

Instructions for use

## High Gold Metal Alloys for the Ceramic-fused-to-metal Technique

Mixing of different alloys or alloys of similar types is not allowed!  
Wear darkened eye protection and protective gloves when melting.

Protect eyes, hands and breathing when pickling.

Protect eyes and breathing during processing with rotating instruments with an aspirator device.

With the publication of these instructions for use all previous editions are no longer valid.

*The manufacturer refuses any liability for damages due to disregard of the instructions for use below.*

### Directions for High Gold Metal Alloys for the Ceramic-fused-to-metal Technique

These alloys have been proven for years and are distinguished by their fine-grained cast structure, their excellent corrosion resistance, their biocompatibility and their ease of processing. The high Au and Pt-group metal contents of the alloys in this group allow problem-free soldering; they are also well suited for the casting-on technique incorporating prefabricated attachments for combined work.

### General instructions for use

#### Modelling

Usual modelling technique for ceramic-fused-to-metal works. Minimal wall thickness 0.4 mm. With bridgework the connections must have a minimum section of 6–9 mm<sup>2</sup>. Modelling of garlands or inlay shaped reinforcements in the palatal region will give added stability. The application of air and cooling vents improves casting results.

#### Investing

The following investments are recommended for this type of alloys: Cendres+Métaux-Ceramicor® (phosphate-based, containing graphite)

CM-20 (based on quartz and cristobalite without graphite for the rapid preheating technique).

Plaster-based investments must not be used for these types of alloys!

#### Re-use of alloy

Only use perfectly cleaned (by sand-blasting with aluminium oxide) buttons and sprues and add **at least 1/3 of new alloy**.

#### Traceability of lot numbers

If different lots of an alloy are being used for the realisation of a restoration, all lot numbers concerned must be noted in order to assure traceability.

### Surface quality of cast objects

In order to prevent corrosion the cast object must have a surface free of shrink holes and porosities after trimming and polishing.

### Cooling of castings

Do not quench the casting cylinder after casting, but bench cool to room temperature.

### Pickling

After firing or soldering pickle in a warm, freshly prepared (clean) solution of 10 vol. % sulphuric acid (H<sub>2</sub>SO<sub>4</sub>)

**Note:** When using other pickling agents follow the instructions for use of the respective manufacturer.

### Thermal treatments (not compulsory)

After casting, some of the high gold metal alloys have not yet obtained their maximal mechanical properties. For long-span bridgework and for works with attachments in combustible plastic or ceramic spacer technique which will not be veneered with ceramic, a simulation firing of the work in the as cast condition (cleaned frameworks, sprues not yet removed) in the ceramic furnace can be done.

This procedure has the following advantages: The hardness increase allows easier and faster trimming of the frameworks. Grinding overlaps are prevented. Possible tensions due to the casting process are reduced. (Firing data see table overleaf).

Rx only

The products carry the CE sign.  
See packaging for details.

## **Gilding of frameworks**

Gilding is carried out at the user's own risk.

## **Polishing**

After the last firing free metal surfaces must be polished to a high shine in order to completely remove the oxide layer.

## **Disinfection**

Each prosthetic restoration must be cleaned and disinfected before try-in or definite insertion in the mouth of the patient.

## **Further information**

On processing precious metal alloys, soldering and casting-on are included in the Dental documentation of Cendres+Métaux.







## **Allergies**

With patients having an existing allergy to one or several elements contained in any one alloy, this particular alloy must not be used. With patients suspected of having an allergy to one or several elements contained in any one alloy, this alloy can only be used after preliminary allergological testing and proof of a non-existing allergy.

**Physical and mechanical properties**

Alloys	Indications						Colour	Composition in weight %														Solder ① Before firing	Solders ① After firing	
	a	b	c	d	e	f		Au- + Pt- Met.	Au	Pt	Pd	Ag	Cu	Sn	Zn	In	Ga	Ir	Rh	Re	Fe			Ta
Estetitor Helvetica®	✓	✓	✓	✓	✓		Yellow	97.87	86.70	10.75		0.03		0.10	1.50	0.20		0.02	0.40			0.30	S.G 1030	S.G 810/S.G 750
Estetitor Ideal H®	✓	✓	✓	✓	✓		Yellow	97.00	85.50	9.90	1.50	0.40	0.80		0.50	1.10		0.10			0.20		S.G 1030	S.G 810/S.G 750
Estetitor® Cosmor H	✓	✓	✓	✓	✓		Pale yellow	96.50	78.50	10.0	7.80					3.50		0.20					S.G 1080	S.G 810/S.G 750
Estetitor® Special	✓	✓	✓	✓	✓		Pale yellow	96.10	77.30	9.80	8.90	1.20	0.30	0.50		1.50		0.10		0.20	0.20		S.G 1080	S.G 810/S.G 750
Estetitor® Prestige	✓	✓	✓	✓	✓		Pale yellow	94.00	75.10		18.85	1.00	0.50	2.00	0.50	2.00		0.05					S.G 1080	S.G 810/S.G 750

ISO 22674 / ISO 9693

Indications		Inlays, onlays		Single crowns		Short-span bridgework		Long-span bridgework		Milled work		Clasps, lingual bars, palatal plates
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① The use of solders not mentioned in the table is subject to the user's risk. In case of uncertainties, consult the instructions of the manufacturer involved.

Alloys	Density g/cm³	Melting range °C	Casting temp. °C	Crucible	Hardness				Young's Modulus GPa*	0.2 % proof stress, Rp 0.2 %				Elongation A5				Linear coefficient of thermal expansion CTE	
					as cast HV5*	annealed HV5*	after firing HV5*	hardened HV5*		as cast MPa*	annealed MPa*	after firing MPa*	hardened MPa*	as cast %*	annealed %*	after firing %*	hardened %*	(25–500°C) 10 <sup>-6</sup> K <sup>-1</sup>	(25–600°C) 10 <sup>-6</sup> K <sup>-1</sup>
Estetitor Helvetica®	18.9	1030–1150	1250–1300	① ② ③	190	95	220	220	90	435	180	525	525	6	30	7	6	14.5	14.8
Estetitor Ideal H®	18.8	1045–1170	1270–1320	① ② ③	160	105	195	210	95	375	170	500	530	15	31	12	10	14.5	14.7
Estetitor® Cosmor H	18.2	1120–1280	1380–1420	① ② ③	195	115	215	240	105	475	200	565	610	10	29	13	6	13.8	14.0
Estetitor® Special	18.0	1160–1275	1410–1440	① ② ③	185	110	200	215	105	455	185	490	495	8	23	8	6	13.7	13.9
Estetitor® Prestige	16.3	1120–1250	1390–1420	② ③	210	125	230	215	115	505	230	550	510	8	45	11	14	14.0	14.3

① Graphite crucible ② Universal ceramic crucible ③ Vitrified carbon crucible

\* The values indicated result from measurements obtained under exactly defined conditions. Individual deviations of ± 10 % are possible and to be considered as normal.

**Particular instructions for use**

Alloys	Preheating temperature	Recommended casting systems (not compulsory)					Thermal treatment of the framework before surface treatment (not compulsory)	Annealing	Hardening	Trimming of the framework surface with ceramically bonded grinding stones
		Propane-oxygen flame	Vacuum-pressure casting with electric resistance furnace	Centrifugal casting with electric resistance furnace	High frequency induction in atmosphere	High frequency induction in protective gas atmosphere				
Esteticor Helvetica®	850 °C	✓	✓	✓	✓	✓	900 °C / 15 min / air	900 °C / 15 min / air	450 °C / 15 min / air**	✓
Esteticor Ideal H®	800 °C	✓	✓	✓	✓	✓	950 °C / 10 min / air	900 °C / 15 min / H <sub>2</sub> O	550 °C / 15 min / air**	✓
Esteticor® Cosmor H	850 °C	✓			✓	✓	950 °C / 10 min / air	900 °C / 15 min / H <sub>2</sub> O	550 °C / 15 min / air**	✓
Esteticor® Special	850 °C	✓			✓	✓	950 °C / 10 min / air	900 °C / 15 min / H <sub>2</sub> O	600 °C / 15 min / air**	✓
Esteticor® Prestige	850 °C	✓			✓	✓	950 °C / 10 min / air	900 °C / 15 min / H <sub>2</sub> O	550 °C / 15 min / air**	✓

\*\* Annealing before hardening

Alloys	Sandblasting with non-recycled aluminium oxide (Al <sub>2</sub> O <sub>3</sub> ) 50µm	Cleaning with steam jet		Oxide firing with vacuum		Pickling after oxide firing in a warm and clean solution of 10 vol. % sulphuric acid (H <sub>2</sub> SO <sub>4</sub> )	Sandblasting after oxide firing with non recycled aluminium oxide (Al <sub>2</sub> O <sub>3</sub> ) 50µm
				with vacuum	without vacuum		
Esteticor Helvetica®	✓		✓	900 °C / 10 min		✓	
Esteticor Ideal H®	✓		✓	960 °C / 5 min		✓	
Esteticor® Cosmor H	✓		✓		960 °C / 5 min		
Esteticor® Special	✓		✓		960 °C / 5 min		
Esteticor® Prestige	✓		✓		960 °C / 5 min		✓

Alloys	Special indications for veneering with ceramic compounds				Heating rate max.	Tested compatible ceramic compound	Other ceramic compounds
	Slow cooling	Normal cooling	Rapid cooling				
Esteticor Helvetica®	✓				60 °C / min	VITA VMK 95	The alloys are compatible with the usual high fusing ceramic compounds. In case of doubt, consult the instructions of the ceramic manufacturer concerned.
Esteticor Ideal H®	✓				60 °C / min	VITA VMK 95	
Esteticor® Cosmor H		✓				VITA VMK 95	
Esteticor® Special		✓	✓			VITA VMK 95	
Esteticor® Prestige		✓				VITA VMK 95	