Material Data Sheet
for: Esteticor Implant® 32

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

1. Composition
   Au + Pt group-metals 73.00%
   Pd 40.85%
   Au 32.00%
   Ag 19.00%
   Sn 5.00%
   In 3.00%
   Ru 0.15%

2. Physical Properties
   Melting range 1215-1290°C
   Density 13.1 g/cm³
   Young's Modulus 125 GPa
   Linear Coeff. of thermal expansion (25-500°C) 14.2 x 10⁻⁶ K⁻¹
   Linear Coeff. of thermal expansion (25-600°C) 14.5 x 10⁻⁶ K⁻¹
   Colour white

3. Mechanical Properties
   Condition as cast after firing
   Hardness HV5 225 240
   Tensile strength (Rm) 800 MPa 820 MPa
   0.2% Proof stress (Rp 0.2%) 510 MPa 555 MPa
   Elongation 17 % 17 %
   Schwickerath crack initiation test

4. Biological tests
   Cytotoxicity test according to ISO 10993-5:
   The cytotoxic effect of the alloy was tested with the extract test.
   (Project, 052016B, 03.08.2005, 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 052017B, 06.09.2005, BSL Bioservice, DE-82152 Planegg, FRG)
   Mutagenicity test (AMES) according to ISO 10993-3:
   The mutagenicity was tested with the «Reverse Mutation Assay» using bacteria Salmonella typhimurium.
   (Project 072423, 22.08.2007, 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 0.1 μg/cm²7d was released (limit: 200μg/cm²x7d).
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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