



0123

# Material Safety Data Sheet

## -System TI 5-Blank-

## -System TI 5-Bar-



in accordance with the Regulation (EC) 1907/2006  
(REACH)

Version no.: 06

Effective as of: 12/2016  
Replaces version no. 05 of 04/2015

1. Identification of the substance/preparation and of the company	
1.1 Trade name:	System TI 5-Blank
1.2 Product description:	Dental alloy of titan aluminium vanadium base grade 5, Dental continuous casting; or other casting process
Product form:	Rod, disc, cylinder or varying geometries
Purpose:	The production of crowns, bridges and dentures in dentistry <b>This product is not approved for use in the production of implants.</b>
1.3 Producer:	Adentatec GmbH
Street:	Konrad-Adenauer-Straße 13
Zip code, town, country	50996 Köln/ GERMANY
Telephone:	0 221 - 35 96 100
Telefax:	0 221 - 35 96 170
Department providing the information:	Klaus Renner
Emergency information:	Tel.: 0 221 - 35 96 100
E-mail:	info@adentatec.com
Website:	www.adentatec.com
2. Hazards identification	
2.1 Description of the risk:	not applicable - see section 2.2
2.2 Special hazard warnings for humans and for the environment:	This product needs not be labelled due to the calculation procedure of the "EC General Classification Directive for Preparations" in its latest valid version.
Users:	Qualified professionals (dental technicians, dentists)
Classification system:	The classification complies with the latest EU lists, but there are additional data from specialized literature and from the company.
2.2 GHS0 label elements:	According to Regulation (EC) No. 1272/2008: not applicable Hazard pictogram: not applicable Signal word: not applicable Hazard statement: not applicable
2.3 Other hazards during treatment and processing of the alloy:	Inhalation of grinding dust, irritation of the skin and eyes. Results of PBT and vPvB assessment: PBT: not applicable. vPvB: not applicable.
3. Composition / Information about the components	
The information as to risk and precautions given in the chapters 4 to 8, 10 to 12 do not only apply to the product itself, rather to the resulting dust and vapours generated when working with it.	
3.1 Chemical composition (ASTM F136-e1):	
Titanium alloy	Chemical characterization:
Titanium Ti	Rest
	50 - 99,5 %
	CAS: 7440-32-6
	EINECS: 231-142-3



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EINECS: 231-072-3	
Vanadium V	3,5 - 4,5 %
CAS: 7440-62-2 EINECS: 231-171-1	
Oxygen O	0,13 %
CAS: 7782-44-7 EINECS: 231-956-9	
Iron Fe	0,25 %
CAS: 7439-89-6 EINECS: 231-096-4	
<b>4. First Aid Measures</b>	
4.1 Description of the First Aid measures:	No specific action required
4.2 Most important acute and delayed symptoms and effects:	
After inhalation:	Supply fresh air, in case of discomfort, see a doctor.
After swallowing:	Rinse out mouth and give plenty of water to drink. Seek medical advice in case of persistent discomfort.
After skin contact:	Wash with soap and water.
After eye contact:	Rinse eye under running water and seek medical advice.
4.3 Information for medical urgent care or a specialised treatment:	Control examination according to the BG-guidelines G39
<b>5. Fire-fighting Measures</b>	
5.1 Extinguishing agents:	Use firefighting measures that suit the environment. The product itself is not flammable. ABC dry powder, foam or sand. <b>NO WATER!</b>
5.2 Special hazards arising from the substance or mixture:	Metal vapours and metal oxides in the form of smoke and gas.
5.3 Advice for fire-fighters:	Only use the extinguishing agents specified under 5.1. Avoid inhalation of fire and explosion fumes!
<b>6. Accidental Release Measures</b>	
6.1 Personal precautions, protective equipment and emergency procedures:	In case of exposure to fumes, dust or aerosol: Extractors at the workplace If there is no extractor, use respiratory protection. Ensure adequate ventilation.
6.2 Environmental precautions:	Dispose of any rests / dental scrap in an environmentally sound manner. Swarf must not enter drainage system, surface or ground water.
6.3 Methods and material for containment and cleaning up:	Absorb swarf dust mechanically or by means of aspirators and fill in suitable recipients for disposal; avoid raising dust. Do not use compressed air, do not blow off.



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6.4 Reference to other sections:	See sections 4 and following.
<b>7. Handling and Storage</b>	
7.1 Precautions for safe handling:	Ensure good ventilation/extraction at workplace. Avoid dust formation. During thermal or chipping processing, extractors are required on the processing machines.
7.2 Conditions for safe storage, including any incompatibilities:  Information for storage together with other products:	Only store in the original packaging. The delivery units must be secured against skidding, tilting, rolling and falling.  Not required
Further information on storage conditions:	none
Storage class: Classification according to the operational safety regulation "Betriebssicherheitsverordnung":	VCI 13  not applicable
7.3 Specific end use(s)	Ensure traceability of lots.
<b>8. Exposure controls and personal protection</b>	
8.1 Control parameters:	Particulate matter threshold in accordance with Technical Rule for Hazardous Substances 900 ["Technische Regeln für Gefahrstoffe - TRGS 900"]  7440-32-6 titanium and 7440-62-2 vanadium Please observe the general particulate matter threshold limits according to TRGS 900.  7429-92-5 aluminium Particulate matter MAK: 4 mg/m <sup>3</sup> (inhalable fraction) 3 mg/m <sup>3</sup> (alveolar fraction)
8.2 Exposure controls:  Additional information:	The usual precautions when dealing with chemicals must be observed.  Information based on the lists valid during the issue.
<b>Personal protective equipment:</b>	Wear safety shoes. <b>Respiratory protection:</b> In case of insufficient ventilation: respiratory protection. Short-term filter device: ABEK multiple range filtre according to DIN EN 14387 filtre P3. <b>Hand protection:</b> <b>Protective gloves (DIN EN 374):</b> In splash contact, protection index 2 is recommended, corresponding to more than 30 min. permeation time in accordance to EN 374. Minimum layer thickness/glove: 0.4 mm In case of a longer and more frequent contact, protection index 6 is recommended, corresponding to more than 480 min. permeation time in accordance to EN 374. Minimum layer thickness/glove: 0.7 mm  <b>Material of gloves:</b> Butyl rubber



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<p><b>General protection and hygiene measures:</b></p>	<p>Nitrile-butadiene rubber Natural rubber (latex) Chloroprene rubber Gloves made of Neoprene. <b>Penetration time of the glove material:</b> The exact penetration time for the protective gloves must be obtained from the producer of the gloves and must be observed. <b>Eye protection: Protective goggles (DIN EN 175, DIN EN 166)</b> <b>Body protection:</b> Light protective clothing.</p> <p>Do not eat, drink or smoke during use. Wash hands before breaks and after finishing work. Avoid contact with eyes and skin. Dust, smoke, Do not inhale fumes.</p>
<p><b>9. Physical and Chemical Properties</b></p>	
<p>9.1 Information on basic physical and chemical properties:</p>	<p><b>Tensile strength:</b> &gt; 825 MPa (N/mm<sup>2</sup>) <b>Hardness:</b> &gt; 300 HV 10/30 <b>Fracture strain:</b> &gt; 8 % <b>Elastic limit:</b> &gt; 760 MPa (N/mm<sup>2</sup>) <b>Density:</b> 4.4 g/cm<sup>3</sup> <b>Thermal expansion coefficient:</b> 10 (10<sup>-6</sup>/°C) <b>Melting point:</b> 1650°C +/- 50°C <b>Risk of explosion:</b> The Product is not explosive. <b>pH value:</b> not applicable</p>
<p>9.2 Other information:</p>	<p><b>Form:</b> Rod, disc, cylinder or varying geometries <b>Colour product-specific:</b> Metallic grey <b>Odor:</b> Odorless <b>Solubility in / Miscibility with water:</b> insoluble <b>Flammability:</b> non-inflammable</p>
<p><b>10. Stability and Reactivity</b></p>	
<p>10.1 Reactivity: 10.2 Chemical stability: 10.3 Possibility of hazardous reactions 10.4 Conditions to avoid: 10.5 Incompatible materials 10.6 Hazardous decomposition products</p>	<p>not applicable not applicable not applicable not applicable not applicable Can emit metallic vapour when melting. No hazardous decomposition products known.</p>
<p><b>11. Toxicological information</b></p>	
<p>11.1 Information on toxicological effects</p>	<p>The product does not trigger toxic reactions and is not allergenic. Inhalation of dust may result in respiratory irritation. Irritation of the eyes and skin are possible through direct contact with the dust. CMR effects (carcinogenic, mutagenic or teratogenic effects): No further relevant information available.</p>
<p><b>12. Information About the Ecology:</b></p>	



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<p>12.1 Toxicity: 12.2 Persistence and degradability: 12.3 Bioaccumulative potential: 12.4 Mobility in soil: 12.5 Results of the PBT and vPvB assessment: 12.6 Other adverse effects:</p>	<p>No results known from animal testing.</p> <p>not applicable</p> <p>not known</p> <p>not applicable</p> <p>not known</p> <p>not known</p> <p>The product is not subject to classification according to the calculation method of the General Classification guideline for preparations of the European Community in the last version.</p>
<b>13. Disposal Considerations</b>	
<p>13.1 Waste treatment methods:</p>	<p>The disposal of the product does not entail any hazards; however, the waste must be disposed of according to national or regional regulations.</p> <p><b>Recommendation:</b> Contact waste material market (alloy) regarding recycling <b>European Waste Catalogue 06 03 15:</b></p> <ul style="list-style-type: none"> <li>- Waste created during grinding 12 01 01</li> <li>- Ferrous metal filings and turnings</li> </ul> <p><b>Uncleaned packages:</b> <b>Recommendation:</b> Packages that cannot be cleaned are to be disposed of in the same way as the substance. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.</p>
<b>14. Transport Information</b>	
<p>14.1 UN number: 14.2 UN proper shipping name: 14.3 Transport hazard classes:  14.4 Packing group: 14.5 Environmental hazards: 14.6 Special precautions for user: 14.7 Transport in bulk according to Annex II of MARPOL Convention 73/78 and the IBC Code:</p>	<p>-</p> <p>not applicable</p> <p>No hazardous material in the sense of the transport regulations. Dental alloys are not a dangerous good under transport regulations:</p> <ul style="list-style-type: none"> <li>- Ground transport ADR/RID/ADN and GGVS/GGVE (cross-border/domestic)</li> <li>- Maritime transport IMDG/GGV sea</li> <li>- Air transport ICAO-TI and IATA-DGR</li> </ul> <p>not applicable</p> <p>See section 13</p> <p>no specific precaution required</p> <p>see section 14.3</p>
<b>15. Regulatory information</b>	
<p>Safety, health and environmental regulations; legislation specific for the substance or mixture:</p>	<p><b>Labelling according to EU Directives:</b> According to the EU Directives and the German Ordinance on Hazardous Substances, the product is not subject to labelling.</p>



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15.2 Chemical safety assessment:	<p>(see section 6.1).</p> <p><b>Classification according to the German Operational Safety Regulation (BetrSichV):</b> not applicable</p> <p><b>Code letter(s) and hazard description(s) of the product:</b> not applicable</p> <p><b>Hazard-determining components of labelling:</b> not applicable</p> <p>not applicabel; was not carried out.</p>
<b>16. Other information</b>	
<p>The information is based on our present state of knowledge, they do not constitute a guarantee of product properties and do not establish a contractual relationship. However, Adentatec GmbH does not assume any explicit or implicit guarantee or warranty as to the correctness, reliability or completeness of the information. Adentatec GmbH advises any person receiving this information, not to use the product for any other use than the intended use described in section 1.2. The user is responsible for complying with all the necessary legal regulations.</p> <p>The product must be used by qualified and trained dental technicians, who are aware of the correct use and can be held responsible in case of improper use.</p> <p>Relevant H- and P-phrases.</p> <p>H335 May cause respiratory irritation. H413 May cause long lasting harmful effects to aquatic life. Do not allow undiluted product to reach the sewage system. P260 Do not breathe dust/fume/gas/mist/vapours/spray P281 Use personal protective equipment as required P285 In case of inadequate ventilation wear respiratory protection</p>	
Abbreviations and definitions	<p>ADR: Accord européen sur le transport des marchandises dangereuses par route</p> <p>CAS: Chemical Abstracts Service (division of the American Chemical Society)</p> <p>CLP: Classification Labelling Packaging</p> <p>EINECS: European Inventory of Existing Commercial Chemical Substances</p> <p>GHS: Globally Harmonized System</p> <p>H-phrase: Hazard statement</p> <p>IATA: International Air Transport Association</p> <p>IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)</p> <p>ICAO: International Civil Aviation Organization</p> <p>ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)</p> <p>IMDG: International Maritime Code for Dangerous Goods</p> <p>LC50: Lethal concentration, 50 percent</p> <p>LD50: Lethal dose, 50 percent</p> <p>P-phrase: Precautionary statement</p> <p>PBT: Provider Backbone Transport</p> <p>RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)</p> <p>vPvB: very persistent very bioaccumulating</p>