15 5EN
Cheshire
United Kingdom
Contact: Dr Philip A Carroll
Emergency telephone number: +44 (0) 845 539 0162

2. Composition

Hazardous Ingredient	CAS No.	Max. Content (wt %)	TWA / STEL Exposure Limits (mg/m3)
Aluminum	7429-90-5	60	4/-
Boron	7440-42-8	10	-/-
Chromium	7440-47-3	55	0.5/-
Cobalt	7440-48-4	90	0.1/-
Copper	7440-50-8	70	0.2/-
Hafnium	7440-58-6	5	0.5/-
Indium	7440-74-6	10	0.1/0.3
Iron	1309-37-1	99	5/-
Lanthanum	7439-91-0	2	Na
Manganese	7439-96-5	15	5/-
Molybdenum	7439-98-7	50	5/-
Nickel	7440-02-0	100	1/-
Niobium/Columbium	7440-03-1	10	Na
Rhenium	7440-15-5	10	Na
Silicon	7440-21-3	15	4
Sulphur	7704-34-9	0.5	Na
Tantalum	7440-25-7	20	5/10
Titanium	7440-32-6	90	10/-
Tungsten	7440-33-7	25	Na
Vanadium	1314-62-1	20	0.5/-
Yttrium	7440-65-5	2	1/3
Zirconium	7440-67-7	2	5/-

Additional elements may be present – advised on unique Test Certificate.

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Na = not available. * = known carcinogen.

3. Hazards identification

This material may contain nickel and/or chromium. Chromium is a known human carcinogen and nickel is known as a probable human carcinogen.

4. First aid measures

Skin Contact: First aid procedure is to wash thoroughly with soap and water.

Eye Contact: First aid procedure is to irrigate eye with water.

Inhalation: First aid procedure is to remove to fresh air.

Ingestion: First aid procedure is to induce vomiting and consult a physician.

5. Fire fighting measures

Extinguishing Media: Use Class "D" Fire Extinguisher. Do not use water, dry chemical, or Carbon Dioxide.

Special Firefighting Procedures: Self contained breathing apparatus (SCBA) should be worn.

Unusual Fire & Explosion Hazards: Provide adequate ventilation. Moderate fire hazard in the form of dust or accumulation of such. In addition, minimize airborne powder particles.

6. Accidental release measures

Spill/Leak Cleanup: Use respiratory equipment during cleanup. Use equipment that keeps material from becoming airborne to minimize dust generation i.e. Wet mop, HEPA vacuum.

7. Handling and storage

Handling: Eating, drinking and smoking should be prohibited in areas where this material is handled. Keep container tightly closed.

Ventilation: Dust pickup and ventilation is suggested.

8. Exposure controls

Goggles: Safety glasses or goggles are recommended when handling.

Gloves: Wear impervious gloves to prevent skin contact.

Respirator: Use a properly fitted, air-purifying or air-feed respirator complying with an approved standard.

9. Physical and chemical properties

Boiling Point: n/a

Freezing Point: n/a

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Specific Gravity: n/a

Evaporation Rate: n/a

Vapor Pressure: n/a

Vapor Density: n/a

Percent Volatile: n/a

Solubility in Water: n/a

Appearance & Odor: gray metallic powder with no appreciable odor.

Flammable Limits: n/a

Flash Point: n/a

10. Stability and reactivity

Material Stability: Stable

Chemical Incompatibility: None known

Hazardous Decomposition: Ozone & nitric oxide are formed during thermal spraying.

Hazardous Polymerization: Will not occur.

11. Toxicological information

Skin Contact: May cause dermatitis.

Eye Contact: May cause irritation and redness.

Inhalation: May cause irritation to upper respiratory tract.

Ingestion: May cause nausea, vomiting and diarrhea.

Effects of Overexposure: Chronic skin contact may lead to lesions and redness. Chronic inhalation may cause fibrotic disease.

12. Ecological information

No none significant effects or critical hazards.

13. Disposal Considerations

Generation of waste should be avoid or minimised. Avoid dispersal of spilt material and contact with soil, waterways, drains, or sewers. Dispose in accordance with local, state, and national regulations.

14. Transport information

No special transport requirements are necessary.

15. Regulatory information

Symbols:

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Harmful

Risk Phrases:

R40 – Limited evidence of a carcinogenic effect
R42/43 – May cause sensitisation by inhalation and skin contact

Safety Phrases:

S22 – Do not breathe dust
S23 – Do not breathe fumes
S24 – Avoid contact with skin
S36/37 – Wear suitable protective clothing, gloves and eye/face protection
S38 – In case of insufficient ventilation, wear suitable respiratory equipment
S51 – Use only in well ventilated areas

Water Hazard Class: Generally not hazardous

16. Other Information

Keep material containers closed and dry during storage.
No food or smoking in work areas.
Wash thoroughly after handling.
Install eye wash station.

The above data contained herein is believed to be accurate base on available tests and information. LPW Technology ltd assumes no liability in connection with the information supplied on this sheet.

Final determination of suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, this does not guarantee that these are the only hazards that exist.

This document is identical to MSDS Rev 2 and was issued prior to LPW Technology establishing a quality plan in accordance with ISO 9001: 2000 and BS EN 9120: 2005. Issue 1 refers to ISO 9001 document registry issue.