Material Data Sheet
for: LW N° 3

This alloy corresponds to the standards ISO 22674/Type 4 and ISO 9693-1. It can be applied as a dental Laser wire corresponding to the standard ISO 28319.

1. Composition
   Au + Pt group-metals 96.90%
   Au 76.80%
   Pd 18.60%
   Sn 2.90%
   Pt 1.35%
   Zn 0.20%
   Ir 0.15%

2. Physical Properties
   Melting range 1165-1290°C
   Density 16.9 g/cm³
   Young's Modulus 115 GPa
   Linear Coeff. of thermal expansion (25-500°C) 13.7 x 10⁻⁶ K⁻¹
   Linear Coeff. of thermal expansion (25-600°C) 13.9 x 10⁻⁶ K⁻¹
   Colour white

3. Mechanical Properties

   Condition as cast after firing
   Hardness HV5 205 235
   Tensile strength (Rm) 670 MPa 785 MPa
   0.2% Proof stress (Rp 0.2%) 455 MPa 630 MPa
   Elongation 13 %. 10 %.
   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, 052016A, 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 050647, 17.05.2005, 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 072425, 01.09.2007, 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 alloy corresponds to the standards ISO 22674/Type 4 and ISO 9693-1. It can be applied as a dental Laser wire corresponding to the standard ISO 28319.

Corrosion testing according to standard ISO 10271 showed that a total of $0.1 \mu g/cm^2 \times 7d$ 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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