

# d.SIGN® 98

Au-based dental metal-ceramic alloy, Type 4



EN Instructions for use  
Au-based dental metal-ceramic alloy, Type 4

DE Gebrauchsinformation  
Au-haltige Dentalkeramik-Legierung, Typ 4

FR Mode d'emploi  
Alliage céramo-métallique dentaire, à base de Au, Type 4

IT Istruzioni d'uso  
Lega dentale per metall-ceramica a base di Au, Tipo 4

ES Instrucciones de uso  
Aluminio dental para metal cerámica basada en Au, Tipo 4

PT Instruções de uso  
Liga dental para metacómerica à base de Au, Tipo 4

SV Bruksanvisning  
Au-basead dental metallerakim legering, Typ 4

DA Brugsanvisning  
Au-baseret dental metal-ceramic legering, Typ 4

FI Käyttöohjeet  
Au-pohjainen metallikeramiikan hammasharjekirja, Typpi 4

NO Bruksanvisning  
Au-holdig dentalkeramik legering, Type 4

NL Gebruiksaanwijzing  
Au-gebaseerde dentale metaalkeramische legering, Type 4

Eesti Õprikirjad  
soovitatavate jaotustega kruusid  
peab jaotatud, tööle.

TR Kullanma Talimatı  
Au esidalı ceramik alaşımı, Tip 4

Russian Инструкция по применению  
Au-содержащий дентальный сплав, тип 4

PL Instrukcja stosowania  
Au-stop nieszlachetny pod porcelanę, Typ 4

**Composition (mass %)**

Au	Pt	Pd	Ag	Cu	Ga	In	Ir	Re	Ru	Sn	Zn	Other
85.9	12.1	-	-	-	<1.0	<1.0	-	-	-	1.5	Ma, Fe	Ta<1.0



see  
Instructions

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vivadent:**  
passion vision innovation

■ **PRODUCT DESCRIPTION**  
Au-baseret dental metal-ceramic alloy, type 4

■ **INDICATIONS\***  
Teleskop Crown, Conus Crowns, Bridges, Wide Bridges, Cast Posts /-Cores, Bars, Attachments, Implant Retained Superstructures, Partial Dentures

■ **WAXING/MODELLATION**  
Design the framework in a reduced anatomical shape taking the planned veneer into consideration. Single crowns require a minimum thickness of 0.3 mm. Abutment crowns require a minimum thickness of 0.5 mm. Ensure the framework design provides adequate support for the veneering material. Avoid sharp angles. Connectors must have the required dimensions to provide resistance to deformation. Create large surface areas for planned soldering, with a gap of 0.05–0.2 mm.

■ **SPRINKLING**  
Provide the modelled single-tooth restoration or bridge framework with sprues of a suitable size. In general the sprue diameter should be approximately 1.5 times the width of the casting. Use the appropriate ceramic specific techniques used. When using the direct or indirect technique be sure that the reservoir is positioned in the heat center. The connector sprues between the reservoir and the casting should be a maximum of 2.5–3.0 mm in length and width. The wax pattern including the sprues must be weighed in grams in order to determine the required amount of alloy. Wax conversion formula: wax weight (gram) x alloy density = grams of alloy required.

■ **MELTING**  
Use high purity-bonded investment material. Follow the manufacturer's instructions.

■ **PREHEATING / BURN-OUT**  
Recommended burn-out temperature: 750–800 °C / 1380–1470 °F

■ **MELTING AND CASTING**  
Torch: Propane 0.35 bar / 15 psi, Oxygen 0.7 bar / 10 psi

Other specific may be required by the type of casting machine. It is recommended to use a separate and clean carbon / ceramic crucible to melt the casting crucible in the burnout furnace. The recommended ratio of investment to new material is 1:1. Do not use flux.

Casting temperature: 1210–1270 °C / 2210–2320 °F

■ **FRAMEWORK FINISHING**  
After bench cooling, carefully clean and clean the casting with aluminum oxide (AlO). Do not use a hammer for finishing. First the casting with carbide burs and/or with ceramic-based grinding instruments. Buff the surface with 50–100 micrometers alumina (AlO) at 4.5 bar / 65 psi pressure subsequently, steam clean or ultrasonic clean in alcohol water or ethanol and dry the framework.

■ **OXIDATION**  
Place the framework on the firing tray providing adequate support. To achieve a uniform result follow the oxidation cycle.

Temperature: 925 °C / 1695 °F, Holding time: 5 min; Vacuum: No

Important: cool down the framework after oxidation. Pickle the framework in sulfuric acid (10%) or similar pickling solutions for 5 min. at 70 °C / 158 °F according to the manufacturer's instructions. Note: Always observe proper safety procedures when handling acid. Before opaque application clean framework carefully with water.

If the oxide layer is stained, grind and blast the surface again. Repeat the oxide firing. Use the appropriate ceramic veneering material, following the manufacturer's instructions.

Hight temperature for oxide firing: 760 °C / 1795 °F

■ **HEAT TREATMENT**  
Hardening: 480 °C / 895 °F for 15 min.; bench cool

■ **SOLDERING AND LASER WELDING**  
The soldering gap should not be wider than the thickness of the soldering material. Allow the soldered casting to cool slowly. Use flux sparingly.

Pre Solder: HGPKF 1015Y Flux: High Fusing Bondal Flux

Post Solder: .650, .615, .585 Fine Gold Solder Flux: Bondal Flux

Laser Welding Wire: Laser Ceramic Yellow Pdf

■ **POLISHING**  
Carefully remove any oxide and flux residue. Smooth the metal surfaces with rubber polishes. Polish to a high gloss finish using polished pastes. Subsequently, clean using ultrasonic cleaning equipment or careful steam cleaning.

■ **ADDITIONAL SAFETY CONCERN AND INSTRUCTIONS**

■ **CONTRAINDICATIONS**  
For patients with known allergy/sensitivity to any major or minor elements of this alloy, consultation with a physician is recommended. Alloy is not to be used for any application not included within the indications.

■ **SIDE EFFECTS**  
In individual cases sensitivity or allergies to elements of this alloy may occur. Ivoclar Vivadent makes no claims regarding the MRI-compatibility of its dental alloys. It is recommended that the patient be made aware of the possibility for dental alloys to affect MRI results and to disclose the presence of dental alloys to the MRI technician prior to undergoing a test.

■ **INTERACTIONS**  
Galvanic effects may occur between different or dissimilar alloys in the same oral environment.

■ **CAUTION**  
Metal vapors and metal dust are harmful if inhaled. Therefore, the use of extraction equipment and/or suitable protective masks is advised!

■ **STORAGE CONDITION**  
Store in a dry environment at room temperature.

■ **DISCLAIMER**  
This material is pre-erupted and should not be used in dentistry. Processing should be carried out strictly according to the instructions for use. Liability cannot be accepted from damage resulting from failure to observe the indications or the stated area of application. The user is responsible for testing the products for their suitability and use for any purpose not explicitly stated in the Instructions. These regulations also apply if the materials are used in conjunction with products of other manufacturers.

■ **PROCESSING DATA**

Investment Material: Phosphate-bonded

Preheating/Burn-out Temperature: 750–800 °C / 1380–1470 °F

Crucible: Ceramic/Grafite/Ceramic Crucible

Casting Temperature: 1210–1270 °C / 2210–2320 °F

Oxidation: Temperature: 925 °C / 1695 °F, Holding time: 5 min; Vacuum: No

CTE: (25–500 °C): 14.3 x 10<sup>-6</sup> K<sup>-1</sup>, (20–600 °C): 14.5 x 10<sup>-6</sup> K<sup>-1</sup>

Recommended Ceramic Material: IPS Style®, IPS InLine®, One, IPS InLine®, IPS InLine® PoM, IPS Classic®, IPS D.Sign®

Hardening: 480 °C / 895 °F for 15 min.; bench cool

■ **TECHNICAL DATA (ISO 22674-2016 & ISO 9693-1:2012)**

Type/Color: 4 Rich Yellow

Density (g/cm³): 18.9

Melting Range (Solidus/Liquidus): 1055–1150 °C / 1930–2100 °F

Elastic Modulus (GPa): 110

Procelain Fired

Pre Solder / Flux: HGPKF 1015Y High Fusing Bondal Flux

Post Solder / Flux: .650, .615, .585 Bondal Flux

Laser Welding Wire: Laser Ceramic Yellow Pdf

\*See TYPE CLASSIFICATION DUE TO PHYSICAL PROPERTIES

■ **REVESTING**  
Use an material of revestimento aglutinado con fosfato. Siga el manual del fabricante.

■ **PRECALIENTAMIENTO / QUÉMA**  
Temperatura de calentamiento recomendada: 750–800 °C

■ **DERRETIDO Y COLOTA**  
Líquido: Propane 0.35 bar, Oxigeno 0.7 bar

Dependiendo del tipo de máquina de colado, otras especificaciones podrán ser necesarias. Es necesario usar un crisol o de forma similar de acuerdo a cada aplicación. Precalentar el crisol en el horno de precalentamiento. Usar el crisol para la cocción y el crisol para la cocción.

■ **COLOCACIÓN DE LOS BEBEDEROS**  
Proporcionar unos bebederos de un tamaño adecuado para la pieza modelada. Los reservorios, los bebederos y los conectores, ya sean de forma de pera o de forma de paralelo, deben adecuarse al tamaño a la técnica utilizada. Asegúrese de que el espacio entre el crisol y el resto de la estructura sea lo suficiente para evitar interferencias. Los conectores entre el crisol y el resto de la estructura deben tener las dimensiones necesarias para fornecer resistencia a deformación. Projetar grandes áreas de superficie para una soldadura planificada, con un espacio de 0.05–0.2 mm.

■ **COLOCACIÓN DOS SPRUE**  
Preparar el sistema de resturación de corosas unitarias o infraestructuras de postes con sprues de tamaño adecuado. En general, a través de compensación, sprues aserradas y sprues de conexión, se forman de forma de pera o de forma de paralelo, dependiendo de la técnica utilizada. Asegúrese de que el espacio entre el crisol y el resto de la estructura sea lo suficiente para evitar interferencias. Los conectores entre el crisol y el resto de la estructura deben tener las dimensiones necesarias para fornecer resistencia a deformación. Crear grandes superficies para la soldadura planificada, con un espacio de 0.05–0.2 mm.

■ **REVESTIR**  
Usar un material de revestimiento aglutinado con fosfato. Siga las instrucciones del fabricante.

■ **PRECALENTAMIENTO / QUÉMA**  
Temperatura de quemado recomendada: 750–800 °C

■ **DERRETIDO Y COLOTA**  
Líquido: Propane 0.35 bar, Oxigeno 0.7 bar

Dependiendo del tipo de máquina de colado, otras especificaciones podrán ser necesarias. Es necesario usar un crisol o de forma similar de acuerdo a cada aplicación. Precalentar el crisol en el horno de precalentamiento. Usar el crisol para la cocción y el crisol para la cocción.

■ **ACABADO DE LA ESTRUCTURA**  
Tornar el ensamblaje y limpiar con cuidado el revestimiento con óxido de aluminio (AlO). No usar martillo para retirar el revestimiento. Usar fresas de carburo de silicio y/o instrumentos cerámicos de degradado para reparar el crisol. Usar el martillo para retirar el revestimiento. Usar fresas de carburo de silicio y/o instrumentos cerámicos de degradado para reparar el crisol.

■ **ACABADO DE LA ESTRUCTURA**  
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■ **OXIDACION**  
Após resfriar completamente, remover o revestimento e aquecer de novo. Realizar a depuração da superfície com óxido de alumínio (AlO). Não usar martelo para retirar o revestimento. Usar fresas de carburo de silício e/ou instrumentos cerâmicos de degradação para reparar o crisol. Usar o martelo para retirar o revestimento. Usar fresas de carburo de silício e/ou instrumentos cerâmicos de degradação para reparar o crisol.

■ **INCLUSO**  
Usar um material de revestimento aglutinado com fosfato. Seguir as instruções do fabricante.

■ **ELIMINACION DA CERA / EXPANSÃO DO REVESTIMENTO**  
Temperatura de aquecimento sugerida: 750–800 °C

■ **FUNDICAO**  
Chama: Propane 0.35 bar; Oxigeno 0.7 bar

Outras especificações podem ser exigidas pelo tipo de máquina de fundição. É recomendado usar a câmara de compreensão e a porta de cerâmica para obter resultados mais bons.

■ **TEMPERATURA DO REVESTIMENTO**  
Temperatura de fundição: 760 °C / 1795 °F

■ **REFORÇAMENTO**  
Uso de cerâmica de alta resistência.

■ **REFRIGERAÇÃO**  
Uso de refrigeração.

