

Material Data Sheet

for: Esteticor® Economic

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

1. Composition

Au + Pt group-metals	75.50%
Au	50.00%
Pd	25.00%
Ag	19.00%
In	3.50%
Zn	1.00%
Sn	1.00%
Pt	0.45%
Ir	0.05%

2. Physical Properties

Melting range	1145-1255°C
Density	14.0 g/cm ³
Young's Modulus	120 GPa
Linear Coeff. of thermal expansion (25-500°C)	14.8 x 10 ⁻⁶ K ⁻¹
Linear Coeff. of thermal expansion (25-600°C)	15.1 x 10 ⁻⁶ K ⁻¹
Colour	white

3. Mechanical Properties

	as cast	after firing ISO 950°C
Condition		
Hardness HV5	205	235
Tensile strength (Rm)	715 MPa	750 MPa
0.2% Proof stress (Rp 0.2%)	445 MPa	535 MPa
Elongation	15 %.	15 %.
Schwickerath crack initiation test		57 MPa

4. Biological tests

Cytotoxicity test according to ISO 10993-5:

The cytotoxic effect of the alloy was tested with the extract test.
(Project, 189404, 27.04.1990, CCR, DE-6101 Rossdorf, Germany)

Sensitization test according to ISO 10993-10:

The allergic sensitization of the alloy was tested with the maximization test.
(Project 265511, 28.06.1990, RCC, Itingen/Basel, Switzerland)

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

The mutagenicity was tested with the «Reverse Mutation Assay» using bacteria Salmonella typhimurium.
(Project 100868, 25.03.2010, 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 DIN 13927 showed that a total of $2.4\mu\text{g}/\text{cm}^2 \times 7\text{d}$ 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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