



Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 18.07.2022


Version number 1

Revision: 18.07.2022

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

- **1.1 Product identifier**
 - **Trade name: PowderRange Ti64 (Fine)**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
 - **Sector of Use Additive Manufacturing.**
 - **Application of the substance / the mixture**
Additive Manufacturing.
Metal Working.
 - **Uses advised against Any Other Uses.**
- **1.3 Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Carpenter Additive.
Dennis Road
Widnes
Cheshire, WA8 0GU
United Kingdom
 - **Further information obtainable from: Health and Safety Department**
- **1.4 Emergency telephone number:**
For acute incidents contact the emergency services. For non-acute incidents please use the CHEMTREC number provided. CHEMTREC contact numbers are available 24 hours a day, 7 days a week. Language interpretation services are also available.
+(44)-870-8200418

2 Hazards identification

- **2.1 Classification of the substance or mixture**
 - **Classification according to Regulation (EC) No 1272/2008**
- 
- flame
- Flam. Sol. 1 H228 Flammable solid.
-
- **2.2 Label elements**
 - **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
 - **Hazard pictograms**



GHS02

- **Signal word Danger**
- **Hazard statements**
H228 Flammable solid.
- **Precautionary statements**
 - P101 If medical advice is needed, have product container or label at hand.
 - P102 Keep out of reach of children.

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- P103 Read label before use.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P240 Ground and bond container and receiving equipment.
- P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P370+P378 In case of fire: Use special powder for metal fires to extinguish.
- **2.3 Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

3 Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7440-32-6 EINECS: 231-142-3 Reg.nr.: 01-2119484878-14	titanium  Pyr. Sol. 1, H250; Self-heat. 1, H251; Water-react. 1, H260	50-100%
CAS: 7429-90-5 EINECS: 231-072-3	aluminium substance with a Community workplace exposure limit	2.5-10%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Special powder for metal fires. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water
- **5.2 Special hazards arising from the substance or mixture**
Product is not flammable. A high concentration of airborne dusts may form an explosive mixture with air.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

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- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **7.1 Precautions for safe handling**
Avoid creating dust where possible. Ensure good dust ventilation during handling. If necessary, use local exhaust ventilation.
Wet mopping or HEPA vacuuming is recommended to clean up any dusts that may be generated during handling and processing.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Not determined.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.

· **Ingredients with limit values that require monitoring at the workplace:**

7429-90-5 aluminium

TWA	Long-term value: 10 mg/m ³
	Inhalable Dust

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:**



Filter P3

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Powder
Colour:	Grey
Odour:	Characteristic
Odour threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/freezing point: Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Not determined.

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· **Vapour pressure:** Not applicable.

Density at 20 °C:	4.46992 g/cm ³
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.

· **Solubility in / Miscibility with water:**

Insoluble.

· **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

Dynamic: Not applicable.

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Kinematic:	Not applicable.
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9.2 Other information	No further relevant information available.
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10 Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No further relevant information available.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Metal oxide fumes

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | | |
|--|--|---|
| · 14.1 UN-Number
· ADR, IMDG, IATA | UN3089 | |
| · 14.2 UN proper shipping name
· ADR
· IMDG, IATA | 3089 METAL POWDER, FLAMMABLE, N.O.S.
METAL POWDER, FLAMMABLE, N.O.S. | |
| · 14.3 Transport hazard class(es)
· ADR, IMDG, IATA |  | |
| · Class | | 4.1 Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives |
| · Label | | 4.1 |
| · 14.4 Packing group
· ADR, IMDG, IATA | II | |
| · 14.5 Environmental hazards: | Not applicable. | |
| · 14.6 Special precautions for user | Warning: Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives | |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. | |
| · UN "Model Regulation": | UN 3089 METAL POWDER, FLAMMABLE, N.O.S., 4.1, II | |

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
H250 Catches fire spontaneously if exposed to air.

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*H251 Self-heating: may catch fire.**H260 In contact with water releases flammable gases which may ignite spontaneously.*· **Department issuing SDS:** Environment protection department.· **Abbreviations and acronyms:***ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Flam. Sol. 1: Flammable solids – Category 1**Pyr. Sol. 1: Pyrophoric solids – Category 1**Self-heat. 1: Self-heating substances and mixtures – Category 1**Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1*· *** Data compared to the previous version altered.**

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

- **1.1 Product identifier**
- **Trade name: PowderRange Ti64 (Coarse)**
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Sector of Use Additive Manufacturing.**
- **Application of the substance / the mixture**
Additive Manufacturing.
Metal Working.
- **Uses advised against Any Other Uses.**
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Carpenter Additive.
Dennis Road
Widnes
Cheshire, WA8 0GU
United Kingdom
- **Further information obtainable from: Health and Safety Department**
- **1.4 Emergency telephone number:**
For acute incidents contact the emergency services. For non-acute incidents please use the CHEMTREC number provided. CHEMTREC contact numbers are available 24 hours a day, 7 days a week. Language interpretation services are also available.
+(44)-870-8200418

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified, according to the GB CLP regulation.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008 Void**
- **Hazard pictograms Void**
- **Signal word Void**
- **Hazard statements Void**
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT: Not applicable.**
- **vPvB: Not applicable.**

* 3 Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description: Mixture of substances listed below with nonhazardous additions.**

- **Dangerous components:**

CAS: 7440-32-6	titanium	50-100%
EINECS: 231-142-3	⚠ Pyr. Sol. I, H250; Self-heat. I, H251; Water-react. I, H260	
Reg.nr.: 01-2119484878-14		

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CAS: 7429-90-5
EINECS: 231-072-3

aluminium
substance with a Community workplace exposure limit

2.5-10%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- **4.1 Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Special powder for metal fires. Do not use water.
- **5.2 Special hazards arising from the substance or mixture**
Product is not flammable. A high concentration of airborne dusts may form an explosive mixture with air.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **7.1 Precautions for safe handling**
No special measures required.
Avoid creating dust where possible. Ensure good dust ventilation during handling. If necessary, use local exhaust ventilation.
Wet mopping or HEPA vacuuming is recommended to clean up any dusts that may be generated during handling and processing.
- **Information about fire - and explosion protection:** Not determined.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Not determined.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

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· 7.3 **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- 8.1 **Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.

· **Ingredients with limit values that require monitoring at the workplace:**

7429-90-5 aluminium

TWA	Long-term value: 10 mg/m ³ Inhalable Dust
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- **Additional information:** The lists valid during the making were used as basis.
- 8.2 **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
- **Respiratory protection:**



Filter P3

- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

9 Physical and chemical properties

- 9.1 **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Powder
Colour:	Grey
Odour:	Characteristic
Odour threshold:	Not determined.

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· pH-value:	Not applicable.
· Change in condition Melting point/freezing point:	Undetermined.
· Flash point:	Not applicable.
· Flammability (solid, gas):	Not flammable Not determined.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Not determined.
· Explosion limits: Lower: Upper:	Not determined. Not determined.
· Vapour pressure:	Not applicable.
· Density at 20 °C:	4.46992 g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with water:	Insoluble.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity: Dynamic: Kinematic:	Not applicable. Not applicable.
· 9.2 Other information	No further relevant information available.

10 Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No further relevant information available.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Metal oxide fumes

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

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Trade name: PowderRange Ti64 (Coarse)

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- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Smaller quantities can be disposed of with household waste.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|--|-----------------|
| · 14.1 UN-Number | |
| · ADR, ADN, IMDG, IATA | not regulated |
| · 14.2 UN proper shipping name | |
| · ADR, ADN, IMDG, IATA | not regulated |
| · 14.3 Transport hazard class(es) | |
| · ADR, ADN, IMDG, IATA | |
| · Class | not regulated |
| · 14.4 Packing group | |
| · ADR, IMDG, IATA | not regulated |
| · 14.5 Environmental hazards: | Not applicable. |
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| · UN "Model Regulation": | not regulated |

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Trade name: PowderRange Ti64 (Coarse)

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15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H250 Catches fire spontaneously if exposed to air.

H251 Self-heating: may catch fire.

H260 In contact with water releases flammable gases which may ignite spontaneously.

- **Department issuing SDS:** Environment protection department.

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Pyr. Sol. 1: Pyrophoric solids – Category 1

Self-heat. 1: Self-heating substances and mixtures – Category 1

Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1

- *** Data compared to the previous version altered.**