



Heimerle + Meule Group



Cookson Precious Metals Ltd,
59-83 Vittoria Street, Birmingham, B1 3NZ, UK



Cookson Drijthout BV
Keienbergweg 12 1101 GB Amsterdam

Device Name: EC 500

Device Type: White 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.

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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ZEE A500

Technical Data

Density	11.9 g/cm ³	
Composition	Pd 51.9% Ag 21.0% Au 15.0% In 5.5% Sn 5.1% Ga 1.5%	
Melting Range	1150 - 1250°C	
Elongation	16%	After firing
0.2% Proof Stress	630MPa	
Coefficient of expansion:	13.9 @ 25-600°C	
Casting Temperature	1400°C	
Casting Ring Pre-Heat	850°C for 30-60 mins, depending on no. of rings	
Solders: Pre-Bonding	Mattiflo 1110W	
Flux: Post-Bonding	Mattiflo 830Y	
Typical Applications	Long Span Ceramic Bonded Bridges & Crowns	

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

EC 500 is suitable for casting in thin section.

If waxing by hand, a thickness of 0.2 mm for single crowns and 0.4 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 2.5 mm wax rods. If using reservoir bars, sprue diameter can be reduced to 1.5 mm. Vent rods should be 1 mm if used. Avoid sharp joints and ensure all shoulders and edges are well rounded. Stress relieve the wax pattern in water at 32 °C for 5 - 10 minutes.

INVESTMENT

Graphite free investment is recommended and will produce the best results. Pouring the investment under vacuum and using a debubbleiser will assist in producing a smooth surface finish.

BURN OUT AND PRE - HEAT

Follow normal procedures for wax burn out and heat the investment according to the manufacturer's instructions. Heat soak the casting ring for a minimum of 30-60 minutes at 850°C. Time necessary to successfully heat soak the casting ring increases with size.

CASTING

Due to the low melting point of **EC 500**, care should be taken to avoid over heating the alloy as this is a potential cause of casting porosity and may result in crowns becoming tarnished once fitted.

All surplus / scrap metal can be successfully re melted providing a minimum of 50% new metal is in the melt. A little Mattiflux D added to the melt immediately before casting will improve overall cleanliness and will help to prevent oxidation. 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 if over heating is to be prevented.

To avoid over heating, we recommend that all oxy - propane torches should be correctly adjusted and Induction furnaces calibrated.

CLEANING

Break out the metal and clean by brushing or by sand blasting with non-recycling aluminium oxide after which an acid pickle will ensure total cleanliness of the casting. Finally prepare the surface of the metal with a proprietary stone kept solely for use on **EC 500** and polish to a high lustre using brushes and rouge.

SURFACE PREPARATION

De-vesting at ambient Temp: Blast with 125 to 250 μ m Al₂O₃.

Grinding and Polishing: Recommended silica free stones for bonding alloys or tungsten carbide burrs.

Oxidation: Ceramic bonding can be directly obtained by firing the opaque onto a ground or sandblasted metal surface. However, an oxidation process can be performed by raising the temp from 550-980°C in air with no hold time at final temp. A uniform grey oxide will form, which is eliminated by blasting prior to porcelain application.

SOLDERING

Good results can be achieved by using Mattiflo 1110W pre-bonding and 830Y post-bonding and a freshly prepared paste of Mattiflux D.

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

No special storage requirements