Material Data Sheet for: Esteticor® Plus

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

1. Composition
   Au + Pt group-metals 84.10%
   Au 45.00%
   Pd 38.90%
   In 8.60%
   Ag 5.00%
   Ga 1.40%
   Sn 0.50%
   Cu 0.40%
   Ru 0.20%

2. Physical Properties
   Melting range 1115-1285°C
   Density 13.8 g/cm³
   Young's Modulus 135 GPa
   Linear Coeff. of thermal expansion (25-500°C) 13.9x10⁻⁶ K⁻¹
   Linear Coeff. of thermal expansion (25-600°C) 14.2x10⁻⁶ K⁻¹
   Colour white

3. Mechanical Properties
   Condition as cast after firing
   Hardness HV5 235 260
   Tensile strength (Rm) 865 MPa 865 MPa
   0.2% Proof stress (Rp 0.2%) 550 MPa 580 MPa
   Elongation 18 %. 23 %.
   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, 188706, 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 310746, 19.12.1991, 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 100869, 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 $0.2\mu g/cm^2 \times 7d$ was released (limit: $200\mu g/cm^2 \times 7d$).
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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