

POLYconcept

pmmacam

USER MANUAL









REV. 15/05/2017

CE 0476

REG. SAN. N. 64314

CO.N.CE.P.T. SRL Via Musini 6, 43011 Busseto (PR) ITALY
Via Olivetti 76, 26010 Vaiano Cr. (CR)
☎ +39 0373 277 346 info@conceptsr.com www.zirconiaconcept.it

MEANING OF SYMBOLS

-  CE mark
-  LOT Lot number
-  Expiry date
-  See instructions for use
-  Storage Temperature
-  Avoid humidity and frost
-  Avoid direct sun light
-  For professional use only

TYPICAL MATERIAL PROPERTIES AND CHARACTERISTICS

| | |
|-----------------------------|-------------------------------------|
| Chemical description | 100 % PMMA (polymetil methacrylate) |
| Density | 1,19 g/cm3 |
| Modulus of elasticity | 2390 MPa |
| Vicat softening temperature | 102°C / 215°F |
| Ball indentation hardness | 145 MPa |
| Tensile strength | 85 MPa |
| Water absorption | c.a 6% |

INTENDED USE

PMMACAM products are suitable for realising parts of temporary dental prostheses: crowns and small bridges of 4 or 5 elements with a span width of up 2 pontics.

STORAGE

Keep the product in its own package, do not expose to direct sunlight, keep far from sources of heat and in a dry place, within ranges of temperature (5°C ÷ 40°C).

INSTRUCTIONS FOR USE

PMMACAM materials can be processed by cad-cam systems using milling for removal.

NOTES FOR DESIGN OF BRIDGES AND CROWNS

- occlusal wall minimum thickness 1,2mm
- cervical wall minimum thickness 0,6mm
- transversal section connectors anterior area 10mm²
- transversal section connectors posterior area 12mm²

In case of teeth in the posterior area, no more than two missing pontics between two abutment.

NOTES FOR MILLING

The following processing data, speed and movement of the tool must be "adjusted" from the dental technicians according to shape and thickness of the prosthesis to be processed.

Use tungsten carbide burs with one flute.

| PROCEDURE | TOOL | Ø TOOL | ROTATION SPEED RPM | FEED RATE | CUTTING DEPTH | COOLING |
|------------------|-------------------------------|--------------------|--------------------|-------------|---------------|--------------|
| ROUGH CUT | Tungsten carbide with 1 flute | Ø 2-2,5 mm 3 mm | 18-22000 Rpm | 18-22mm/min | 0,5 mm | Air or water |
| FINISHING | Tungsten carbide with 1 flute | Ø 1 mm | 15-16000 Rpm | 16-17mm/min | 0,2 mm | Air |

The use of tools suitable for working with Zirconia (2 cutting edges), new or not, for the processing of PMMA is not recommended; this may cause overheating of the material.

In order to separate the milled frameworks from the blank, use cross cut carbide burs suitable for acrylic materials or suitable cutting discs

If the product is combined with metallic parts, it is essential to set up mechanical retentions, as there is no adhesion between those materials.

If the product has to be combined with parts in acrylic resin, it is possible to achieve an adequate cohesion by using conventional primers.

TECHNIQUE FOR THE SUPERFICIAL COLOURING

1. Proceed with a light sandblasting (2 bar), using a 50-micron aluminium dioxide powder.
2. Remove the residue by steaming.
3. Use an ethyl acetate primer to promote adhesion (e.g. Lux Clea).
4. Brush a thin and uniform layer of varnish (e.g. Acelux).
5. Continue with the polymerization, following the instructions provided by the producer.
6. Mix pigments with the same varnish, until the required color is achieved.
7. Brush the mix on the surface and carry on photopolymerization.
8. At the end of the coloring step, brush an additional facing and photopolymerize, always following the instructions provided by the producer.

Notice: Colouring with photopolymerizing varnish could wear out over time leaving a rough surface, thus involving adhesion of bacterial plaque.

FINISHING AND POLISHING

- Use non-aggressive polishing paste (e.g. Universal Polish).
- Use only cotton brushes at low rpm to avoid overheating of the materials.
E.g. A Ø20mm brush on a 20-40.000Rpm, polish every 5-10 seconds using a light pressure. Alternatively, the same procedure can be used with Ø80mm brushes at 2800rpm.
- Clean using only running water; if needed, with low abrasive materials.

Warning: do not use ultrasound devices with acids that may change characteristics.

Variation in the color of the material could be observed in the following cases:

- extreme overheating during milling;
- long contact with carotene;
- unsuitable polishing;
- superficial pigmentation with photosensitive varnish, which could wear out over time leaving a rough surface, thus involving adhesion of bacterial plaque.

WARNING

- The product is not resistant to chemicals with oxidizing effect and to strong acids (pH < 4).
- Do not exceed a temperature of 150°C.
- A strong smell during milling should be considered as a sign that temperature is near the melting limit for the material.
If this condition occurs, immediately proceed with cooling.
- Avoid to breath powder during finishing, by using a suitable aspirator and/or a mask.
- Avoid overheating during finishing and polishing steps: as the material is thermoplastic, this could result in mechanical changes, thus affecting negatively the final prosthesis. It could also lead to the emission of irritating gases.
- A strong smell during milling should be considered as a sign that temperature is near the melting limit for the material.
If this condition occurs, immediately proceed with cooling.
- In case of manufacturing of small devices, do not leave sharp parts and take care that the dimensions of the finished device are such that, in case of mobility, they will not facilitate swallowing.
- Do not reuse the product.
- Do not contaminate the product during milling steps.
- Do not mix the product with other materials.
- In case allergenicity occurs, stop immediately the application and ask a physician for further advice.
- Notice: the material is not visible to X-rays

INFORMATION FOR THE FINAL USER

While delivering the finished device, the dental technician must give the following recommendations:

- a) Do not clean the prosthesis with abrasive products or products intended for cleaning of acrylic resin prostheses or metallic prostheses; use only products for oral hygiene.
- b) Wash the prosthesis by using cold water, or anyway water at $T < 42^{\circ}\text{C}$.
- c) Normal oral hygiene.
- d) Non-radiopaque device.
- e) Bruxism and contact with unusual antagonists could result in wear.
- f) Inflammable device (synthetic resin).
- g) In case of an allergic reaction to the material, immediately stop the application and ask a physician for further advice.

NOTICE

PMACAM must not be treated with alcohol based disinfectants because this may cause micro cracks in the molecular structure. A water based solution is recommended.