TOP DENT

Activa BioACTIVE

Strong, esthetic, bioactive restoratives

PULPDENT
Figure 1. Number of failed restorations with type of failure during the first six-year observation time.
Overcoming the Root Cause of Restoration Failure

- Life expectancy of traditional bonded restorations is 5.7 years (NIH). The bonding agents deteriorate, and the restorations fail at the margins due to micro-leakage.
- Bioactive materials stimulate mineral apatite crystal formation that fills micro-gaps and seals margins.
- This remineralization process forms a natural, protective layer at the tooth/material interface.
• Strong and esthetic like composites
• Tough and resilient like dentin and enamel
• No sensitivity - Biocompatible
• Simplified technique
• Easy handling and placement
• Ionic, resin-based material
• Stimulates mineral apatite formation
• Integrates, penetrates and chemically bonds and seals teeth against bacterial leakage
• Continuous diffusion of calcium, phosphate and fluoride responds to natural pH and demin/remin cycles and provides long-term benefits for patients.
Three key components:

1. Patented bioactive ionic resin
2. Patented rubberized resin
3. Reactive ionomer glass
Strength of ACTIVA Compares with Composites

Compressive and Tensile Strength of ACTIVA BioACTIVE-RESTORATIVE is comparable to composites and greater than GIs and RMGIs


**ACTIVA = BioACTIVE Restorative;** Filtek = Composite; Ketak Nano = RMGI; Fuji IX = GI
Wear of ACTIVA Compares with Composites

Volume wear of ACTIVA BioACTIVE-RESTORATIVE is comparable to composites and far less than glass ionomer.

Bansal R. Wear of a Calcium, Phosphate and Fluoride Releasing Restorative Material J Dent Res 94 (Spec Iss A) 3797, 2015 (www.iadr.org)
Fluoride Release and Recharge of ACTIVA is Greater than GIs and RMGIs.

Tough Rubberized Resin

ACTIVA’s rubberized resin provides unparalleled toughness. Toughness, measured by **Deflection at Break** using a 3-point bend test, is the ability of a strong, hard material to absorb stress and resist fracture.

3-point bend test

Automobile tires are really tough.
ACTIVA is Tougher than Composite

ACTIVA resists fracture and chipping. Deflection at Break of ACTIVA is 2-3 times greater than composites and 5-10 times greater than GIs and RMGIs.

Deflection at Break (Flex data) of Restorative Materials

ACTIVA Apatite Formation

SEM of ACTIVA surface after 21 days in saline shows calcium-phosphate apatite formation

SEM of ACTIVA Surface 3000x (Semtech, Billerica, MA)
Marginal Failure and Demineralization

stained biofilm

surface lesion
gap widening

composite
dentin

Enamel
Dentin
Activa

University of Oregon; Dr. Jack Ferracane
ACTIVA BioACTIVE contains NO Bisphenol A, NO Bis-GMA and NO BPA derivatives.

ACTIVA has three setting mechanisms:
1. Light cure
2. Self-cure resin chemistry
3. Self-cure glass ionomer acid-base reaction

ACTIVA products are 2-paste systems packaged in 5mL automix syringes. Use the ACTIVA-Spenser to easily dispense the RESTORATIVE material.

Mix tips with unique bendable metal cannula provide precise placement.
“The esthetics of the material was excellent.”

“Retention was excellent – no debonds at the one-year recall.”

“No observations of marginal staining at one year.”

“No restorations exhibited any fracture or chipping.”

“No signs of wear on 99% of restorations.”
TOP DENT

ACTIVA BioACTIVE-BASE/LINER replaces RMGIs, glass ionomers, and flowable composites. No etching, no bonding agents, no crumbling, no sensitivity.

Shows prepared tooth.

Photos courtesy of Dr. Robert Lowe

Shows ACTIVA BioACTIVE-BASE/LINER after light curing. Note dentin shade.

Finish restoration using composite or ACTIVA BioACTIVE-RESTORATIVE.

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