

POLYconcept

pmmacam

USER MANUAL

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REG. SAN. N. 64314

CO. N. CE. PT. s.r.l. COMPAGNIA NUOVE CERAMICHE PER LA TECNICA
 Registered office 43011 Busseto (PR) Via Respighi n.15 - ITALY
 Operational headquarters 43011 Busseto (PR) Via Musini n.6
 Commercial Office 26010 Izano (CR) Via Dossi n.8
 Contacts +39 0373 277 346 - info@conceptsr.com
 web site www.zirconiaconcept.it

MEANING OF SYMBOLS

 CEmark

 Lot number

 Expiry date

 See instructions for use

 Storage Temperature

 Avoid humidity and frost

 Avoid direct sun light

 For professional use only

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°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.

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 permanent 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.

PROCEDURE	TOOL	Ø TOOL	ROTATION SPEED	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

Use tungsten carbide burs with one flute.

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.

NOTICE

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