

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : Composite Metal Rod - 17-4PH Stainless Steel
Product code : Not assigned

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Metal rod for 3D Printing

1.3. Supplier

Desktop Metal
63 3rd Avenue
Burlington, MA 01803 - United States
T 978-224-1244
www.desktopmetal.com

1.4. Emergency telephone number

Emergency number : 978-224-1244 (Hours: 9:00 am to 5:00 pm Eastern time)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin sensitization, Category 1 H317 May cause an allergic skin reaction
Carcinogenicity Category 2 H351 Suspected of causing cancer (Inhalation)
Specific target organ toxicity (repeated exposure) Category 1 H372 Causes damage to organs through prolonged or repeated exposure (Inhalation)
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H317 - May cause an allergic skin reaction
H351 - Suspected of causing cancer (Inhalation)
H372 - Causes damage to organs through prolonged or repeated exposure (Inhalation)
Precautionary statements (GHS-US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe vapors, dust, fume.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves.
P302+P352 - If on skin: Wash with plenty of water
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : As supplied, metals in non-spontaneously combustible form.

2.4. Unknown acute toxicity (GHS US)

Not applicable

Composite Metal Rod - 17-4PH Stainless Steel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS-US classification |
|--------|---------------------|----|--|
| Nickel | (CAS-No.) 7440-02-0 | <5 | Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 |

Comments : This mixture contains a non-hazardous proprietary organic binder system

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Get medical advice if skin irritation persists.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
- Symptoms/effects after skin contact : May cause sensitization by skin contact.
- Symptoms/effects after eye contact : Not expected to be an irritant.
- Symptoms/effects after ingestion : May cause irritation to the digestive tract.
- Chronic symptoms : IF INHALED: Suspected of causing cancer.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Water spray. Sand. In case of fire involving metal dust, use fire extinguisher class D.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

- Fire hazard : Not expected to be a fire/explosion hazard under normal conditions of use. On combustion forms: irritating fumes. Metal oxides.
- Explosion hazard : Fine dust dispersed in air may ignite.
- Reactivity : None under normal conditions.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : No additional risk management measures required.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

Composite Metal Rod - 17-4PH Stainless Steel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13: "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin. Prevent dust accumulation to minimize explosion hazard.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Incompatible materials. Keep container closed when not in use.

Incompatible materials : Strong bases. Strong acids. Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Nickel (7440-02-0) | | |
|--------------------|--------------------------------------|--|
| ACGIH | ACGIH TWA (mg/m ³) | 1.5 mg/m ³ (inhalable particulate matter) |
| OSHA | OSHA PEL (TWA) (mg/m ³) | 1 mg/m ³ |
| IDLH | US IDLH (mg/m ³) | 10 mg/m ³ |
| NIOSH | NIOSH REL (TWA) (mg/m ³) | 0.015 mg/m ³ |

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Impermeable protective gloves. Wear suitable gloves tested to EN374

Eye protection:

Safety glasses

Skin and body protection:

Not required for normal conditions of use

Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Metal rod.

Color : Gray

Odor : odorless

Odor threshold : No data available

pH : No data available

Composite Metal Rod - 17-4PH Stainless Steel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| | |
|---|--------------------------------------|
| Melting point | : > 37 °C |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : Not applicable |
| Relative evaporation rate (butyl acetate=1) | : Not applicable |
| Flammability (solid, gas) | : Not flammable. |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : 7.8 g/cm ³ |
| Solubility | : Organic solvent: Partially soluble |
| Log Pow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : > 200 °C |
| Viscosity, kinematic | : Not applicable |
| Viscosity, dynamic | : Not applicable |
| Explosion limits | : Not applicable |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur. As supplied, metals in non-spontaneously combustible form.

10.4. Conditions to avoid

Refer to section 7.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.

10.6. Hazardous decomposition products

On combustion forms: irritating fumes. Metal oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|----------------|--|
| Acute toxicity | : Not classified (Based on available data, the classification criteria are not met) |
|----------------|--|

| Nickel (7440-02-0) | |
|----------------------------|----------------------------------|
| LD50 oral rat | > 9000 mg/kg |
| LC50 inhalation rat (mg/l) | > 10.2 mg/l (Exposure time: 1 h) |

| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Not classified (Based on available data, the classification criteria are not met) |
| Serious eye damage/irritation | : Not classified (Based on available data, the classification criteria are not met) |
| Respiratory or skin sensitization | : May cause an allergic skin reaction. |
| Germ cell mutagenicity | : Not classified (Based on available data, the classification criteria are not met) |
| Carcinogenicity | : Suspected of causing cancer (Inhalation). |

Composite Metal Rod - 17-4PH Stainless Steel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

| Nickel (7440-02-0) | |
|--|---|
| IARC group | 2B - Possibly carcinogenic to humans |
| National Toxicity Program (NTP) Status | Reasonably anticipated to be Human Carcinogen |
| In OSHA Hazard Communication Carcinogen list | Yes |

| | |
|--|---|
| Reproductive toxicity | : Not classified (Based on available data, the classification criteria are not met) |
| Specific target organ toxicity – single exposure | : Not classified (Based on available data, the classification criteria are not met) |
| Specific target organ toxicity – repeated exposure | : Causes damage to organs through prolonged or repeated exposure (Inhalation). |
| Aspiration hazard | : Not classified (Based on available data, the classification criteria are not met) |
| Likely routes of exposure | : Ingestion. Inhalation. Eyes. Skin. |
| Symptoms/effects after inhalation | : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. |
| Symptoms/effects after skin contact | : May cause sensitization by skin contact. |
| Symptoms/effects after eye contact | : Not expected to be an irritant. |
| Symptoms/effects after ingestion | : May cause irritation to the digestive tract. |
| Chronic symptoms | : IF INHALED: Suspected of causing cancer. |
| Other information | : Likely routes of exposure: ingestion, inhalation, skin and eye. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|-------------------|--|
| Ecology - general | : This material has not been tested for environmental effects. |
|-------------------|--|

| Nickel (7440-02-0) | |
|--------------------------------|--|
| LC50 fish 1 | > 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio) |
| LC50 other aquatic organisms 1 | 7.35 - 12.12 mg/l (Exposure time: 96 h - Species: Calanoid copepod (Eurytemora affinis)) |
| EC50 Daphnia 1 | > 100 mg/l (Exposure time: 48 h - Species: Daphnia magna) |
| LC50 fish 2 | 1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static]) |

12.2. Persistence and degradability

| Composite Metal Rod - 17-4PH Stainless Steel | |
|--|------------------|
| Persistence and degradability | Not established. |

12.3. Bioaccumulative potential

| Composite Metal Rod - 17-4PH Stainless Steel | |
|--|------------------|
| Bioaccumulative potential | Not established. |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

| | |
|-------------------|-------------------------------------|
| Other information | : Avoid release to the environment. |
|-------------------|-------------------------------------|

SECTION 13: Disposal considerations

13.1. Disposal methods

| | |
|--|---|
| Product/Packaging disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated

Composite Metal Rod - 17-4PH Stainless Steel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| | | |
|--------|-------------------|-----|
| Nickel | CAS-No. 7440-02-0 | <5% |
|--------|-------------------|-----|

Nickel (7440-02-0)

| | |
|-----------|--|
| CERCLA RQ | 100 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm |
|-----------|--|

15.2. International regulations

CANADA

Nickel (7440-02-0)

| |
|---|
| Listed on the Canadian DSL (Domestic Substances List) |
|---|

EU-Regulations

Nickel (7440-02-0)

| |
|--|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) |
|--|

National regulations

Nickel (7440-02-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations



WARNING

This product can expose you to Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Nickel (7440-02-0)

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) | Maximum allowable dose level (MADL) |
|---|---|---|---|----------------------------------|-------------------------------------|
| Yes | No | No | No | | |

SECTION 16: Other information

Revision date

: 01 June 2018

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Composite Metal Rod - 17-4PH Stainless Steel

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Other information : None.

Full text of H-phrases:

| | |
|------|--|
| H317 | May cause an allergic skin reaction |
| H351 | Suspected of causing cancer |
| H372 | Causes damage to organs through prolonged or repeated exposure |

Indication of changes:

| Section | Changed item | Change | Comments |
|---------|-----------------------------|----------|----------|
| 6 | Accidental release measures | Modified | |

SDS US (GHS HazCom 2012) Prop 65 Correction

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product