

# TECHNICAL DATA SHEET

<b>Product:</b>	Alpha-CEM <sup>®</sup> DC Dual Cure Resin-Based Dental Luting Material		
<b>Product Description:</b>	Alpha-Cem <sup>®</sup> DC is a Dual Cure Resin-Based Luting Material containing 41% by volume of a blend inorganic radio-opaque fillers with particle range from 0.04 to 2.2 microns possessing unsurpassed physical properties. The organic matrix oligomer is based on Bis-GMA. It is specially formulated for permanent cementation of esthetic ceramic/porcelain, etched metal resin bonded, or composite fixed prosthesis.		
<b>Indications for Use:</b>	Alpha-Cem <sup>®</sup> DC is recommended for cementation of implant prosthesis, crowns and bridges, inlays, Maryland Bridges, veneers, posts, pins and periodontal splinting.		
<b>Appearance:</b>	A two-paste system, available in highly translucent shade that adapts well to the restoration of the tooth structure. Base: Soft beige paste / Catalyst: Soft white paste.		
<b>Curing Mechanism:</b>	Dual cured by mixing catalyst and base together and applying an external energy activated Dental Blue Light with minimum output 600 mW/cm <sup>2</sup> and wavelength of 400 to 500 nanometers. Self- cured by mixing catalyst and base together.		
<b>Shelf-Life:</b>	30 months		
<b>Filler Type:</b>	Barium glass, glass ionomer, quartz and silica.		
	Filler % by Volume:	Base:	41 %
		Catalyst:	45 %
	Filler Particle Range, $\mu$ :	Base:	0.02 – 2.0
		Catalyst:	0.01 – 5.0
	Filler Average Particle Size, $\mu$ :	Base:	1.6
		Catalyst:	4.7
<b>Main Composition:</b>	<b>Base:</b>	<b>% w/w</b>	
	Inorganic fillers	50 – 70	
	Bis-GMA	15 – 35	
	Methacrylate monomers	5 – 15	
	UV Absorber	< 1	
	Accelerator	< 1	
	Colorant	< 1	
	Photoinitiator	< 1	
	<b>Catalyst:</b>	<b>% w/w</b>	
	Inorganic fillers	50 – 70	
	Methacrylate monomers	10 – 30	
	BIS-GMA	10 – 20	
	Dessicant	< 5	
	Initiator	< 1	
	Preservative	< 1	

**Physical /Mechanical Properties:** (Typical Values)

Setting Time @ (37 ± 1) °C, minutes:	4
Water Sorption, µg / mm <sup>3</sup> :	27
Water Solubility, µg / mm <sup>3</sup> :	2.3
Film Thickness, µm:	20
Flexural Strength, MPa :	124
Compressive Strength, MPA:	220
Diametral Strength, MPA:	43
Working Time @ (23 ± 2) °C, seconds:	120 (minimum)