

# BioUniversal®



## Reduced-gold universal alloy

to be veneered with special ceramic materials and composite materials.

<b>Au</b> 59.4	<b>Pt</b> 2.0	<b>Pd</b> 9.5	<b>Ag</b> 25.5	<b>Zn</b> 2.0	<b>Sn</b> <1.0	<b>Fe</b> <1.0	<b>Re</b> <1.0	<b>Ru</b> <1.0
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### Advantages

- Copper-free
- Yellow color
- Compatible with low fusing special ceramic and composite materials
- High temperature strength
- Excellent milling properties

### Indication

Onlays,  $\frac{3}{4}$  crowns, PFM Crowns, telescope and conus crowns, posts, short- and long-span bridges, implant superstructures

### Technical Data

Color	yellow
Type	4
Density (g/cm <sup>3</sup> )	14.5
Melting range (°C)	1020 – 1100
Casting temperature (°C)	1155 – 1215
CTE 25 – 500 °C	16.1
CTE 20 – 600 °C	16.3
Elongation (%)	6.0
Modulus of elasticity (MPa)	103.000
Oxide firing °C / min. / vacuum	700 / 3 / vacuum
Vickers hardness	220
0.2 % Proof stress (MPa)	480



Clinical case by Dentallabor K. Czirjak GmbH, Germany

# Certificate

## Test material: BioUniversal Alloys

Composition in % weight	Au	Pt	Pd	Ag	Cu	In	Ir	Zn	Other
<b>BioUniversal® PKF</b>	75.0	8.6	–	11.9	–	<1.0	<1.0	2.0	Fe <1.0, Ta <1.0, Rh <1.0
<b>BioUniversal® PdF</b>	71.1	9.2	–	11.7	4.5	1.3	<1.0	1.5	Fe <1.0, Ta <1.0
<b>BioUniversal®</b>	59.4	2.0	9.5	25.5	–	–	–	2.0	Fe <1.0, Re <1.0, Ru <1.0, Sn <1.0
<b>BioUniversal® E</b>	–	–	40.0	52.2	–	1.4	–	<1.0	Sn <5.5, Re <1.0, Ru <1.0

### Manufacturer

Ivoclar Vivadent Inc., 175 Pineview Drive, Amherst, NY 14228, USA

### Corrosion resistance

The test was conducted according to the international regulations of ISO 1562 and ISO 6871–1: static immersion test through analytical determination of the metal ion release after a 7-day immersion.

**Test results:** The metal ion release after 7 days of immersion was not significant.

**Testing facility:** Louisiana State University, Dr. Sakar

### Cytotoxicity

The Agar Diffusion test determines the biological reactivity of cell culture on test material.

**Test results:** The test material is considered non-cytotoxic and meets the requirements of the Agar Diffusion test according to ISO 10993–5.

### Mutagenicity

An Ames assay was conducted to determine any possible cancer potential.

**Test results:** No mutagenicity potential was found to exist in these BioUniversal alloys.

### Kligman Maximization

This test evaluated the allergenic potential and/or sensitizing capacity of these BioUniversal alloys.

**Test results:** Based on the standards set by the study protocol, these alloys exhibited no reaction to the challenge (0 % sensitization).

### Sensitivity of oral mucosa

Test to determine the contact sensitivity of these BioUniversal alloys at the buccal oral mucosa.

**Test results:** No reactions were noted in conjunction with these BioUniversal alloys.

**Testing facility:** Toxikon Corporation, 15 Wiggins Avenue, Bedford, Massachusetts

Amherst, May 2010



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