



Safety Data Sheet Titanium

SECTION 1: Identification

1.1 Product identifier

Product name Titanium

1.2 Other means of identification

Not available

1.3 Recommended use of the chemical and restrictions on use

Titanium Raw Materials & Components

1.4 Supplier's details

Name Reliable Source, Inc.
Address 11109 Jasmine St
Fontana, CA 92337
USA

Telephone 909-357-1211
Fax 909-357-1311
email info@rsmetals.us

1.5 Emergency phone number(s)

909-357-1211 (business hours)

SECTION 2: Hazard identification

General hazard statement

The product as delivered does not present a health hazard. However, if user activities generate dust, fumes or mists during processing and handling (melting, welding, sawing, brazing, grinding and machining), it may become hazardous.

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)

- Sensitization, respiratory, Cat. 1
- Sensitization, skin, Cat. 1

2.2 GHS label elements, including precautionary statements

Safety Data Sheet

Titanium

Pictogram



Signal word

Danger

Hazard statement(s)

H317

May cause an allergic skin reaction

H334

May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statement(s)

P261

Avoid breathing dust/fume/gas/mist/vapors/spray.

P272

Contaminated work clothing must not be allowed out of the workplace.

P280

Wear protective gloves.

P284

[In case of inadequate ventilation] wear respiratory protection.

P302+P352

IF ON SKIN: Wash with plenty of water

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P333+P313

If skin irritation or rash occurs: Get medical advice/attention.

P342+P311

If experiencing respiratory symptoms: Call a POISON CENTER/doctor

P363

Wash contaminated clothing before reuse.

2.3 Other hazards which do not result in classification

No data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

Components

| Component | Concentration |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Titanium (CAS no.: 7440-32-6) CLASSIFICATIONS: No data available. | 50 - 75 % (weight) |
| Molybdenum (CAS no.: 7439-98-7) CLASSIFICATIONS: No data available. | 10 - 25 % (weight) |
| Vanadium (CAS no.: 7440-62-2) CLASSIFICATIONS: No data available. | 10 - 25 % (weight) |
| Chromium compounds (as Cr (III)) (CAS no.: 7440-47-3) CLASSIFICATIONS: Sensitization, skin, Cat. 1; Sensitization, respiratory, Cat. 1; Serious eye damage/eye irritation, Cat. 2; Hazardous to the aquatic environment, long-term (chronic), Cat. 4. | 5 - 10 % (weight) |
| Niobium (CAS no.: 7440-03-1) CLASSIFICATIONS: No data available. | 5 - 10 % (weight) |
| Zirconium (CAS no.: 7440-67-7; EC no.: 231-176-9) CLASSIFICATIONS: Pyrophoric solids, Cat. 1; Substances and mixtures which, in contact with water, emit flammable gases, Cat. 1. | 5 - 10 % (weight) |
| Aluminum (CAS no.: 7429-90-5; EC no.: 231-072-3) CLASSIFICATIONS: Flammable solids, Cat. 1; Substances and mixtures which, in contact with water, emit flammable gases, Cat. 2. | 1 - 5 % (weight) |
| TIN (CAS no.: 7440-31-5) CLASSIFICATIONS: No data available. | 1 - 5 % (weight) |
| Silicon (CAS no.: 7440-21-3) CLASSIFICATIONS: No data available. | 1 - 5 % (weight) |

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

Safety Data Sheet

Titanium

| | |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General advice | Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. |
| If inhaled | If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| In case of skin contact | Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Wash contaminated clothing before reuse. |
| In case of eye contact | Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention/advice. |
| If swallowed | Rinse mouth. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a poison center or doctor. |

4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11

4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Combustion products may contain metal oxides.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid actions that cause dust to become airborne. Do not breathe dust or mist. Avoid contact with skin. Wear appropriate personal protective equipment as described in Section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Safety Data Sheet

Titanium

Avoid dust, mist or fume formation. Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Normal temperatures and pressures do not affect the material. Keep in a dry and well-ventilated place.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

US OSHA Permissible Exposure Limits, Annotated Table Z-1, www.osha.gov:

| | OSHA PEL (C) Ceiling | Cal/OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling | NIOSH REL Up to 10-hour TWA (ST) STEL (C) Ceiling | ACGIH® TLV® 8-hour TWA (ST) STEL (C) Ceiling |
|---------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Aluminum (CAS no.: 7429-90-5) | | | | |
| Total dust | 15 mg/m ³ | 10 mg/m ³ | 10 mg/m ³ | |
| Respirable fraction | 5 mg/m ³ | 5 mg/m ³ | 5 mg/m ³ | 1 mg/m ³ |
| Chromium (III) compounds (CAS no.: 7440-47-3) | 0.5 mg/m ³ | 0.5 mg/m ³ | 0.5 mg/m ³ | 0.003 mg/m ³ -(IHL), water soluble |
| Chromium (VI) compounds) | (C) 1 mg/10m ³ Chromic acid and chromates | 0.005 mg/m ³ as Cr (C) 0.1 mg/m ³ | Ca 0.0002 mg/m ³ (8-hr-TWA) | 0.0002 mg/m ³ (IHL) (ST) 0.0005 mg/m ³ (IHL), water soluble |
| Zirconium compounds (CAS no.: 7440-67-7) | 5 mg/m ³ | 5 mg/m ³ (ST) 10 mg/m ³ | 5 mg/m ³ (ST) 10 mg/m ³ | 5 mg/m ³ (ST) 10 mg/m ³ |
| Tin inorganic compounds (except oxides) (CAS no.: 7440-31-5) | 2 mg/m ³ | 2 mg/m ³ ; also tin oxide; except SnH ₄ | 2 mg/m ³ ; except tin oxides | metal, oxide and inorganic compounds, except tin hydride: 2 mg/m ³ |
| Molybdenum (CAS no.: 7439-98-7) | | | | |
| Soluble compounds | 5 mg/m ³ | 0.5 mg/m ³ | | 0.5 mg/m ³ |
| Insoluble Compounds - Total dust | 15 mg/m ³ | 10 mg/m ³ | | |
| Insoluble Compounds | | 3 mg/m ³ (resp.) | | 10 mg/m ³ (IHL) 3 mg/m ³ (resp.) |
| Silicon (CAS no.: 7440-21-3) | | | | |
| Total dust | 15 mg/m ³ | 10 mg/m ³ | 10 mg/m ³ | |

Safety Data Sheet

Titanium

| | | | | |
|---------------------|---------------------|---------------------|---------------------|--|
| Respirable fraction | 5 mg/m ³ | 5 mg/m ³ | 5 mg/m ³ | |
|---------------------|---------------------|---------------------|---------------------|--|

Abbreviations: C = Ceiling limit; Ca = Potential occupational carcinogens; CAS No. = Chemical Abstract Service Number; IHL = Inhalable; ppm = parts per million; STEL = Short Term Exposure Limit; Thor. = Thoracic fraction; TLV® = Threshold Limit Value; TWA – Time weighted average

8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Pictograms



Eye/face protection

When engaged in activities where ingredients could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Wear face shield during welding or burning. Eye protection equipment must be tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

Skin protection

Wear protective gloves suitable for the material handled. Consult manufacturer specifications for further information.

Body protection

Wear protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Avoid actions that cause dust, mist or fume exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used in the context of respiratory protection program meeting the requirements of the OSHA respiratory protection standard [29 CFR 1910.134] to control exposures when ventilation or other controls are inadequate or discomfort or irritation is experienced. Respirator and/or filter cartridge selection should be based on American National Standards Institute (ANSI) Standards Z88.2 Practices for Respiratory Protection.

Thermal hazards

No data available.

Environmental exposure controls

Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

| | |
|-----------------------------------------------|--------------------|
| Appearance/form (physical state, color, etc.) | Metal Solid |
| Odor | No odor |
| Odor threshold | No data available. |
| pH | No data available. |
| Melting point/freezing point | No data available. |
| Initial boiling point and boiling range | No data available. |
| Flash point | No data available. |

Safety Data Sheet

Titanium

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| Evaporation rate | No data available. |
| Flammability (solid, gas) | No data available. |
| Upper/lower flammability limits | No data available. |
| Upper/lower explosive limits | No data available. |
| Vapor pressure | No data available. |
| Vapor density | No data available. |
| Relative density | No data available. |
| Specific gravity | 4.46 - 4.54 |
| Solubility(ies) | No data available. |
| Partition coefficient: n-octanol/water | No data available. |
| Auto-ignition temperature | No data available. |
| Decomposition temperature | No data available. |
| Viscosity | No data available. |
| Explosive properties | No data available. |
| Oxidizing properties | No data available. |

Other safety information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability

Stable under normal storage conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong acids, oxidizing agents, halogens.

10.6 Hazardous decomposition products

No data available.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Based on available data, classification data are not met

Skin corrosion/irritation

Based on available data, classification data are not met

Serious eye damage/irritation

Based on available data, classification data are not met

Respiratory or skin sensitization

May cause an allergic skin reaction. May cause allergy or asthma symptoms of breathing difficulties if inhaled.

Safety Data Sheet

Titanium

Germ cell mutagenicity

Based on available data, classification data are not met

Carcinogenicity

Based on available data, classification data are not met

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Based on available data, classification data are not met

STOT-single exposure

Based on available data, classification data are not met

STOT-repeated exposure

Based on available data, classification data are not met

Aspiration hazard

Based on available data, classification data are not met

Additional information

No data available.

SECTION 12: Ecological information

Toxicity

No data available on product

Persistence and degradability

No data available on product

Bioaccumulative potential

No data available on product

Mobility in soil

No data available.

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal of the product

Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

Safety Data Sheet

Titanium

Disposal of contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts Right To Know Components

Molybdenum (CAS no.: 7439-98-7)

Vanadium (CAS no.: 7440-62-2)

Chromium (CAS no.: 7440-47-3)

Zirconium (CAS no.: 7440-67-7)

Aluminum (CAS no.: 7429-90-5)

TIN (CAS no.: 7440-31-5)

Silicon (CAS no.: 7440-21-3)

New Jersey Right To Know Components

Titanium (CAS no.: 7440-32-6)

Molybdenum (CAS no.: 7439-98-7)

Vanadium (CAS no.: 7440-62-2)

Chromium (CAS no.: 7440-47-3)

Zirconium (CAS no.: 7440-67-7)

Aluminum (CAS no.: 7429-90-5)

TIN (CAS no.: 7440-31-5)

Safety Data Sheet

Titanium

Silicon (CAS no.: 7440-21-3)

Pennsylvania Right To Know Components

Molybdenum (CAS no.: 7439-98-7)

Vanadium (CAS no.: 7440-62-2)

Chromium (CAS no.: 7440-47-3)

Zirconium (CAS no.: 7440-67-7)

Aluminum (CAS no.: 7429-90-5)

TIN (CAS no.: 7440-31-5)

Silicon (CAS no.: 7440-21-3)

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Chromium (CAS no.: 7440-47-3)

Aluminum (CAS no.: 7429-90-5)

HMIS Rating

| Titanium | |
|---------------------|---|
| HEALTH | 2 |
| FLAMMABILITY | 0 |
| PHYSICAL HAZARD | 0 |
| PERSONAL PROTECTION | |

NFPA Rating



SECTION 16: Other information

16.1 Further information/disclaimer

Date of issue: February 28, 2019.

Safety Data Sheet Titanium

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. All materials may present unknown hazards and should be used with caution. In no event shall we be held liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if we have been advised of the possibility of such damages.

