

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 31.01.2024

Version number 1

Revision: 31.01.2024

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

### 1.1 Product identifier

Trade name **Kera Ti5-Powder**

Article number: 10045000-P

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

No further relevant information available.

**Application of the substance / the mixture** For the additive manufacturing of dental frameworks

### 1.3 Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Eisenbacher Dentalwaren ED GmbH  
Dr. - Konrad - Wiegand - Straße 9  
63939 Wörth / Main, Germany  
Tel.: 0049 9372 / 94 04 - 0  
www.eisenbacher.de

#### Information:

product management tel.: +49 93 72 - 94 04 - 0  
or by mail: info@eisenbacher.de

### 1.4 Emergency telephone number:

Tel.: +49 (0) 9372 9404 0, Monday to Friday 8.00 a.m. to 5.00 p.m., in German and English, also contact the local poison control centres

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

The following classification is not applicable to the alloy but only for the fumes, smokes and dusts formed during the processing and machining.

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

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/hearing protection.  
P370+P378 In case of fire: Use CO<sub>2</sub>, sand, extinguishing powder to extinguish.

#### 2.3 Other hazards Risk of dust explosion, dust explosion class ST1

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## SECTION 3: Composition/information on ingredients

. **3.2 Chemical characterisation: Mixtures** Metal powder based on titanium 6-aluminium 4-vanadium alloy

. **Description:** Titanium alloy

. **Dangerous components:**

CAS: 7429-90-5 aluminium powder (stabilised) ≥0-<10%

EINECS: 231-072-3 Flam. Sol. 1, H228; Water-react. 2, H261

Index number: 013-002-00-1

. **Additional information** No further relevant information available.

## SECTION 4: First aid measures

. **4.1 Description of first aid measures**

. **General information** No special measures required.

. **After inhalation :** Supply fresh air and call for doctor for safety reasons.

. **After skin contact :** Wash with water and soap.

. **After eye contact :** Rinse opened eye for 15 minutes under running water.

. **After swallowing :** In case of persistent symptoms 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.

## SECTION 5: Firefighting measures

. **5.1 Extinguishing media**

. **Suitable extinguishing agents**

Special powder for metal fires. Do not use water.

CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

Use fire fighting measures that suit the environment.

. **For safety reasons unsuitable extinguishing agents** Water.

. **5.2 Special hazards arising from the substance or mixture**

Combustible material

Hydrogen gas may be closed in beneath the foam. Avoid ignition sources during cleaning.

Rapid combustion with liquid oxygen, ozone and strong oxidants.

Risk of dust explosion

Fire can cause release of :

Metal vapor and metal oxides as fumes.

. **5.3 Advice for firefighters**

. **Protective equipment:**

Do not inhale explosion gases or combustion gases.

Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

. **6.1 Personal precautions, protective equipment and emergency procedures**

Keep away from ignition sources

Avoid causing dust.

Do not inhale fumes and vapours of melted product.

Ensure adequate ventilation

Wear protective equipment. Keep unprotected persons away.

. **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.

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## 6.3 Methods and material for containment and cleaning up:

Dispose of the material collected according to regulations.

Avoid causing dust.

Collect mechanically.

## 6.4 Reference to other sections

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Keep containers tightly sealed.

Store in cool, dry conditions in well sealed containers.

Prevent formation of dust.

Any deposit of dust which cannot be avoided must be removed regularly.

### Information about protection against explosions and fires:

Use explosion-proof apparatus / fittings and spark-proof tools.

Keep away from ignition sources - Do not smoke.

Dust can combine with air to form an explosive mixture.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage

**Requirements to be met by storerooms and containers:** Store only in the original container.

#### Information about storage in one common storage facility:

Do not store together with acids.

Store away from oxidising agents.

Do not store together with alkalis (caustic solutions).

#### Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**7.3 Specific end use(s)** We are not currently aware of any specific end uses beyond those specified in section 1.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Components with critical values that require monitoring at the workplace:

##### 7429-90-5 aluminium powder (stabilised)

WEL (Great Britain) Long-term value: 10\* 4\*\* mg/m<sup>3</sup>

\*inhalable dust \*\*respirable dust

**Additional information:** The lists that were valid during compilation were used as a basis.

### 8.2 Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Wash hands during breaks and at the end of the work.

#### Breathing equipment:

Required when dusts are generated.

Not necessary if room is well-ventilated.

Filter P2.

#### Protection of hands:

Protective gloves:

In case of spray contact at least protection index 2 recommended, according to more than 30 min. penetration time (EN 374).

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- Layer thickness of gloves at least: 0.4 mm
- In case of prolonged and intensive contact protection index 6 recommended, according to more than 480 min. penetration time (EN 374).
- Layer thickness of gloves at least: 0.7 mm
- . **Material of gloves**
  - Butyl rubber, BR
  - Nitrile rubber, NBR
  - Natural rubber, NR
  - PVC or PE gloves
- . **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 (DIN 58211, EN 166)
- . **Body protection:** Light weight protective clothing
- . **Limitation and supervision of exposure into the environment**
  - Do not empty into drains.
  - Risk of explosion.

### SECTION 9: Physical and chemical properties

#### . 9.1 Information on basic physical and chemical properties

##### . General Information

##### . Appearance:

- |                  |                 |
|------------------|-----------------|
| Form:            | Powder          |
| Colour:          | metallic grey   |
| Smell:           | Odourless       |
| Odour threshold: | Not determined. |
| pH-value:        | Not applicable. |

##### . Change in condition

- |  |          |
|--|----------|
| Melting point/freezing point:            | 1,660 °C |
| Initial boiling point and boiling range: | 3,287 °C |

- |                                 |                     |
|---------------------------------|---------------------|
| Flash point:                    | Not applicable      |
| Inflammability (solid, gaseous) | Flammable.          |
| Decomposition temperature:      | Not determined.     |
| Explosive properties:           | Not determined.     |
| Critical values for explosion:  |                     |
| Lower:                          | Not determined.     |
| Upper:                          | Not determined.     |
| Dust explosion class:           |                     |
| Oxidising properties            | none                |
| Steam pressure:                 | Not applicable.     |
| Density                         | Not determined      |
| Settled apparent density        | 5 kg/m <sup>3</sup> |
| Relative density                | Not determined.     |
| Vapour density                  | Not applicable.     |
| Evaporation rate                | Not applicable.     |

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- . **Solubility in / Miscibility with Water:** Insoluble
- . **Partition coefficient: n-octanol/water:** Not determined.
- . **Viscosity:**
  - dynamic:** Not applicable.
  - kinematic:** Not applicable.
- . **Solvent content:**
  - Solids content:** 100.0 %
- . **9.2 Other information** No further relevant information available.

### SECTION 10: Stability and reactivity

- . **10.1 Reactivity**  
No hazardous reactions when stored and handled according to instructions.  
Risk of dust explosion.
- . **10.2 Chemical stability**
  - . **Thermal decomposition / conditions to be avoided:** Stable at ambient temperature
- . **10.3 Possibility of hazardous reactions** Risk of dust explosion
- . **10.4 Conditions to avoid**  
Protect from heat and direct sunlight.  
Avoid sources of ignition.
- . **10.5 Incompatible materials:** Avoid prolonged contact with air.
- . **10.6 Hazardous decomposition products:** No further relevant information available.

### SECTION 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** Slightly Irritating
    - . **Serious eye damage/irritation** Moderate irritation
  - . **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- . **Additional toxicological information:**  
Inhalation of dust may cause irritation of the respiratory tract.  
Irritation of the eyes and skin is possible from direct contact with the dust.
- . **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** No further relevant information available.
- . **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.

### SECTION 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** Insoluble in water.

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- . **Additional ecological information:**
- . **General notes:**  
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.
- . **12.5 Results of PBT and vPvB assessment**
- . **PBT:** Not applicable.
- . **vPvB:** Not applicable.
- . **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- . **13.1 Waste treatment methods**
- . **Uncleaned packaging:**
- . **Recommendation:**  
Disposal must be made according to official regulations.  
Dispose of packaging according to regulations on the disposal of packagings.  
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.  
Packagings that cannot be cleaned are to be disposed of in the same manner as the product.
- . **Recommended cleaning agent:** Water, if necessary with cleaning agent.

## SECTION 14: Transport information

- . **14.1 UN-Number**
- . **ADR/RID/ADN, IMDG, IATA** UN3089
- . **14.2 UN proper shipping name**
- . **ADR/RID/ADN** 3089 METAL POWDER, FLAMMABLE, N.O.S.
- . **IMDG, IATA** METAL POWDER, FLAMMABLE, N.O.S.
- . **14.3 Transport hazard class(es)**
- . **ADR/RID/ADN**



- . **Class** 4.1 (S4) Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives
- . **Label** 4.2

. **IMDG**



- . **Class** 4.1 Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives
- . **Label** 4.2

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**. IATA**



<p><b>. Class</b></p> <p><b>. Label</b></p> <p><b>. 14.4 Packing group</b></p> <p><b>. ADR/RID/ADN, IMDG, IATA</b></p> <p><b>. 14.5 Environmental hazards:</b></p> <p><b>. 14.6 Special precautions for user</b></p> <p><b>. Kemler Number:</b></p> <p><b>. EMS Number:</b></p> <p><b>. Segregation groups</b></p> <p><b>. Stowage Category</b></p> <p><b>. Handling Code</b></p> <p><b>. Segregation Code</b></p> <p><b>. 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b></p> <p><b>. Transport/Additional information:</b></p> <p><b>. ADR/RID/ADN</b></p> <p><b>. Excepted quantities (EQ)</b></p> <hr/> <p><b>. IMDG</b></p> <p><b>. Limited quantities (LQ)</b></p> <p><b>. Excepted quantities (EQ)</b></p> <hr/> <p><b>. UN "Model Regulation":</b></p>	<p>4.1 Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives Forbidden</p> <p>II Not applicable. Warning: Flammable solids, self-reactive substances, polymerizing substances and solid desensitized explosives 49 F-G,S-M (SGG7) Heavy metals and their salts (including their organometallic compounds), (SGG15) powdered metals D H1 Keep as dry as reasonably practicable SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.</p> <p>Not applicable.</p> <p>Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g</p> <hr/> <p>0 Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g</p> <p>UN 3089 METAL POWDER, FLAMMABLE, N.O.S. 4.2, II</p>
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## SECTION 15: Regulatory information

- . 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- . Poisons Act**
- . Regulated explosives precursors**  
None of the ingredients is listed.
- . Regulated poisons**  
None of the ingredients is listed.
- . Reportable explosives precursors**  
7429-90-5 aluminium powder (stabilised): Listed

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. **Reportable poisons**

None of the ingredients is listed.

. **Directive 2012/18/EU**

. **Named dangerous substances - ANNEX I** None of the ingredients is listed.

. **National regulations**

. **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

. **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

. **Relevant phrases**

H228 Flammable solid.

H261 In contact with water releases flammable gases.

. **Contact:** info@eisenbacher.de

. **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

Water-react. 2: Substances and mixtures which in contact with water emit flammable gases – Category 2

. **Sources:** source ECHA: European Chemicals Agency, <http://echa.europa.eu/>

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