

Instructions for use

## Precious Metal Alloys for Inlays, Crown and Bridgework

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With the publication of these instructions for use all previous editions are no longer valid.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 Precious Metal alloys for Inlays, Crown and Bridgework

Due to the lower gold and platinum metal content and the low density these alloys are lower priced than the high gold metal alloys. When processed according to instructions these alloys have a fine-grained structure, good corrosion resistance and are biocompatible. The alloys can be soldered without problems and can be used for the casting on technique. The group contains alloys with high and extra high strength. Therefore an alloy can be chosen, which, according to its mechanical and physical properties, is best suited for the work to be executed. Most alloys of this group are selfhardening, if they are benchcooled to room temperature in the cylinder or soldering block.

### 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:  
**CM-10** (plaster based)  
**CM-20** (based on quartz and cristobalite without graphite for the rapid preheating technique)

#### 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 casting 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.

### Polishing

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 and in the website [www.cmsa.ch/dental](http://www.cmsa.ch/dental).

### 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.

Rx only

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

## Physical and mechanical properties

Alloys	Indications						Colour	Composition in weight %												First solder ①	Second solder ①			
	a	b	c	d	e	f		Au- + Pt-Met.	Au	Pt	Pd	Ag	Cu	Sn	Zn	In	Ga	Ir	Ru			Re	Fe	Ta
Modulor® 3	✓	✓	✓	✓	✓	✓	Yellow	68.00	65.00	0.45	2.50	17.80	13.00		1.20			0.05					S.G 810	S.G 750
Dentalor® 60	✓	✓	✓	✓	✓	✓	Yellow	63.50	60.00	0.45	3.00	22.50	12.50		1.50			0.05					S.G 810	S.G 750
Medior® 3	✓	✓	✓	✓	✓	✓	Pale yellow	61.00	55.00		5.95	26.00	10.90		2.10			0.05					S.G 810	S.G 750



ISO 22674 / ISO 9693

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		
					as cast HV5 *	annealed HV5 ② *	hardened HV5 ③ *		as cast MPa*	annealed MPa*	hardened MPa*	as cast %*	annealed %*	hardened %*
Modulor® 3	14.4	870–900	1000–1050	① ② ③	255	150	255 ◐	100	695	350	690 ◐	9	43	13 ◐
Dentalor® 60	14.0	850–900	1000–1050	① ② ③	260	160	265 ◐	90	770	360	730 ◐	10	46	9 ◐
Medior® 3	13.6	875–920	1020–1070	① ② ③	295	170	280 ◐	105	865	435	815 ◐	4	35	5 ◐

\* 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)					② Annealing	③ Hardening in the ceramic furnace	Sandblasting with glass beads 50µm
		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			
Modulor® 3	650°C	✓	✓	✓			700°C / 10 min / H <sub>2</sub> O	400°C / 15 min / air	✓
Dentalor® 60	650°C	✓	✓	✓			700°C / 10 min / H <sub>2</sub> O	400°C / 15 min / air	✓
Medior® 3	650°C	✓	✓	✓			700°C / 10 min / H <sub>2</sub> O	400°C / 15 min / air	✓

Indications  a Inlays, onlays  b Single crowns  c Short-span bridgework  d Long-span bridgework  e Milled work  f Clasps, lingual bars, palatal plates

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.

① Graphite crucible ② Universal ceramic crucible ③ Vitrified carbon crucible

◐ 100% selfhardening after cooling in the cylinder or soldering block, otherwise particular instructions for use ② and ③