Polyonics Announces Expansion of Its PolyFLEX Flexible Substrates; New Materials, Colors, Thicknesses, Configurations and Functionalities

Polyonics has greatly expanded its PolyFLEX™ line of flexible substrates in terms of size, function and performance. The new materials include ultra thin (13 μm) amber and black polyimide films, a variety of white, clear and matte black top coats, a new harder and more durable white top coat—aimed at high temperature laminations—and a variety of high performance films with antistatic and flame retardant functionalities.

Westmoreland, NH (PRWEB) March 05, 2013 -- The use of flexible and printed electronics in virtually all industries continues to expand. Along with it comes an increased demand by global electronics manufacturers, contract manufacturers and specialty die cut converters for durable and highly printable flexible substrates in micro-thin constructions.

To support this demand, Polyonics has developed a broad line of flexible substrates and films that include ultra-thin polyimide in a variety of thicknesses, colors and coatings. The substrates provide the ideal physical and electrical properties for flexible circuits. They are designed using polymer coating technologies developed for the extreme temperatures and harsh environments found in PCB manufacturing. The coatings allow printing with conductive, semi-conductive and resistive inks via Flexo and Screen printing. Along with printability, these constructions can also provide thermal management, electrical isolation, the dissipation of electrostatic charges—to help prevent ESD in static sensitive devices (SSD)—and fire retardant options.

Polyonics, PolyFLEX and Polyimide
Polyimide is the preferred material for applications requiring a high degree of dimensional stability after exposure to extreme temperatures (up to 300°C). In addition, polyimide offers a high resistance to chemicals and is light weight and flexible. These properties, combined with polyimide's superior electrical properties make it an ideal substrate. However, printing directly on polyimide has always been a challenge due to its poor ink wetting and adhesion properties. Corona treating polyimide is sometimes used, but with little success.

PolyFLEX flexible substrates take full advantage of polyimide’s unique characteristics plus include proven Polyonics clear, white and matte black printable coatings. These polymer coatings have been evaluated by leading conductive ink suppliers as providing increased ink receptivity, superior ink adhesion and high resolution printing. The PolyFLEX formulations and coatings are the most durable, highest resolution and most printable polyimide films available on the market today.

PolyFLEX Product Line
PolyFLEX substrates are available in thickness of 13 μm (0.5 mil), 25 μm (1 mil), 50 μm (2 mils) and 125 μm (5 mils) and come in the traditional amber polyimide plus black polyimide and matte black coated amber polyimide. All Polyonics substrates are all REACH and RoHS compliant with the flame retardant versions being tested to UL94 VTM0 and the antistatic products having surface resistances between 10^4 and 10^9 Ohms—the heart of the dissipative zone—to help protect SSDs.

Typical printed electronics applications include:
• Electrical Circuits
• Portable Devices
PolyFLEX flame retardant films can provide,
• Isolation of devices and components from external heat sources
• Halogen free UL94 VTM0 tested flame retardant protection
• Static dissipative performance with surface resistances of 10^4-10^9 Ohms
• Dimensional stability at high temperatures
• High dielectric strengths
• Ultra-thin constructions

High Opacity Films for Optical Devices
The pain points associated with optical devices involve minimizing light leakage and maximizing light reflectivity. These two issues can sometimes be required to work in parallel as is the case with some LED applications. In this case, being able to satisfy both requirements with a single film not only improves the product's performance, but its operational efficiency as well.

PolyFLEX substrates include both high opacity versions as well as constructions that are both highly opaque and highly reflective. The films have found success in a variety of optical devices among them cameras, optical encoders and LEDs.

PolyFLEX high opacity films can provide,
• Very low (<2.5) optical transmission densities
• Minimal light leakage
• Highly reflective white top coats
• Antistatic and/or halogen-free flame retardant protection
• Ultra-thin constructions

PolyFLEX Polyimide (PI) Flexible Substrates

XF-100: 25µm amber PI, clear top coat
XF-101: 50µm amber PI, clear top coat
XF-102: 125µm amber PI, clear topcoat
XF-103: 25µm amber PI, white top coat
XF-104: 50µm amber PI, white top coat
XF-105: 125µm amber PI, white top coat
XF-106: 25µm black PI, white top coat
XF-107: 25µm amber PI, high temp white top coat
XF-108: 25µm amber PI, matte black top coat
XF-109: 13µm amber PI, matte black top coat

For more information on Polyonics PolyFLEX flexible substrates and films, please contact Dave.Genest(at)polyonics (603.903.6327)
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