

1. Composition

Au + Pt group-metals	94.00%
Au	75.10%
Pd	18.85%
Sn	2.00%
In	2.00%
Ag	1.00%
Zn	0.50%
Cu	0.50%
Ir	0.05%

2. Physical Properties

Melting range	1120-1250°C
Density	16.4 g/cm ³
Young's Modulus	115 GPa
Linear Coeff. of thermal expansion (25-500°C)	14.0 x 10 ⁻⁶ K ⁻¹
Linear Coeff. of thermal expansion (25-600°C)	14.3 x 10 ⁻⁶ K ⁻¹
Colour	pale yellow

3. Mechanical Properties

	as cast	after firing ISO 950°C	soft 900°C/30/H2O	hardened 900°C/30/H2O & 550°C/15/air
Condition				
Hardness HV5	210	230	125	215
Tensile strength (Rm)	615 MPa	680 MPa	455 MPa	670 MPa
0.2% Proof stress (Rp 0.2%)	440 MPa	520 MPa	230 MPa	510 MPa
Elongation	8 %.	12 %.	44 %.	14 %.
Schwickerath crack initiation test		64 MPa		

4. Biological tests

Cytotoxicity test according to ISO 10993-5:

The cytotoxic effect of the alloy was tested with the extract test.
(Project, 221804, 03.06.1991, 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 291745, 24.06.1991, 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 100870, 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.

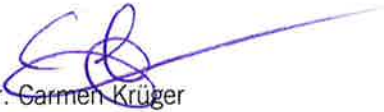
5. Certification

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 $1.2\mu\text{g}/\text{cm}^2 \times 7\text{d}$ 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.

Cendres+Métaux SA



Dr. Carmen Krüger
Head of Materials Development



Dr. Flavio Campana
Head of Material Testing