



News Release

Borealis[®] LED lamps – brightness comparable to traditional light bulbs with less energy usage

Bayer MaterialScience LLC's new polycarbonate grade offers high light transmittance and UL flammability rating properties for LED lenses

Pittsburgh, September 16, 2010 — Replacing a long-time fixture isn't easy. But PolyBrite's Borealis[®] LED (light-emitting diode) lamps featuring Bayer MaterialScience LLC's Makrolon[®] polycarbonate plastic make it a snap to switch from an energy-sapping incandescent light bulb to energy-efficient, eye-pleasing and impact-resistant LED technology.

Bayer MaterialScience's Makrolon[®] FR7067 polycarbonate plastic plays a key role in enabling Borealis[®] A19, B10, R20, PAR30 and PAR38 LED lamps to achieve maximum brightness and improved energy efficiency – up to 90 percent less energy consumption – than traditional lighting with no radiant heat or ultraviolet (UV) rays.

The flame retardant plastic material exhibits outstanding optical properties and meets the Underwriters Laboratory UL-94 V0 flame rating at 1.5 mm while also offering light transmission of about 89 percent. By comparison, most traditional flame retardant polycarbonates meet this key flammability rating at a thicker 3.0 mm. Using Makrolon FR7067 will also help manufacturers meet the new UL-8750 Standard for Safety for non-class 2 and direct-connected LED lighting, as the new standard requires a V1 rating for lenses and optics, which V0 rated materials also meet.

The Makrolon grade was developed for manufacturing injection-molded covers of LED lamps. The covers serve as both an UL-approved circuit enclosure, and as

a lens – modifying the light path by either focusing or scattering the light depending on the application, and by not blocking as much light as other materials. The higher light transmittance also allows the PolyBrite technology to use fewer LEDs, according to PolyBrite.

“I have always had success with Makrolon polycarbonate resin and I knew that we could count on the material to consistently meet our needs,” said Carl Scianna, president of PolyBrite International and inventor of PolyBrite™ technology. “Makrolon polycarbonate plastic is a superior choice because of its high impact strength and glass-like transparency, among the many other benefits it offers.

“Experts from Bayer MaterialScience have been and continue to be a great asset, providing support to our company as we rapidly move forward developing our innovative LED solutions,” Scianna said.

Borealis lamps are used in a variety of general lighting applications including residential, commercial and retail areas. Each lamp offers an eco-friendly, energy-saving alternative to incandescent or compact fluorescent light (CFL) bulbs. The Borealis® A19, B10, R20, PAR30 and PAR38 LED lamps that feature Makrolon polycarbonate plastic provide brightness comparable to incandescent lamps, but with reduced glare and improved shock and vibration resistance. The color and the quality of light can be tuned for specific applications, according to PolyBrite.

Scianna explained that by using Bayer MaterialScience’s plastic, Borealis lamps are impact-resistant and virtually unbreakable, resulting in significant reduction in maintenance costs, without burdening the environment and future with hazardous materials and unnecessary gas emissions associated with CFL and fluorescent lighting. Additionally, they are the only warranted lamps for an industry high 50,000 hours of operation as compared with the life span of a CFL with 6,000 hours or 1.5 years, or an incandescent lamp that lasts 1,000 hours or 3 months, he added.

The Borealis line is designed with dimming capabilities and fits into standard fixtures. The LED lamps and lighting systems provide superior performance and

efficiency through advanced technologies, proprietary design, and thermal management, ensuring reliability and longevity of the Borealis line of products.

“Our latest flame retardant polycarbonate plastic provides a transparent, UV-stabilized material that not only meets key industry guidelines and regulations but does so with a thinner profile and environmental benefits, too,” said Gerry DiBattista, market segment leader, IT, Electrical/Electronics Polycarbonates, Bayer MaterialScience LLC. “We value our close working relationship with PolyBrite experts to help advance their LED products.”

Makrolon FR7067 polycarbonate is currently available in North America and Asia. It will be available in Europe, Middle East, South America and Africa at a later date.

Bayer MaterialScience LLC is one of the leading producers of polymers and high-performance plastics in North America and is part of the global Bayer MaterialScience business with approximately 14,300 employees at 30 production sites around the world and 2009 sales of 7.5 billion euros. The company manufactures high-tech polymer materials and develops innovative solutions for products used in many areas of daily life. The main segments served are the automotive, electrical and electronics, construction, medical, and sports and leisure industries. Sustainability is central to Bayer MaterialScience LLC’s business and is based around the key areas of innovation, product stewardship, excellence in corporate management, social responsibility and respect for the environment.

PolyBrite International, Inc. has established itself as an innovative global LED lighting technology company since 1995. PolyBrite designs, develops and maintains complete control in manufacturing solid-state lighting products, creating LED lamps, Street Lighting, Panel and Tube Lighting and complete Signage lighting systems under its Borealis® Lighting brand. The Borealis brand of products utilizes PolyBrite’s proprietary polymer technology and patent pending designs, bringing the energy efficiency, environmental sustainability and economic advantages of LED technology to the marketplace.

“Borealis” is either a registered trademark or trademark of PolyBrite International, Inc., in the United States and/or other countries.

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For more information about Bayer MaterialScience LLC's Makrolon® polycarbonate resin, call 1-800-662-2927, e-mail PCinfo@bayer.com or naftainfo@bayerbms.com or visit www.bayermaterialsciencenafta.com.

For more information about PolyBrite's Borealis brand of products, call 1-800-320-3801 or visit www.polybrite.com or www.borealislighting.com.

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Bayer MaterialScience LLC's Makrolon® FR7067 polycarbonate plastic plays a key role in enabling Borealis® LED lamps to achieve maximum brightness and improved energy efficiency – up to 90 percent less energy consumption – than traditional lighting with no radiant heat or ultraviolet rays. Pictured clockwise from upper left hand corner is the Borealis® A19, R20, B10 and PAR38 LED lamps.