



TECHNICAL DATA SHEET

Product: Alpha-Core® DC Dual Cure Resin Based Composite

Product Description: Alpha-Core® DC is a highly filled radiopaque, dual cure composite in an Automix Delivery System designed specifically for core build-ups and cementation of posts and pins. The material exhibits ideal mechanical properties with high compressive and tensile strength yet maintains a dentin-like feel while cutting.

Indications for Use: Alpha-Core® DC is designed specifically for core build-ups and cementation of posts and pins.

Appearance: Catalyst: Opaque white paste
Base: Opaque blue or natural (A2) shade paste.

Curing Mechanism: Dual-cured:
- Self-cured by mixing base and catalyst together.
- Light-cured by applying an external energy activated Dental Blue Light with a minimum output of 600 mW/cm² and wavelength of 400 to 500 nm.

Shelf-Life: 36 months

Filler Type: Blend of inorganic fillers.

Filler % by Volume:	48.61
Filler Particle Range, µm:	0.02 – 5.0
Average Filler Particle Size, µm:	3.14

Main Composition (%w/w):

Inorganic Fillers	65 – 75
Blend of Methacrylate Monomers	25 – 35
Initiator	< 1
Inhibitor	< 1
Acelerator	< 1
Photoinitoator	< 1
UV Absorber	< 1
Colorants	< 1

Physical /Mechanical Properties: (Typical Values)

Working Time (Blue Shade) at 23 °C, seconds	110
Working Time (Natural Shade) at 23 °C, seconds	110
Setting Time (Blue Shade) at 37 °C, seconds	135
Setting Time (Natural Shade) at 37 °C, seconds	135
Depth of Cure (Blue shade) at 20 sec, mm/2	1.6
Depth of Cure (Blue shade) at 40sec, mm/2	1.9
Depth of Cure (Natural shade) at 20 sec, mm/2	2.0
Depth of Cure (Natural shade) at 40 sec, mm/2	2.6
Flexural Strength, MPa	143



Diametral Tensile Strength, MPa	39
Compressive Strength, MPa	296
Water Sorption, $\mu\text{g}/\text{mm}^3$	17.7
Water Solubility, $\mu\text{g}/\text{mm}^3$	1.8
Color Stability	Stable
Radio-opacity, compared to 1mm thick Aluminum	1.0

Regulatory Classification

This product is in conformity with the following standard(s) or other normative documents:

- International Standard ISO 4049: 2019 Dentistry – Polymer-Based Restorative Materials
- ANSI/ADA Specification No. 27: 2016 Resin-Based Filling Materials
- European Standard BS EN 1641: 2009 Medical Devices for Dentistry – Materials
- Code of Federal Regulations CFR 21 Part 820 Medical Device Quality System Regulation
- Code of Federal Regulations CFR 21 Part 872 Dental Devices, Section 3690 Tooth Shade Resin Material

Signature/ Date:

John Pontikis / 6/5/19

Name:

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Position:

Management Representative

ISO 13485