

Product Information On  
**Quadrant Posterior Dense**  
Light curing Composite Resin

## Introduction

Quadrant Posterior Dense is a light curing radiopaque composite filling material with fluoride release, specifically designed for the restoration of posterior teeth. A special characteristic is, that this hybrid composite is packable resulting in perfect contact points and excellent wall adaptation. It is available in 4 Vita™ (A2, A3, B3 and C3) packed in syringes of 4 g ( 2.1 ml) each or “single use” capsules of 0.25 g ( 0.13 ml) each.

The Quadrant Posterior Dense matrix is based on the traditional bi-functional Bis-GMA monomer combined with a 4-functional acrylate monomer resulting in a high cross-link density.

Quadrant Posterior Dense is used to fill cavities, prepared according to the principles of adhesive dentistry, adopting the minimal invasive technique for maximal preservation of sound tooth tissue. This requires the application of an adhesive bonding system such as Quadrant UniBond or Quadrant Uni-1-Bond in combination with an etching agent such as Quadrant Total Etch (the so-called “total etch technique”)

The normal procedure, after a “lege artis” cavity preparation, conditioning of the tooth tissue involved (both enamel and dentin) and the application of the bonding agent, is as follows:

- the composite resin is applied in the cavity in layers of max. 2 mm and light cured for 40 s.
- depending on the situation, one or more layers are applied
- after filling the cavity, the restoration is modelled and shaped, and finally finished and polished.

Quadrant Posterior Dense has been developed as a response to the demand for composites that are particularly suitable for the restoration of molars and pre-molars. Therefore Quadrant Posterior Dense features high durability - in this case not at the cost of aesthetic characteristics - protecting the restoration against fracture and wear. It is polishable to a high gloss and therefore resistant to tarnishing, discolouration and plaque formation. Besides this, it has been proven in clinical studies that bariumglass filler particles are antagonist friendly.

Quadrant Posterior Dense is indicated for Class I, II and V restorations of posterior teeth and the restoration of deciduous teeth.

Quadrant Posterior Dense is developed and manufactured by Cavex Holland B.V., a Company that is certified according to the provisions of the Council Directive 93/42/EEC of 14 June 1993 concerning Medical Devices, against ISO 9001 and ISO13485.

Quadrant Posterior Dense bears the CE-Mark of conformity.

## Composition

The basic ingredients of Quadrant Posterior Dense are:

Poly-functional methacrylate-based monomers	2,5	% w
Bis-GMA, UDMA, TegDMA	22	% w
Barium aluminium silicate glass fillers, mean 5 µm	14	% w
Barium aluminium silicate glass fillers, mean 0.7 µm	43	% w
Porous SiO <sub>2</sub> , mean 8 µm	18	% w
Polymerisation catalysts	0.4	% w
Inorganic pigments	0.1	% w

## Manufacturing

Basically, the monomers and fillers are carefully weighed and blended in high-performance kneading equipment under vacuum, in order to obtain a composite paste, free of air bubbles. The last production step is to add the inorganic pigments in order to obtain the various shades in which the product is made available. Finally, the composite paste is filled into syringes or “single use” capsules.

## Laboratory control

Quadrant Posterior Dense is in full compliance with the EN 24049 standard for resin-based dental filling materials.

The following table gives typical values for the most important properties:

	Quadrant Posterior Dense	
filler content	75	% w
	57	% vol.
compressive strength	385	MPa
flexural strength	>120	MPa
modulus of elasticity	>8000	MPa
water absorption	24	µg/mm <sup>3</sup>
radiopacity	180	% Al

## Shelf-life test

There is no official shelf-life test described for composite resins. But it is well-known, that composite dental filling materials may show some deterioration upon storage, in particular at elevated temperature. Therefore, care should be taken to protect the product from a decrease in quality.

Extensive shelf-life studies (e.g. 7 days storage at 50 °C) have been carried out, recording any change in product qualities related to storage conditions.

Based on the results of these tests, we can guarantee the good qualities of Quadrant Posterior Dense for a period of 3 years, provided the product is stored below 25 °C/77 °F when not in use.

### **Quality control**

A batch of Quadrant Posterior Dense, that has passed all the tests, is released for sales. In case of one or more requirements being not in specification, that batch is withdrawn and not sold.

### **Statement of non-toxicity**

We hereby declare that Quadrant Posterior Dense can be safely used and is non-toxic to the patient as well as to the dental team.

Quadrant Posterior Dense will also normally not be irritant to oral tissues and it does not contain any hazardous ingredients in sufficient concentration to be harmful to human beings, when used as directed.

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