

# VOLTOID® FLAME-RETARDANT ELECTRICAL INSULATION

## Affordably Superior 94-5VA Performance

Voltoid V-090 is a medium-density engineered composite of organic and inorganic fibers bound in a proprietary latex matrix. The material is virtually impossible to ignite. With UL's highest 94-5VA flammability rating and a glow-wire ignitability rating of 900°C, Voltoid V-090 excels as a flame barrier and electrical insulator. Therefore, it won't melt or degrade in a catastrophic fire—an important characteristic in product liability.

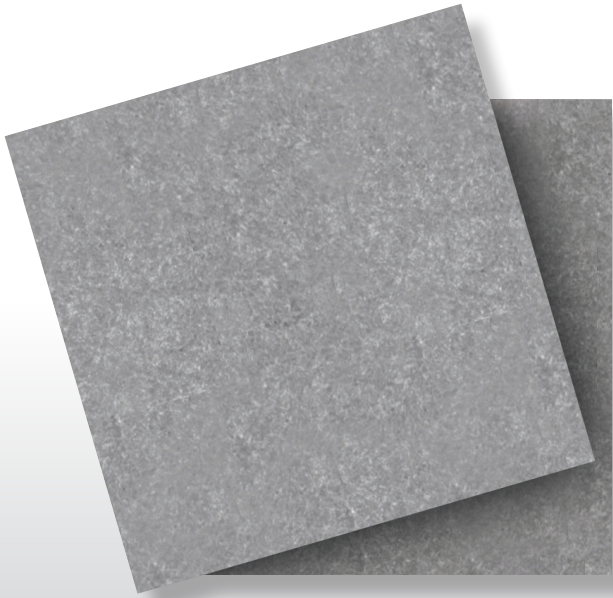
V-090 offers an unsurpassed package of dielectric strength, flame resistance, temperature resistance, printability, and flexibility—all in an affordable material that applies easily. The material is available in roll form in .015" and .030" thicknesses and can be die cut into custom parts. It is also available in adhesive-backed tape form under the designation ISI-507.

In addition to its fire-retardant capabilities, Voltoid V-090 exhibits good flexibility, making it ideal for electric motor coil wrap applications. It can be an excellent alternative to more brittle and more expensive flame-retardant materials commonly used.



***"We simply couldn't burn the V-090 material in a test procedure in the lab... the most flame-resistant material we've seen."***

Edward Van Vooren  
President  
ELTEK International Laboratories



Characteristic	Voltoid V-090
UL Flammability Rating	94 5VA
UL File Number	QMTS2.E215806
Relative Temperature Index	
.015" thickness	115°C
.030" thickness	140°C
Glow-Wire Ignitability	900°C
Dielectric Strength	120 V/mil
Tensile Strength	
MD	1500 psi
AMD	1150 psi



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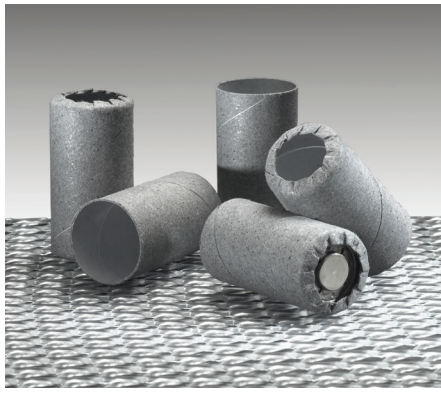
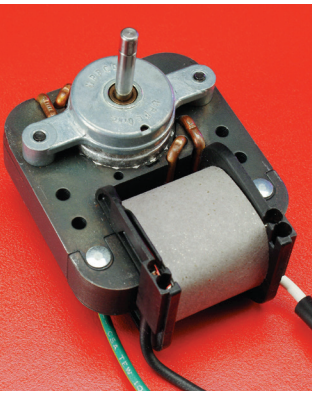
**Inter**face  
Performance Materials

# THE SWITCH TO VOLTOID V-090 IS ON

## Shaded Pole Motors

**Challenge** A leading manufacturer of residential exhaust fans wanted to lower product liability exposure. When the previous insulation materials burned or melted during a fire, the company became entangled in product liability issues since it became difficult to prove the motor did not cause the fire.

**Solution** Not only did V-090 provide superior flame resistance, with V-090 the proof was plain to see: no burning, no melting, and no liability due to failure of the coil cover insulation.



## Rechargeable Batteries for Hand Tools

**Challenge** A leading manufacturer of battery packs for hand tools wanted a better, safer material than the HB-rated material being used as a base plate insulator. They also sought to replace the expensive flame-retardant VO-rated materials they were using in higher voltage units. Additionally, they needed a replacement for fiber-based insulation wraps for individual battery cells.

**Solution** One material answered all their concerns. A combination of die-cut V-090 in the base plate and V-090 laminated to glassine to form tubes used to insulate individual battery cells provided a technically superior, cost-effective solution.

## Motor Backing for Appliances

**Challenge** An appliance maker wanted a new flame-retardant motor backing that would work well in high-moisture applications such as washers, driers, and dishwashers.

**Solution** In a side-by-side humidity test of motors equipped with the synthetic fiberboard currently used and V-090, the V-090 material contained dramatically less moisture—over 93% improvement—and exhibited none of the brittleness or deterioration experienced with the existing fiberboard.

## ISI-507

ISI-507 is an adhesive-backed tape version of Voltoid V-090. This product combines exceptional properties of V-090 in pressure-sensitive tape form for fast, easy application. The tape combines an acrylic pressure-sensitive adhesive and white paper-release liner with V-090 flame-retardant (UL 94 5VA) material. It offers high initial adhesion (tack) and good shear properties, making it ideal for electric motor coil wraps. It is one of only a few tapes that meet current and future UL Safety standard 507 (19.6 a-f) and is listed on UL file number QMTS2.E215806. With a relative temperature index (RTI) of 115°C for .015" material and 140°C for .030" material, the flame-retardant tape is ideal for applications with mid-range operating temperatures and high flammability risks.

The tape offers good dielectric strength and tensile strength, with fair resistance to ultraviolet light. Its shelf life is 12 months when stored unopened in its original container at 21°C and 50 percent relative humidity.

ISI-507 is available in roll and sheet form, .015" and .030" thick, in custom slit widths up to 40 inches.

Characteristic	ISI-507
UL Flammability Rating	94 5VA
UL File Number	QMTS2.E215806
Relative Temperature Index	
.015" thickness	115°C
.030" thickness	140°C
Glow-Wire Ignitability	900°C
Dielectric Strength	120 V/mil
Tensile Strength	
MD	25 psi
CD	14.6 psi
Adhesive	Pressure Sensitive Acrylic
Release Liner	White Paper
PET Film Thickness	.0005"

**Interface**  
Performance Materials

For more information, please visit [www.InterfaceMaterials.com](http://www.InterfaceMaterials.com) or contact an application engineer, [AE@InterfaceMaterials.com](mailto:AE@InterfaceMaterials.com).

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