

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

1.1. Product identifier

MSUPPLY - 2.4668

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

Relevant identified uses: Steel powder for additive manufacturing; Powder metallurgy
Uses advised against: No information available

1.3. Details of the supplier of the safety data sheet

Supplier

m4p material solutions GmbH

Mittelweg 13
D 39130 Magdeburg

Telephone +49 (0)177 8036000

Telefax: +49 (0)391 7214941

Information contact

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Website www.metals4printing.com

1.4. Emergency telephone number

Giftnotruf München
Euro Emergency Call: 112

Telephone +49 (0)89 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008:

Skin Sens. 1/1A/1B, H317; Carc. 2, H351; STOT RE 1, H372; Aquatic Chronic 3, H412

2.2. Label elements

Classification according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms



GHS07, GHS08

Danger

Signal word:

Hazard statements:

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H372 Causes damage to organs through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P201 Obtain special instructions before use.

P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+352	IF ON SKIN: Wash with plenty of water.
P308+313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P333+313	If skin irritation or rash occurs: Get medical advice/attention.
P362+364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container to waste disposal.

Special labelling of particular preparations:

May cause an allergic skin reaction.

2.3. Other hazards

This substance doesn't meet the PBT criteria of REACH, Annex XIII.

SECTION 3: Composition / information on ingredients

3.1. Substances

not applicable

3.2. Mixtures

Mixture related information

Composition/information on ingredients

Substance:	CAS-No.:	REACH-no.:	Concentration:	Classification: EC 1272/2008 (CLP):	M, ATE, Note
Iron	7439-89-6	01-2119462838-24-XXXX	Rest	-	M = 1
Nickel	7440-02-0	01-2119480401-47-XXXX	50,0-55,0%	Skin Sens. 1/1A/1B, H317; Carc. 2, H351; STOT RE 1, H372; Aquatic Chronic 3, H412	M = 1
Niobium	7440-03-1	01-2119489003-42-XXXX	4,75-5,5%	Flam. Sol. 1/2, H228	
Molybdenum	7439-98-7	01-2119472304-43-XXXX	2,8-3,3%	-	
Chromium	7440-47-3	01-2119485652-31-XXXX	17,0-21,0%	-	M = 0
Titanium	7440-32-6	01-2119484878-14-XXXX	0,6-1,25%	Flam. Sol. 1/2, H228	
Aluminium	7429-90-5	01-2119529243-45-XXXX	0,2-0,8%	Flam. Sol. 1/2, H228; Water-react. 2/3, H261	M = 0

(Full text of H- and EUH-statements: see section 16.)

SECTION 4: First aid measures

4.1. Description of first aid measures

General information: In case of accident or unwellness, seek medical advice immediately
Take off immediately all contaminated clothing.

In case of inhalation: Provide fresh air.
In case of respiratory tract irritation, consult a physician.

- Following skin contact:** After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.
- After eye contact:** In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Seek medical attention if problems persist.
- After ingestion:** Rinse mouth immediately and drink plenty of water. Seek medical attention if problems persist.

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

When in doubt or if symptoms are observed, get medical advice.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Dry sand. D powder.

Unsuitable extinguishing media Water fog. High power water jet. Water. Foam. Carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Pyrolysis products, toxic.

5.3. Advice for firefighters

General information

Co-ordinate fire-fighting measures to the fire surroundings.

Special protective equipment for fire-fighters:

In case of fire: Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Remove all sources of ignition. Remove persons to safety. Wear personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advices on safe handling

Avoid contact with skin and eyes. Avoid generation of dust. Do not breathe dust.

Precautions against fire and explosion:

Usual measures for fire prevention.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place. Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

none

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

occupational exposure limit value

Substance:	CAS-No.:		Source:	Occupational exposure limit value:[ppm]	Occupational exposure limit value:[mg/m ³]	Limitation of exposure peaks:	Remark:
Nickel	7440-02-0	De	TRGS 900		0,006 A	8(lI)	AGS, 24, Sh, Y
Chromium	7440-47-3	De	TRGS 900		2 E	1(lI)	EU, 10
Aluminium	7429-90-5	De	TRGS900		1,25	2	allgemeiner Staubgrenzwert

DNEL-/PNEC-values

DNEL value

Substance:	CAS-No.:	DNEL/DMEL
Nickel	7440-02-0	worker inhalative long-term, systemic 0,05 mg/m ³ worker inhalative long-term, local 0,05 mg/m ³ worker inhalative short-term, local 11,9 mg/m ³ worker dermal long-term, local 0,035 mg/kg bw/day population inhalative long-term, systemic 60 mg/m ³ population inhalative long-term, local 60 mg/m ³ population inhalative short-term, local 0,8 mg/m ³ population dermal long-term, local 0,035 mg/cm ² population oral long-term, systemic 0,011 mg/kg bw/day population oral short-term, systemic 0,37 mg/kg bw/day
Chromium	7440-47-3	worker inhalative long-term, local 0,5 mg/m ³ population inhalative long-term, local 0,027 mg/m ³
Molybdenum	7439-98-7	worker inhalative long-term, systemic 11,17 mg/m ³ population inhalative long-term, systemic 3,33 mg/m ³ population oral long-term, systemic 4,85 mg/kg bw/day
Titanium	7440-32-6	population oral long-term, systemic 350 mg/kg bw/day
Aluminium	7429-90-5	worker inhalative long-term, systemic 3,72 mg/m ³ worker inhalative long-term, local 3,72 mg/m ³ population oral long-term, systemic 7,9 mg/kg bw/day

Iron	7439-89-6	worker inhalative long-term, local 3 mg/m ³ population inhalative long-term, local 1,5 mg/m ³
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PNEC Value

Substance:	CAS-No.:	PNEC
Nickel	7440-02-0	aquatic, freshwater 7,1 µg/l intermittent release, freshwater 0 mg/l aquatic, marine water 8,6 µg/l intermittent release, marine water 0 mg/l sediment, freshwater 109 mg/kg dw sediment, marine water 109 mg/kg dw soil 29,9 mg/kg dw secondary poisoning 120 µg/kg food
Chromium	7440-47-3	aquatic, freshwater 6,5 µg/l sediment, freshwater 205,7 mg/kg dw soil 21,1 mg/kg dw
Molybdenum	7439-98-7	aquatic, freshwater 12,7 mg/l aquatic, marine water 1,91 mg/l sewage treatment plant 21,7 mg/l sediment, freshwater 22600 mg/kg dw sediment, marine water 1984 mg/kg dw soil 39 mg/kg dw
Titanium	7440-32-6	aquatic, freshwater 0,076 mg/l aquatic, marine water 0,6 mg/l sewage treatment plant 60 mg/l sediment, freshwater 600 mg/kg dw sediment, marine water 60 mg/kg dw soil 60 mg/kg dw

Additional information

none

8.2. Exposure controls

Occupational exposure controls:

Provide adequate ventilation as well as local exhaust at critical locations.

Technical measures and the application of suitable work processes have priority over personal protection equipment.

General protection and hygiene measures:

When using do not eat, drink, smoke, sniff.

Wash hands before breaks and after work.

Apply skin care products after work.

Wash contaminated clothing prior to re-use.

Personal protection equipment

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Respiratory protection

Respiratory protection necessary at: In the case of the formation of dust. Suitable respiratory protection apparatus: particulates filter device (DIN EN 143).

Hand protection

Tested protective gloves are to be worn:

DIN-/EN-Norms:

EN ISO 374

Eye/face protection

Tightly sealed safety glasses.

Body protection:

Suitable protective clothing:

Overall.

For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

Only wear fitting, comfortable and clean protective clothing.

Environmental exposure controls

refer to chapter 7. No further action is necessary.

Consumer exposure controls

refer to chapter 7. No further action is necessary.

Exposure Scenario:

none

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state:	solid: Powder
Colour:	grey
Odour:	odourless
Odour threshold:	not applicable

Safety relevant basis data

Melting point/freezing point:	1350 - 1450 °C
Initial boiling point and boiling range:	not applicable
Flammability:	not flammable
lower flammability or explosive limits:	no information available
Upper flammability or explosive limits:	no information available
Flash point:	not applicable
Ignition temperature:	no information available
Decomposition temperature:	no information available
pH:	not applicable
Kinematic viscosity:	not applicable
Water solubility (g/L):	insoluble
Partition coefficient: n-octanol/water:	no information available
Vapour pressure:	not applicable
Density:	3,5-4,5g/cm ³ (bulk density)
Relative density:	not applicable
Particle properties:	no information available

9.2. Other information

Minimum ignition temperature: >1000mJ

STOT-repeated exposure:
No information available.

11.2. Information about other hazards
No information available.

SECTION 12: Ecological information

12.1. Toxicity
May cause long lasting harmful effects to aquatic life.

Ecotoxicity

Substance:	CAS-No.:	Ecotoxicity
Iron	7439-89-6	LC50 fish (96 h) 1,29 mg/l
Aluminium	7429-90-5	LC50 fish (96 h) 1,55 mg/l
Chromium	7440-47-3	LC50 fish (96 h) MW 40,5 mg/l LC50 crustaceans (48h) MW 0,53 mg/l EC50 crustaceans (48 h) 0,07 mg/l EC50 Algae (72 h) MW 8,75 mg/l
Nickel	7440-02-0	LC50 fish (96 h) 40 mg/l LC50 crustaceans (48h) 8,85 mg/l EC50 crustaceans (48 h) 1 mg/l

12.2. Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential
No information available.

12.4. Mobility in soil
No information available.

12.5. Results of PBT and vPvB assessment
This substance does not meet the criteria for classification as PBT or vPvB.

12.6 Endocrine disruptive effect
No information available.

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Appropriate disposal/Product:
Dispose of waste according to applicable legislation.

Appropriate disposal / Package
Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

14.1. UN number

UN No.: n.a. no dangerous goods

14.2. UN proper shipping name

Land transport (ADR/RID)

-

Sea transport (IMDG), Air transport (ICAO-TI / IATA-DGR)

-

14.3. Transport hazard class(es)

Hazard label(s) / Label: - Classification code: / Classification Code: -

14.4. Packing group

Packing group/ Packing Group: -

14.5. Environmental hazards

	Yes	No
ADR/RID / IMDG / ICAO-TI / IATA-DGR: Marine pollutant:	<input type="checkbox"/>	<input checked="" type="checkbox"/>

14.6. Special precautions for user

Land transport (ADR/RID)

transport category: - tunnel restriction code: -

Special provisions: - Limited quantity (LQ): -

Sea transport (IMDG)

EmS-No: -

Special provisions: - Limited quantity (LQ): -

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Remark none

SECTION 15: Regulatory information

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

EU legislation

Contains no REACH candidate substance.

Contains no substance listed in REACH Annex XIV.

Use restriction according to REACH annex XVII, no.: 27

Nickel and Nickelcompounds

Regulation (EC) No. 1005/2009 on substances that lead to the depletion of the ozone layer
not relevant

Regulation (EC) No 850/2004 [POP-Regulation]

not relevant

National regulations

Observe in addition any national regulations!

15.2. Chemical Safety Assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Relevant H- and EUH-phrases (Number and full text):

Hazard statements

- H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
H372 Causes damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
H412 Harmful to aquatic life with long lasting effects.

Training advice

none

Recommended restrictions of use:

Reserved for industrial and professional use.

Further remarks:

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Documentation of changes:

none

Key literature references and sources for data

Data arise from reference works and literature.
ECHA - European Chemical Agency
Information of suppliers.

Abbreviations and acronyms

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>