NOVA COMPO C

Nanohybrid Universal Composite

Our Aim is
Your Success

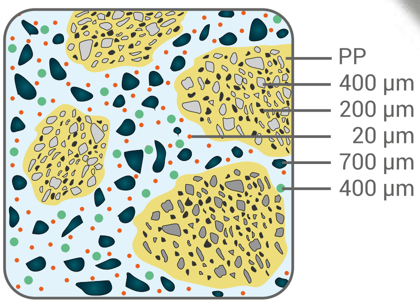
IMICRYL

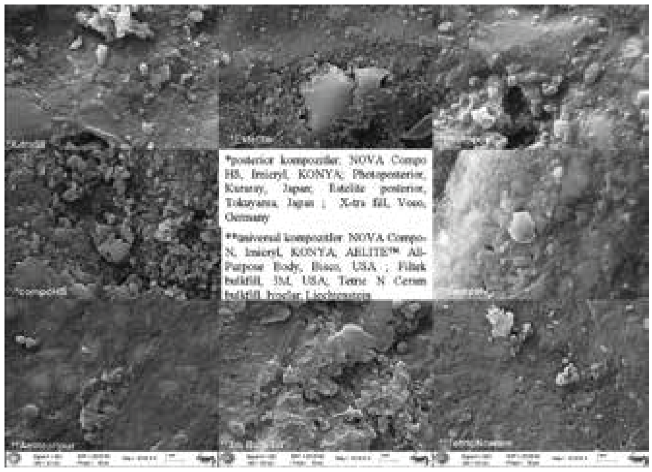
NOVA COMPO C

Nova Compo C is a light-curing, radiopaque, nano-hybrid composite for anterior and posterior restorations.

Advantages

- Extended Longevity and Durability
- Excellent handling
- Superior Aesthetics
- No sticking to instruments.
- Low polymerization shrinkage and less stress
- Excellent wear resistance and strength





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Composition

The monomer matrix is composed of dimethacrylates (18–22% weight). The fillers contain barium glasses, ytterbium trifluoride and prepolymer (83–78 % weight), additives, catalysts, stabilizers and pigments .

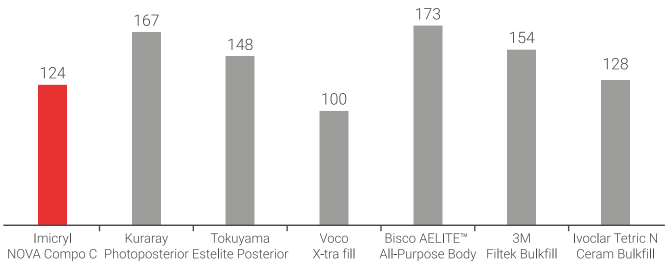
Filler Technology

Nova Compo C is designed with different types, sizes and conc entrations of fillers to determine the translucency, strength, and radiopacity.

- High density radiopaque prepolymerized filler
- 0,6-0,7 micron ba-glass
- 0,4 micron ba-glass
- Nano fillers

Prepolymerized fillers provide low shyrinkage, low stress, non-sticky, easy handling and shaping formulation. High loading Prepolymerized fillers provide better wear resistance than traditional less loaded Prepolymerized fillers in other marketing composites.In nano hybrid composite Compo C ; the spaces between the prepolymerised filler particles are occupied by nano fillers and ba-glasses. The nano fillers and 0,4 micron ba-glasses provide high polish, high wear, surface hardness and making the material smooth . Compo C offers sufficient working time without premature settin g of the material under the operatory light. The refractive index of the filler and matrix result in near perfect matching for the chameleon effect . The ba-glasses each have slightly differing refractive indices to provide complex light reflection and light scattering for a chameleon effect.

Flexural Strength (mpa)



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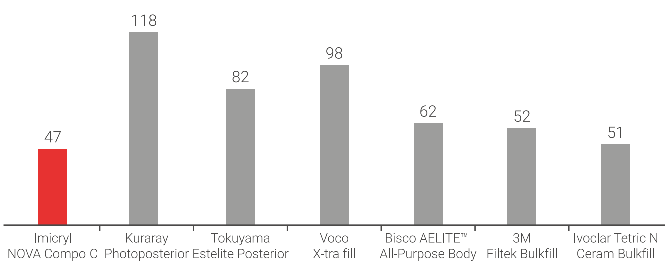
Surface Hardness



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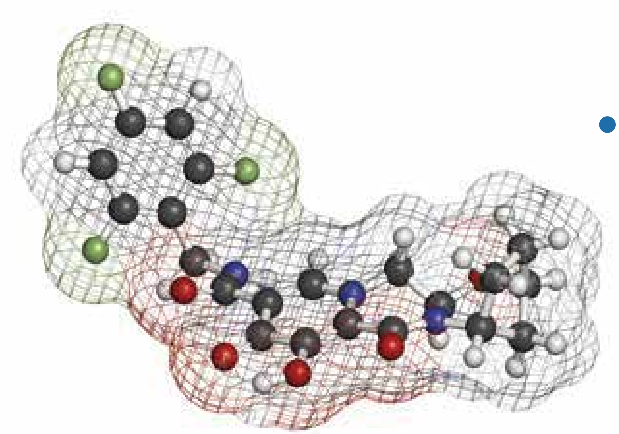
Monomer Technology

Compo C is designed with the high molecular weight reduced shrinkage resin. The higher molecular weight of the resin results in less shrinkage,reduced aging and a slightly softer resin matrix. Additionally these resins impart a greater hydrophobicity and are less water absorption. Nova Compo C does not contain diluent monomers like TEGDMA. The low molecular weight and resultant high number of double bonds per unit of weight creates a high degree of crosslinking creating a very rigid, stiff composite with a relatively high amount of shrinkage and modulus of elasticty.Ideally composite restorations should not have a modulus of elasticity that is too high since brittle materials are not efficient in buffering high stress restorations.
The Modulus of Elasticity is optimised for Nova Compo C. High molecular weight and low number of C=C double bonds the ULS monomer helps reduce polymerization shrinkage and stress.The ULS monomer enhances high percent elongation and toughness to improve the durability of restorations. ULS monomer also has higher degree of convertion than traditional UDMA,Bis-GMA monomers.



ULS® MONOMER
ULTRA LOW SYRNIKAGE

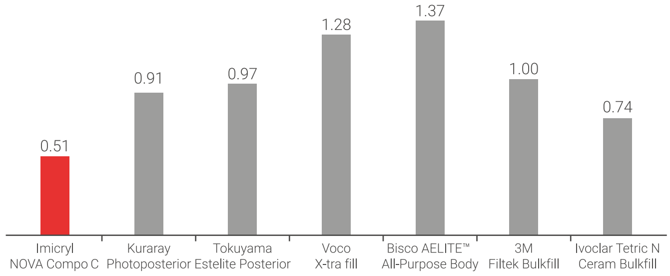
Evaluation Of ULS Monomer As An Additive

To evaluate ULS monomer use as an additive, ULS monomer was added in 10 wt% and 25 wt% to a 70:30 wt% blend of BisGMA and TEGDMA. Camphorquinone (CQ, 0.3 wt%, Sigma Aldrich.) and ethyl 4-dimethylaminobenzoate (EDAB, 0.8 wt%, Sigma Aldrich) system for this round of testing . The samples were prepaired according to ISO 4049 with a sizes of 25x2x2 mm. The specimens were tested in universal testing machine(DEVOTRANS-İstanbul-Türkiye) by a 1 mm/ dk speed.

Bis-GMA/ TEGDMA		ULS Monomer	
Mean	Standart Sapma	Mean	Standart Sapma
71.7	4.91	94.36	5.04

1. Ruyter IE, Svendsen SA. Remaining methacrylate groups in composite restorative materials. Acta Odontologica Scandinavia 36:75-82,1978.
2. Rueggeberg FA, Hashinger DT and Fairhurst CW. Calibration of FTIR Conversion Analysis of Contemporary Composite Resins. Dental Materials 6:241-249, 1990.

Surface Roughness



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Degree Of Conversion For The ULS Monomer

The average degree of conversion for the ULS MONOMER was 32% higher than a BisGMA/TEGDMA (70/30) blend with an identical photoinitiator package and curing protocol. Camphorquinone (CQ, 0.3 wt%, Sigma Aldrich.) and ethyl 4-dimethylaminobenzoate (EDAB, 0.8 wt%, Sigma Aldrich) were used as the visible light (470 nm) photoinitiator system .After the spectrum of the uncured resin was obtained, the same specimen was photo-cured using a conventional dental light-curing unit by applying a 20-second exposure at a tip-to-resin distance of 2 mm. Five minutes after deactivation of light exposure, another infrared spectrum was obtained of the polymerized material. The resin was not removed from the ATR element during the process. The area ratios were then converted into degree of conversion data using methods common in the dental literature. [1, 2]

ULTIMATE FLEXURAL STRENGTH

	Bis-GMA & TEGDMA		% 10 ULS Monomer	% 25 ULS Monome	
	2.05	75.2	5.8	1.6	8.99
Elastic Modulus(Gpa)	15.01	94.36	1.68	0.4	64.45
Maximum Force(N)	0.989	71.7	7.1	1.8	6.21

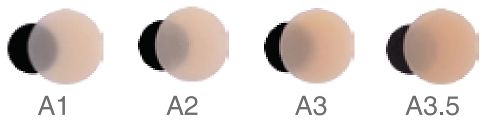
	Toughness at Max Strength(J)	% Conversion	% Volumetric Syrinkage	Average Syrinkage Stress(Mpa)	% Elongation
Urethane Dimethacrylate	2.05	75.2	5.8	1.6	8.99
ULS Monomer	15.01	94.36	1.68	0.4	64.45
BisGMA/TEGMA	0.989	71.7	7.1	1.8	6.21

COLOURS

AESTHETIC RESTORATIVES

SINGLE USE	CLASSIC SYSTEM	PREMIUM SYSTEM DUAL	PREMIUM SYSTEM MULTI
A1	UD A1 INC	A2D A1E	A2D A1B WE TCW
A2	UD A2 INC	A3D A2E	A3D A2B A1E TCW
A3	UD A3 INC	A3.5BD A3E	A4BD A3B A2E TCA
A3.5	UD A3.5 INC	A4BD A3E	A4BD A3B A2E TCA
A4	UD A4 INC	B4BD A3E	A4BD A3B B2E TCA
B1	UD B1 INC	B1BD B1E	A1D A1B WE T
B2	UD B2 INC	B2BD A3E	A4BD A3B B2E TDR
B3	UD B3 INC	B3BD A3E	B3BD A3B B2E TCA
C2	UD C2 INC	C3BD A2E	C2BD A2B B2E TDR
C3	UD C3 INC	C4BD B2E	B3BD A3B B2E TDR
C4	UD C4 INC	B4BD A3E	C4BD A3B B2E TDR
D2	UD D2 INC	D3BD B2E	D2BD A3B B2E TCB
D3	UD D3 INC	D3BD A3E	D3BD A3B B2E TCB
WBD	UD WBD INC	WBD WE	WBD WE TCW
XWB	UD XWBD INC	XWBD XWE	XWBD XWE TCW
AO2	UD AO2 INC	AO2 TCB	NONE

WE	WHITE ENAMEL
XWE	EXTRA WHITE ENAMEL
WBD	WHITE DENTINE
XWBD	EXTRA WHITE DENTINE
AO2	A2 OPAQUE
TCB	TRANSPARENT CLEAR BLUE
TCA	TRANSPARENT CERVICAL AMBER
TDR	TRANSPARENT DARK GRAY
TCW	TRANSPARENT CLEAR WHITE
INC	INCISAL



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