Material Data Sheet
for: V-Deltaloy

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

1. Composition
   - Au + Pt group-metals 85.28%
   - Au 54.20%
   - Pd 31.04%
   - In 8.99%
   - Ag 4.83%
   - Ga 0.90%
   - Ru 0.03%
   - Ir 0.01%

2. Physical Properties
   - Melting range: 1115-1295°C
   - Density: 14.7 g/cm³
   - Young's Modulus: 125 GPa
   - Linear Coeff. of thermal expansion (25-500°C): 14.1 x 10⁻⁶ K⁻¹
   - Linear Coeff. of thermal expansion (25-600°C): 14.3 x 10⁻⁶ K⁻¹
   - Colour: white

3. Mechanical Properties
   - Condition: as cast, hardened 600°C/15'/air, after firing ISO 22674: 950°C/10'+ Geller Creation CC
   - Hardness HV5: 250, 280
   - Tensile strength (Rm): 900 MPa, 865 MPa
   - 0.2% Proof stress (Rp 0.2%): 720 MPa, 635 MPa
   - Elongation: 5 %, 9 %, 36.5 MPa

4. Biological Testing
   - Cytotoxicity Test according to ISO 10993-5:
     The cytotoxic effect of the alloy was tested with the Extraction Test.
     (Project, 100559P, 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 Maximation Test.
     (Project 24368, 04.08.2004, 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 101040, 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 22674 showed that a total of 0.77µg/cm²×7d was set free (limit: 200µg/cm²×7d).
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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