







Instructions for use

## Medium-Gold dental casting Alloy, extra hard, yellow, type 4

### Indication

Conventional crowns and bridges, C&B technique, inlays, milling work, cast partial denture-frames.

- |  |  |
|--|--|
| a  Inlays, onlays, crowns <sup>3</sup> / <sub>4</sub> | d  Long-span bridge-work                |
| b  Single crowns                                      | e  Milled work                          |
| c  Short-span bridgework                              | f  Clasps, lingual bars, palatal plates |

### Physical properties

Composition in weight %

Au + Pt group metals	61.50
Au	56.00
Pt	0.40
Pd	5.00
Ir	0.10
Ag	25.00
Cu	11.80
Zn	1.70
Density g/cm <sup>3</sup>	13.7
Melting range °C	870–935
Young's Modulus GPa *	110

### Mechanical properties

	1	2	3
Hardness HV5 *	175	295	260
0.2 % Proof stress, Rp 0.2 % MPa *	350	885	600
Elongation A5 % *	30	5	10

### State

1	soft
2	as cast
3	hardened

### Solders

#### Melting range

S.G 810	750–810 °C
S.G 750	695–750 °C

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

### Preventive measure (contraindication) and important notes

These instructions for use must be precisely followed. It has been suggested in specialized literature that some of its components can, in extremely rare cases, have allergy effects. The choice of the material is the decision of the practitioner based on his knowledge of the sensitivity of the patient.

### Corrosion resistance and biocompatibility

Solaro® 3 has been submitted to the following tests:

**Corrosion resistance** according to ISO 22674

**Cytotoxicity** test according to ISO 10993-5

**Sensitization** test according to ISO 10993-10

**Mutagenicity** test (AMES) according to 10993-3

The alloy is considered to be highly corrosion resistant and showed neither a cytotoxic nor a mutagenic potential nor did it cause any allergic sensitization.

Launch year 1974

Solaro® 3 corresponds to the standards EN ISO 22674.

Solaro® 3 has been manufactured according to the quality standards ISO 9001 / ISO 13485.

Rx only

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

## Waxing up

The ultimate thickness of the cast metal coping should not be less than **0.3 mm**.

Therefore: Consideration must be given to this fact at the wax-up stage, long span frameworks require structural reinforcement to ensure stability and anticipated solder joints should be of adequate surface area to provide sufficient stability to the frame.

## Spruing

Wax sprues of no less than **Ø 3.5 mm** are required. Direct (**Ø 3.5 mm**) and cross bar (**Ø 5 mm**) spruing produce excellent results. Feeder sprues to heavy pontics should be of at least **Ø 4 mm**. Air vents (**Ø 1 mm**) may be used to advantage. Wax patterns should be set outside the thermal centre, i.e. near the casting ring wall and about **5 mm** from the end. For individual copings and small bridges (up to three units), use of the circular sprue provides ideal positioning of the wax patterns and ensure controlled solidification of the frameworks.

## Investing

When using steel casting rings always use refractory liner in order to allow free expansion of the investment. All regular or phosphate-bonded (e.g. **Univest®Plus** or **Univest®Rapid**) investments for precious metal alloys may be used. Follow the procedures recommended by the manufacturer.

## Preheating

Observe manufacturer's recommendations with regard to setting times, temperature levels etc. On reaching the end temperature a soaking period of **20 to 45 min.** is advisable depending on the size of the cylinder.

Preheating temperature: 630°C–680°C

## Crucibles

Glaze the crucible before first use with a recommended flux (e.g. Borax/Boric acid). The following crucibles can be used:

Graphite crucible:	Casting temperature	1085°C
Ceramic crucible:	Casting temperature	1135°C
Vitreous carbon crucible:	Casting temperature	1115°C

## Re-melting

When melting down thoroughly cleaned casting buttons, add at least **½ of new alloy**. The used copings have to be clean, free of investment and flux residue.

## Melting

It is important, when using a torch for melting (for inst. **Meteor type «O»**) that the recommended propane (approx. **0.5 bar** or **7.25 psi**) / oxygen (approx. **1.0 bar** or **14.5 psi**) mixture and pressure is observed. Before melting add a pinch of flux to the alloy. Once the alloy has completely melted, continue heating for a further approx. **5 sec.** before releasing the casting machine arm. When melting by resistance heating, the power must be maintained for an additional **20–40 sec.** before casting. Always ensure that both furnace and crucible have reached this temperature before adding the alloy.

Flux: Borax

## Cooling

Bench cool the casting ring.

## Devesting/Cleaning

Clean by blasting with glass beads or pure aluminium oxide ( $Al_2O_3$ ) particle size (**50µm** to **125µm**) at **1.5 to 2.0 bar** (**21.7 to 29 psi**) pressure.

## Pickling

Following casting or soldering, the frame at room temperature may be pickled in hot **Desoxid** for at least **2 min.** – Desoxid I (75%).

## Finishing

Use abrasive grinding points of your choice.

## Preparation for resin bonding

Blast with aluminium oxid ( $Al_2O_3$ ), particles size approx. **110µm** and steam clean. Follow manufacturers recommendations when bonding resin veneers.

## Soldering/Laser

We recommend using a propane/oxygen torch (**Meteor Type «L»**) for soldering and a flux like **Fluxor**. During soldering wear dark goggles for protection. The design of the soldering block is a compromise between minimising its thermal mass whilst retaining sufficient strength to avoid its fracturing during soldering. Leave a parallel gap of **0.1–0.2 mm** between surfaces to be soldered and sufficient area to ensure adequate strength of the joint. Laser welding wire: LW No. 6

## Heat treatments

Annealed 700°C/10 min. – quench in water

Self-hardened by slow (bench-) cooling of the casting ring

Hardened (only after annealing) 400°C/15 min. – let bench-cool

## Polishing

Thorough rubberwheeling ensures easy prepolishing. For best polishing results, soft brushes, felts and cotton wheels are employed using **Legabril Diamond** diamond-paste. «Whiting chalk» (chalk-powder) mixed with water on soft brushes or cotton wheels may be used for final high polish.