

Material Data Sheet

for: V-Gnathos® PLUS

This metal-ceramic alloy corresponds to the standards ISO 22674/Type 4 and ISO 9693.

1. Composition

Au + Pt group-metals	97.85%
Au	85.90%
Pt	11.70%
Zn	1.50%
Nb	0.40%
Rh	0.20%
Mn	0.10%
In	0.10%
Ir	0.05%
Fe	0.05%

2. Physical Properties

Melting range	1025-1190°C
Density	18.8 g/cm ³
Young's Modulus	80 GPa
Linear Coeff. of thermal expansion (25-500°C)	14.3 x 10 ⁻⁶ K ⁻¹
Linear Coeff. of thermal expansion (25-600°C)	14.5 x 10 ⁻⁶ K ⁻¹
Colour	yellow

3. Mechanical Properties

	as cast	hardened 450°C/15'/air	after firing ISO 22674 950°C/10' & Geller creation CC
Condition			
Hardness HV5	185	215	215
Tensile strength (Rm)		635 MPa	610 MPa
0.2% Proof stress (Rp 0.2%)		580 MPa	530 MPa
Elongation		6 %.	6 %.
Schwickerath crack initiation test			50 MPa

4. Biological tests

Cytotoxicity test according to ISO 10993-5:

The cytotoxic effect of the alloy was tested with the extract test.
(Project, 100559R, 04.03.2010, BSL Bioservice, DE-82152 Planegg, FRG)

Sensitization test according to ISO 10993-10:

The allergic sensitization of the alloy was tested with the maximization test.
(Project 81E601A, 06.06.1996, BIOMATECH, Rue Pasteur, 38670 CHASSE SUR RHONE, France)

Mutagenicity test (AMES) according to ISO 10993-3:

The mutagenicity was tested with the «Reverse Mutation Assay» using bacteria Salmonella typhimurium.
(Project 101042, 06.04.2010, BSL Bioservice, DE-82152 Planegg, FRG)

Results:

The alloy showed neither a cytotoxic nor a mutagenic potential nor did it cause any allergic sensitization.

5. Certification

This metal-ceramic alloy corresponds to the standards ISO 22674/Type 4 and ISO 9693.

Corrosion testing according to standard ISO 10271 showed that a total of $0.24\mu\text{g}/\text{cm}^2 \times 7\text{d}$ was released (limit: $200\mu\text{g}/\text{cm}^2 \times 7\text{d}$).

Manufacture, packing and delivery are constantly monitored according to the quality management system standards according to ISO 9001 and ISO 13485.

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