

Tekna[®] 831C series

Tekna 831C is part of a unique new class of polymers that cure via a combination of polyurethane and unsaturated polyester cure chemistries. The polyurethane cure is achieved by reacting a hydroxyl terminated polyester polyol with a polyisocyanate using a urethane catalyst. The unsaturated polyester cure is achieved by polymerizing a vinyl monomer (usually styrene) solution of a polyester containing vinyl unsaturation with a peroxide catalyst.

This material is a low cost hybrid polyester/polyurethane material which may be used with or without fiberglass reinforcement. As part of a series of these type of systems this material exhibits excellent impact resistance with moderate to excellent flexibility. The system has the normal chemical resistance of polyurethanes.

Physical Properties	Unreinforced	Reinforced
Hardness, Shore D	75	75
Tensile Strength, psi	4,200	8100
Tensile Modulus	50,000	
Elongation, %	60	2.4
Flexural Strength, psi	2,200	
Flexural Modulus	48,000	
Heat Distortion, 264 psi, C	40	
Izod Impact, notched	2	
Izod Impact, unnotched	>35	

*Reinforcement is 2 layers of 1-1/2 oz glass

This material has good abrasion resistance as well as excellent resistance to sagging with reinforcement. Tekna 831C is an excellent candidate for quantity applications where high physical strength is not required but a stable system is needed. Normal glass reinforcement levels are in the 20 - 30% range.

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Chemical Resistance

Chemical	Resistance	Chemical	Resistance
10W40 Pennzoil	Pass	Heptane	Pass
10W40 Pennzoil @ 158 degrees F	Pass	3% hydrogen Peroxide	Pass
Tolulene	Pass	25% Hydrogen Peroxide	Fail (by 23%)
Mineral Spirits	Pass	Unleaded Gasoline	Pass
Methyl Alcohol	Pass	Kerosine	Pass
10% HCl	Pass	5% Acetic Acid	Pass
Conc. HCl	Fail (by 18%)	Glacial Acetic Acid	Fail (by 32%)
Acetone	Fail (by 40%)	10% Sodium Peroxide	Pass
5.25% Sodium Hypochlorite	Pass	Concentrated Ammonium Hydroxide	Fail (by 32%)
2% TSP	Pass	60% Sodium Hydroxide	Fail (by 30%)

The pass/fail criteria in this table was taken from a combination of tensile strength, tensile modulus, and % elongation. If any one property fell by 10% or more, the material was considered to have failed that test. The test duration was for 7 days.