

Technical data sheet

PMMA^{CLEAR} CADstar occlusal splint



Manufacturer

CADstar GmbH
Sparkassenstr. 4
5500 Bischofshofen
Austria

CADstar GmbH
is certified according to
■ DIN EN ISO 13485
■ RL 93/42/ECC (CE 0297)

■ Description

PMMA^{CLEAR} for the production of occlusal splints & for the production of lost moulds for casting technology

■ Description

Occlusal splints made of PMMA^{CLEAR} (translucent PMMA blank) are made of a bio-compatible high-strength synthetic material which is suitable for medical applications up to 30 days of tissue contact. It is possible to wear dental applications that come in contact with blood and tissue up to 180 days (however, this requires that there is no contact more than 8 hours a day).

A bite splint (also referred to as a grinder or Bruxism-Michigan splint) is a prosthesis-like synthetic support adapted to the dental arch for the treatment of myoarthropathies (diseases of the masticatory system). By fitting the patient with a bite splint, the aim of the therapy is to eliminate overload and misalignment of the teeth and the temporomandibular joints.

The bite splint is applied if loss of material due to mechanical abrasion (erosion) on the teeth has occurred. The splint is intended to protect the teeth from further loss of enamel. The splint can be made either for the upper jaw or the lower jaw; however, most of the splints are used in the lower jaw.

The material is also particularly suitable for the production of lost moulds for casting technology, but also for press and overpressure technology and can be incinerated without residues remaining. The transparent synthetic is very easy to mill and has excellent dimensional stability.

Furthermore, the method represents a very fast and cost-effective way. Its functionality and accuracy to fit the dental model are exceptional.

■ Indication/contraindication

PMMA^{CLEAR} is not intended for the use in the patient's mouth! The material can be used to create substructures for crown and bridge models, as well as occlusal splints.

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■ Modelling

The mechanical properties of the planned substructure materials and/or the specifications of the substructure material provided by the manufacturer must be taken into consideration when designing crown and bridge frameworks.

■ Cleaning

For all plastics and composites, which are used as substructure material, or for veneering, evaporation should be avoided. Evaporation presents an excessive heat and pressure load. Ultrasonic devices, as well as mechanical cleaning options, are an excellent alternative. The ultrasound device should be operated only for a short duration of approx. 1 min and a temperature of max. 40°C. Cleaning solutions should only be added in low concentration.

■ Chemical composition

PMMA_{CLEAR} consists of:

- Polymethyl methacrylate (> 99% PMMA) with cross-linked polymers based on methacrylic acid esters
- Residual peroxide
- Up to a maximum of 1% methyl methacrylate (MMA) may be present as residual monomer

■ Physical/mechanical properties (guidelines)

Density ρ (at 20°C)	1.19 [g/cm ³]
Elasticity module (at 20°C)	3,300 [MPa] or [N/mm ²]
Vicat softening temperature (melting point)	103 [°C] or 217.4 [°F]
Ball indentation hardness (H 961/30)	175 [MPa] or [N/mm ²]