



Heimerle + Meule Group



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Device Name: MATTICRAFT K

Device Type: Palladium-Silver-Gold Bonding Alloy

Indications: TYPE 4: For appliances with thin sections that are subject to very high forces, e.g. removable partial dentures, clasps, thin veneered single crowns, full arch fixed dental prostheses or those with small cross-sections, bars, attachments, implant retained superstructures.

Free from Be, Cd, Ni, and C.

Intended Use: Fabrication of custom-made dental restorations

Intended Patients: Any (no restriction on patient characteristics)

Intended Users: Dental laboratory technicians.

There are no specific contraindications, warnings, or precautions for patients, though see composition if patient allergies are known or suspected.

There are no special storage requirements for this material.



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LOT

REF

ZCK 000

Technical Data

Density	12.3 g/cm ³	
Composition	Au 15.0% Pd 51.0% Ag 22.9% Sn 7.0% Zn 1.5% In 1.8% Pt 0.5% Others <1.0% Ru	
Melting Range	1200 - 1285°C	
Elongation	15%	After simulated porcelain firing
0.2% Proof Stress	520MPa	
Coefficient of Thermal Expansion	14.2 x 10 ⁻⁶ K ⁻¹ (25 - 500°C) 14.4 x 10 ⁻⁶ K ⁻¹ (25 - 600°C)	
Casting Temperature	1415°C	
Casting Ring Pre-Heat	900°C for 40 minutes.	
Solders: Pre-Bonding	Mattiflo 1110W	
Flux: Post-Bonding	Mattiflo 715Y	
Typical Applications	Single units, Multiple units, Long spans	
Typical Porcelains	Duceram, Doric Universal	

Additional Information

Disposal / Re-Use Considerations: Clean scrap can be reused to make further restorations, however alloys that have been used on patients should not be reused to minimize contamination risk. Once appropriately cleaned, precious metal alloys may be sent for recycling.

In the event of a defective device Contact Cooksongold on +441212338170. If the defect has only become apparent after the alloy has been used on a patient, then also contact the competent authority of the Member State in which the patient is established (refer to https://ec.europa.eu/health/md_sector/contact_en)

Summary of Safety and Clinical Performance (SSCP) The Summary of Safety and Clinical Performance (SSCP) is available on request and can also be found at <https://ec.europa.eu/tools/eudamed> by searching for the Basic UDI-DI 5057531 ALLOYTL (when the website is operational).

DIRECTIONS FOR USE

WAXING

A minimum wax thickness of 0.3 mm for single crowns and 0.5 mm for multiple units is recommended. The connection area of abutments must be greater than 3 mm x 3 mm. Sprue each unit individually with 3 mm wax rods. Reservoir bars should be a minimum of 4 mm in diameter and vent rods 1 mm if used. Avoid sharp joints and ensure all shoulders and edges are well rounded. Stress relieve the wax pattern by immersing it in water at 32 °C for 5 - 10 minutes.

INVESTMENT

Only use suitable high temperature investment powders that are described as graphite or carbon free. Invest the wax pattern according to the manufacturer's instructions.

BURN OUT AND PRE - HEAT

Follow normal procedures for wax burn out and then heat the investment according to the manufacturer's instructions. Heat soak the casting ring for a minimum of 40 minutes at 900°C. Time necessary to successfully heat soak the casting ring increases with size.

CASTING

Always melt **MATTICRAFT K** in ceramic crucibles.
Clean scrap may be reused provided a minimum of 50% new metal is in the charge. NEVER reuse metal if contamination with carbon or other alloys is suspected. A little Tenacity 125 flux added to the melt immediately before casting will improve overall cleanliness. Ensure the alloy is fully liquid and spinning before casting. The time taken to reach both melting and casting temperature must be kept to a minimum and the alloy cast promptly. Over heating the metal results in miscasts and porosity. If using an oxy-propane torch to melt the metal, the flame must be correctly adjusted to avoid contamination by carbon.

Allow the castings to bench cool. **DO NOT** quench the metal as this may cause fitting problems later on.

CLEANING

Break out the metal and clean by brushing or by sand blasting with non-recycling aluminium oxide. Prepare the surface of the metal with pink or brown stones kept solely for use on **MATTICRAFT K** Use of worn diamond stones or those used for other alloys causes bonding problems due to contamination.
Finally clean the castings in steam, acetone or by ultrasonic cleaner.
The use of strong acids such as HF is not advised.

DEGASSING AND OXIDATION

These two procedures can be combined by heating at 960°C for three minutes in vacuum followed by further heating at 960°C for three minutes in air. Correctly oxidised, **MATTICRAFT K** should have a uniform light grey colour. If patchy, strip the metal and re-oxidise.

Lighter porcelain shades can be achieved whilst retaining bonding strength by degassing the metal, oxidising, stripping away the oxide layer by sand blasting with 125µm aluminium oxide, and applying a pre-opaque wash to the clean metal surface. Following one of the above methods the castings should be cleaned in hot water or by ultrasonic cleaner prior to the porcelain being applied.

NOTE With large bridges, it is recommended that temperatures are raised slowly to avoid structural distortion.

PORCELAIN APPLICATION

Porcelain bonding will benefit from the application of a pre-opaque wash. Both this and Porcelain application should be carried out as specified by the supplier and with consideration to the furnace used. **NOTE** This alloy contains a high level of silver and care should be taken to avoid porcelain greening or furnace contamination. We recommend that furnaces used to fire this alloy should be purged weekly.

MATTICRAFT K requires a short cooling cycle after porcelain firing.

SOLDERING

Use Mattiflo 1110W for soldering before porcelain firing.
Post-porcelain soldering is carried out using Mattiflo 715W.

Caution: *Suitable protective clothing and the wearing of safety glasses is recommended when melting this product.*