



BAKELITE
SYNTHETICS

FIRE & THERMAL RESISTANT FRP RESINS

Proven Products for Ease of Processing Low Emissions and High Strength

Composites of Fiber-Reinforced Polymers (FRP) are used to replace steel, aluminum, and wood in a wide range of applications. They offer numerous advantages over these materials - lower density, lighter weight, better corrosion resistance, and durability. Composites' inherent fire resistance, strength, and ability to withstand high temperature environments with less weight than those materials have made them the product of choice for fire-resistant piping, mining ventilation systems, and armored vehicles. In public transportation, they are used in aircraft interiors, fire-resistant railcar and bus parts, passenger decking and walkways.

Bakelite Synthetics resins are used around the globe as a primary component of FRP composites in applications ranging from mass transit to oil rigs to aerospace. Increasingly they are being used in the fast-growing electric vehicle battery market and other electronic and circuit board industries. We bring decades of experience and a portfolio of proven phenolic products from which to choose the properties needed for the specific application. Parts made from Bakelite resin systems have passed United States, British, European and International Maritime Organization Standard Fire tests or meet Military Specification MIL-R-9299C requirements.

Some of our products are resin systems that include a catalyst for ease of processing and faster cure speed.

We know that every application is different. Our resin knowledge provides us the foundation for helping you to assess the product that will be right for you. The products in this brochure represent many of our off-the-shelf products but our goal is to meet the requirements of your specific application so contact us if you have other needs.

Bakelite Resins Applications and Fitness

PULTRUSION	Can process on traditional polyester pultrusion equipment. Styrene-free. Thermally or catalyst cured.
SHEET AND BULK MOLDING COMPOUNDS (SMC/BMC)	Resistance to hydrocarbon and chlorinated solvents. Viscosity, processing and cure properties that can avoid special processing or equipment adjustments.
HAND LAY-UP AND RESIN TRANSFER MOLDING (RTM)	Parts made from many resins meet requirements of United States, British, European, and International Maritime Organization Standard Fire Tests.
VACUUM INFUSION	Low viscosity and low temperature system for ease of processing and to produce high quality complex shapes.
FILAMENT WINDING	Latent catalysts to produce a pot life equal to that of a polyester mix while maintaining cure speed. Typical resin cure temperatures are 65°C to 95°C. After curing, pipes demonstrate strength, dimensional stability, and glass transition temperature (Tg) from 120°C to 220°C. Higher Tg is possible.
HONEYCOMB AND PREPREG	Resins for aramid fiber honeycomb, glass and carbon fiber prepregs. Solventborne and waterborne resins. Parts made from many resins meet United States Military Specification MIL-R-9299C and MIL-DTL-64154B requirements.
GELCOAT	Off-white uncolored, filled, thixotropic, surface improving gelcoat; applied in mold by brush or spray; recommended for using in hand lay-up and infusion processes; provides a smooth, pin-hole-free surface for painting; intrinsically fire resistant.

Bakelite® Composite Resins	Process								Manufacturing Location*		Features	
	Pultrusion	SMC	Hand Lay-Up	RTM	Vacuum Infusion	Filament Winding	Honeycomb Dip	Pre-Preg	Gelcoat	EU		US
Bakelite® PS70-006_D											Ease of processing	
BK 145K26											Low temp. cure, low viscosity	
BK 486G34											Low temp. cure	
BK 7600											Aircraft interior, light curing color	
BK 7649											Aircraft interior, fast curing	
BREAKTHRU™ 171K90											Ultra-low free formaldehyde	
Cellobond™ J2027X01											Low viscosity, ultra-low emission, low temp. cure	
Cellobond™ J2042X01											Thixotropic, ultra-low emission, low temp. cure	
Cellobond™ J6021X01											Low water, ultra-low emission, low temp. cure	
Cellobond™ SC-1008P/ Durite™ SC-1008											Military certification, Government/DoD applications	
Cellobond™ SL-7098											Impact resistance, flexible matrix	
Cellobond™ ULF GC84-500											Surface improving paste, ultra-low emission	
Cellobond™ ULF PS54-002											ultra-low emission	
Cellobond™ ULF PS90-206											High performance, ultra-low emission	
Durite™ SL-575B											Impact resistance, flexible matrix	

*All products available globally



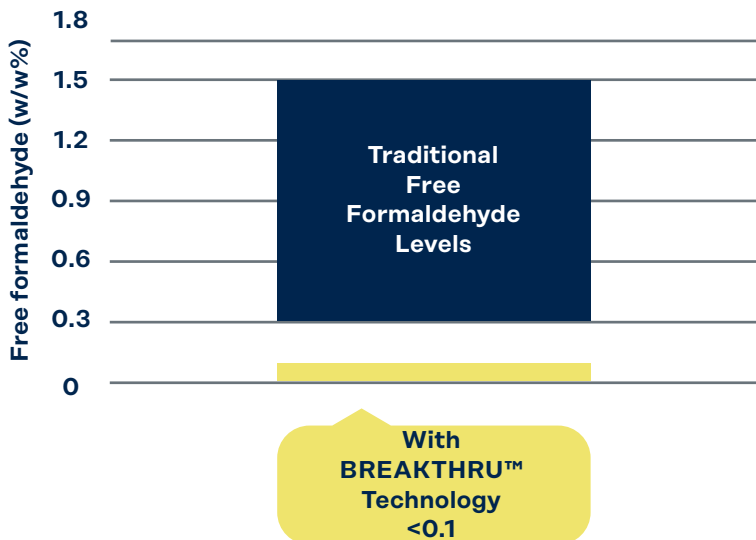
INNOVATIVE PRODUCTS AND SERVICES

BREAKTHRU™ Technology to Reduce Free Formaldehyde

Reducing residual formaldehyde content in phenolic resins is a frequent request in composites and other

industries. Phenolic resins used for industrial applications historically contain free formaldehyde levels ranging from 0.3 % to greater than 1.5 %. Reducing these levels can favorably affect plant emissions. BREAKTHRU™ technology has been shown to reduce free formaldehyde in phenolic resins to below 1000ppm or less than 0.1 %.

Analysis shows that BREAKTHRU™ technology can also lower free phenol content and offer faster curing profile. In addition, Bakelite® resins produced through BREAKTHRU™ technology found to improve performance in honeycomb applications.



Effect on Free Formaldehyde Levels with BREAKTHRU™ Technology from Bakelite Synthetics



Next Generation Synthetics



Learn more about the vision, products and history of bakelite on our website

bakelite.com

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