

d.SIGN[®] 59



Palladium-silver ceramic alloy

Its mechanical and physical properties are coordinated with the d.SIGN fluorapatite-leucite glass-ceramic material.

Pd 59.2	Ag 27.9	Pt < 1.0	In 2.7	Sn 8.2	Zn 1.3	Re < 1.0	Ru < 1.0	Li < 1.0
-------------------	-------------------	--------------------	------------------	------------------	------------------	--------------------	--------------------	--------------------

Advantages

- Excellent high temperature strength
- Economical, low density
- Light oxide
- Easy processing and polishing
- Certified biocompatibility

Indication

Inlays, onlays, $\frac{3}{4}$ crowns, PFM Crowns, crowns, telescopic and conus crowns, implant superstructures, posts, long and short span bridges, partial dentures

Technical data

Color	white
Type	4
Density (g/cm ³)	10,7
Melting range (°C)	1230 – 1310
Casting temperature (°C)	1365 – 1425
Oxide firing °C / minutes / vacuum	1010 / 10 / no vacuum
CTE 25 – 500 °C	14,5
CTE 20 – 600 °C	14,8
Elongation (%)	14,0
Modulus of elasticity (MPa/Nmm ²)	139,000
Vickers hardness	230
Proof stress (0.2 % MPa/Nmm ²)	490



Certificate

Test material: d.SIGN alloys

Composition in % weight	Au	Pt	Pd	Ag	Ga	In	Re	Ru	Sn	Zn	Other
d.SIGN® 98	85.9	12.1	–	–	–	<1.0	–	–	–	1.5	Fe<1.0, Mn<1.0, Ta<1.0 Ir<1.0
d.SIGN® 96	73.8	8.5	5.4	9.0	–	1.9	<1.0	<1.0	–	–	Fe<1.0, Li<1.0, Mn<1.0 Nb<1.0, Ta<1.0
d.SIGN® 91	60.0	–	30.6	–	1.0	8.4	<1.0	<1.0	–	–	–
d.SIGN® 84	9.0	–	75.2	3.0	6.0	6.5	<1.0	<1.0	–	–	Li<1.0
d.SIGN® 67	4.0	–	62.7	20.0	1.7	1.5	<1.0	<1.0	10.0	–	Li<1.0, Ir<1.0
d.SIGN® 59	–	<1.0	59.2	27.9	–	2.7	<1.0	<1.0	8.2	1.3	Li<1.0
d.SIGN® 53	–	<1.0	53.8	34.9	–	1.7	<1.0	<1.0	7.7	1.2	Li<1.0

Composition in % weight	Ni	Co	Cr	Mo	Al	Si	Fe	Ga	Nb	B	Other
d.SIGN® 30	–	60.2	30.1	<1.0	<1.0	<1.0	<1.0	3.9	3.2	<1.0	Li<1.0

Manufacturer

Ivoclar Vivadent Inc., 175 Pineview Drive, Amherst, NY 14228, USA

Corrosion resistance

The test was conducted according to the international regulations of ISO 1562 and ISO 6871–1: static immersion test through analytical determination of the metal ion release after a 7-day immersion.

Test results: The metal ion release after 7 days of immersion was not significant.

Testing facility: Louisiana State University, Dr. Sakar

Cytotoxicity

The Agar Diffusion test determines the biological reactivity of cell culture on test material.

Test results: The test material is considered non-cytotoxic and meets the requirements of the Agar Diffusion test according to ISO 10993–5.

Mutagenicity

An Ames assay was conducted to determine any possible cancer potential.

Test results: No mutagenicity potential was found to exist in these alloys.

Kligman Maximization

This test evaluated the allergenic potential and/or sensitizing capacity of these alloys.

Test results: Based on the standards set by the study protocol, these alloys exhibited no reaction to the challenge (0 % sensitization).

Sensitivity of oral mucosa

Test to determine the contact sensitivity of the alloys at the buccal oral mucosa.

Test results: No reactions were noted in conjunction with these alloys.

Testing facility: Toxikon Corporation, 15 Wiggins Avenue, Bedford, Massachusetts

Amherst, May 2010



Dr. George Tysowsky, D. D. S., M. P. H.
Vice President-Technology

EC Representative
Ivoclar Vivadent AG
Bendererstrasse 2
FL-9494 Schaan
Fürstentum Liechtenstein
Tel. +423 / 235 35 35
Fax +423 / 235 33 60
www.ivoclarvivadent.com

Manufacturer:
Ivoclar Vivadent, Inc.
175 Pineview Drive
USA, Amherst, NY 14228
Tel. (716) 691 0010
Tel.1 800 533 6825
Fax (716) 691 2285

Notified Body:
SGS United Kingdom Limited
Unit 202B
Worle Parkway
Weston Super Mare BS22 6WA
United Kingdom



ivoclar
vivadent
passion vision innovation