



UPCERA®

UPCERA-TC4

Dental Titanium Alloy TC4

Declaration

This PowerPoint presentation is specifically designed for internal company training, intended to provide guidance and reference for internal personnel. As the content has not undergone advertising filing, this document is for internal training use only and shall not be used directly as promotional materials or for advertising dissemination.

S1 UPCERA-TC4

Product Introduction

Ti: Balance

Al: 5,5-
6,8%

V: 3,5-4,5%

Fe ≤0,3% O≤0,2%
C≤0,08% N≤0,05%
H≤0,01%.



Product Description

UPCERA-TC4, utilized as a raw material in dental CAD/CAM technology, is crafted from Ti-6Al-4V, a titanium alloy renowned for its high strength, excellent biocompatibility, and superior corrosion resistance.

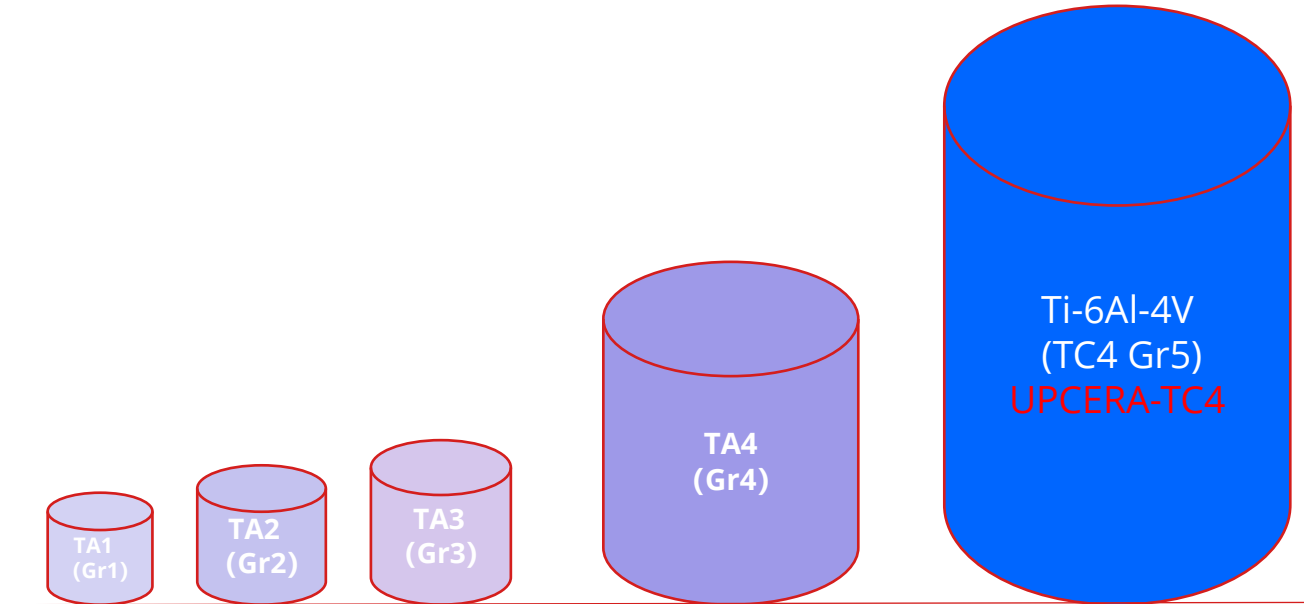
Intended use

A titanium alloy disc for the production of dental crowns and bridges through CAD/CAM machining, not suitable for the production of implants

Titanium alloy grading

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| |
|------------------------------|
| Commercially Pure Titanium |
| Commercially Pure Titanium |
| Commercially Pure Titanium |
| Medical Grade Titanium Alloy |
| Medical Grade Titanium Alloy |



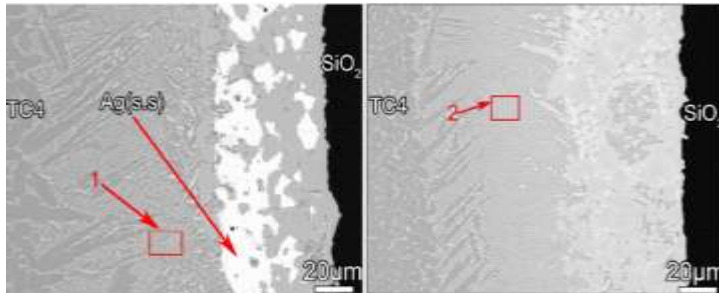
UPCERA TC4 Product Features

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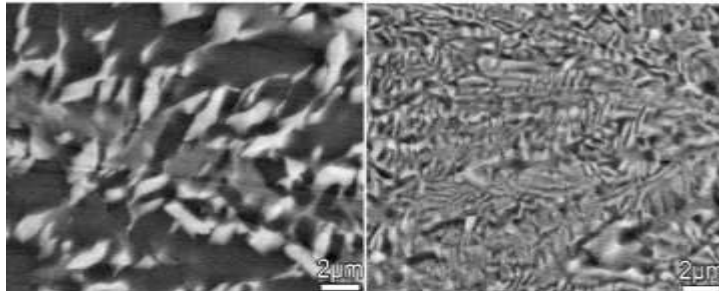
- Made from grade 5 titanium alloy TiAl6V4.
 - Exceptional gold-ceramic bonding properties
 - Extremely corrosion resistant.
 - Excellent biocompatibility
 - Particularly patient friendly due to low thermal conductivity.
 - Perfect suitable for implant-supported restorations, superstructures, bars, abutments, crowns and bridges.
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Technical data



(a) BSE image of micro-filler joint

(b) BSE image of nano-filler joint



(c) High-magnification image in selection box 1

(d) High-magnification image in selection box 2



0.2%, specified non proportional elongation strength Rp0.2/Mpa: 860 Mpa

Young's modulus: 110Gpa.

Tensile strength: 885Mpa

Corrosion resistance: $\leq 200 \mu\text{g} / \text{cm}^2$

Hardness: 295 HV10.

Density: $4.4\text{g}/\text{cm}^3$.

Linear expansion coefficient: $10 \times 10^{-6}\text{K}^{-1}$.

Elongation after fracture/% : 8%

Max. firing temp. maximale: max. 950°C

Casting temperature: 1700°C .

Melting temperature : $1640\text{-}1670^\circ\text{C}$

Tarnish resistance: yes

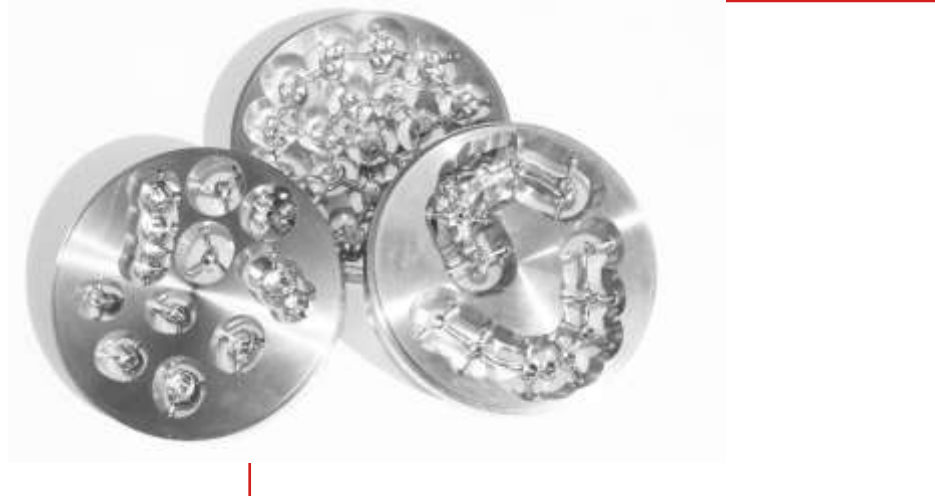
UPCERA TC4 product Usage Instructions

Intended use

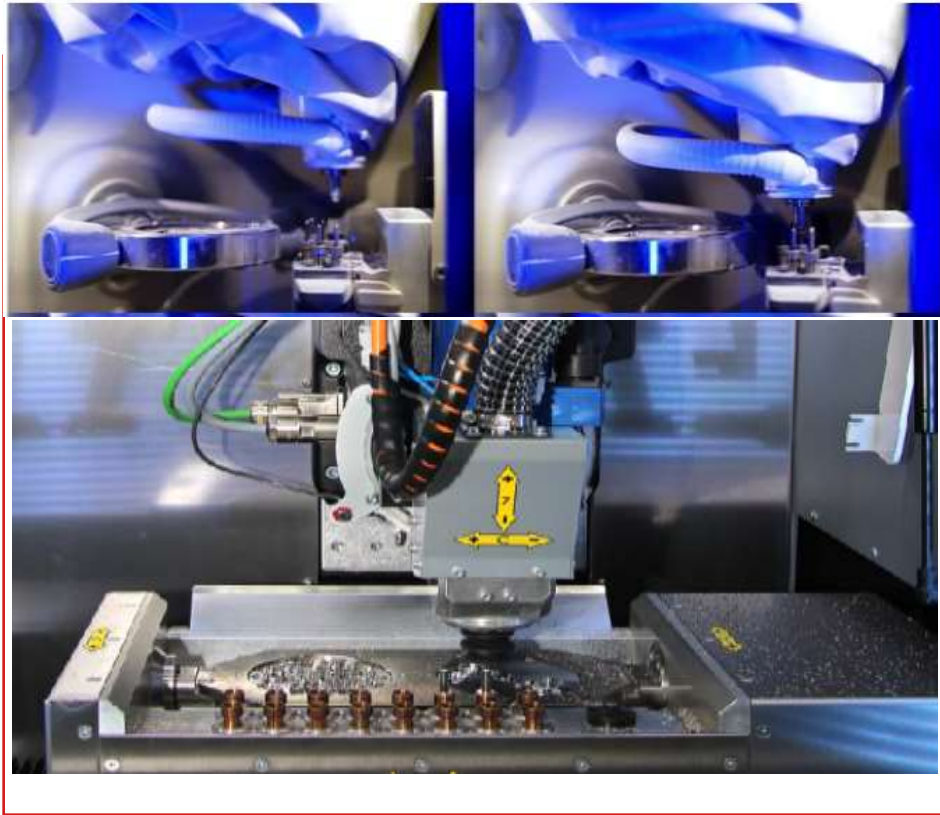
crown
under 16-unit crowns and bridge
abutment
-Bars

Milling

- Upcera TC4 Disc is constructed for CNC milling machines. Please follow the instructions and parameters of the respective manufacturer of CAM Software and CNC milling machine.



UPCERA TC4 product Usage Instructions



Instructions for Use

- **CAD**

The design should be done with appropriate CAD software. Please consider an anatomically reduced framework design for the veneering with ceramic. The wall thickness should not be less than 0.3 mm. Choose a sufficient connector dimension (6-9 mm²). Sharp edges and undercuts should be avoided.

- **Cutting out the frameworks from the Blank**

Remove the milled frameworks with suitable cutting tools and smoothing the supports.

- **Laser welding**

Sufficient and secure connections can only be done by laser welding. The use of Ti-welding wire is an option.

Exceptional gold-ceramic bonding properties

◆ Preparation before ceramic veneering

The frameworks can be elaborated with standard carbide cutters, look for smooth transitions and avoid overlapping material. Please use the same cutter for one alloy to avoid contamination. The minimum thickness of the prepared coping should not be less than 0.3 mm. It's recommended to sandblast the frames with 110 μm of Aluminium oxide with 2-3 bar and clean with steam cleaner. Consider the firing process with max. 950°C, Otherwise lattice transformation might occur.



UPCERA TC4 Packaging Information

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-Product Information

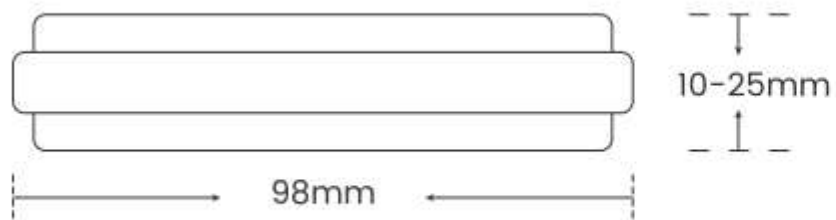
Manufacturer: Audental
Manufacturing Location: China
Brand: UPCERA
Appearance: Disc
Specification: Box/Piece

-Validity Period

Long-term Stability

-Storage conditions

Temperature, humidity or light has no effect on the product



D98X10 D98X12 D98X14 D98X16
D98X18 D98X20 D98X25

UPCERA TC4 Product Precautions

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- ◆ Metal dust is harmful to health. Use when grinding and sandblasting dust extraction and respirator with filter FFP3 – DIN EN 149.
- ◆ In case of a proven allergy against an ingredient of this alloy, the alloy must not be used for safety reasons
- ◆ In exceptional cases, electrochemically induced, local irritations have been reported
- ◆ When different alloy groups are used, galvanic effects might occur
- ◆ Used discs should be not processed for further use as a medical device
- ◆ Dispose of Upcera TC4-Disc residues and dust in an environmentally friendly manner. Grinding dust must not enter groundwater, water bodies or sewers
- ◆ Any serious incident that involve the product must be reported to the manufacturer and the competent authority in the accorded country

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THANK YOU
