CASE STUDY

USHIO Selects **SABIC's ULTEM™ Resin** for its Far UV-C Disinfection Module

THE CUSTOMER

Established in 1964, **Ushio Inc.** is a leading manufacturer of light sources (such as lamps, lasers, and LEDs) ranged from ultraviolet to visible to infrared rays. Ushio produces optical equipment and cinema-related products that incorporate these light sources. The company also makes products for the electronics field (such as semiconductors, flat panel displays and electronic components) and the visual imaging field (including digital projectors and lighting). In recent years, Ushio has become involved with the life science industry, including medical and environmental applications.

HIGH PERFORMANCE SOLUTION NEEDED TO ADDRESS UV-C REQUIREMENTS

Ushio's new disinfection module with Care222 technology, uses Far UV-C filtration system and operates at a peak wavelength, 222nm. The wavelength is known not to penetrate past the outer layer of our skin and eyes. They were challenged to identify an advanced material that could maintain excellent mechanical strength, demonstrate flame retardant properties and keep surface appearance under harsh Far UV-C (222nm) light exposure.

SABIC delivered a comprehensive solution for the inner housing component of the Far UV-C module which included ULTEM™ 1000 resin, a high performance polyetherimide (PEI) material that met Ushio's stringent requirements, and material validation support from SABIC's technology center in Moka, Japan.

ULTEM 1000 resin met stringent requirements for the Far UV-C module inner housing

"New disinfection technologies are important for public safety. We are pleased to collaborate with Ushio to help them bring this innovative product and Far UV-C filtration technology to the industry by providing our ULTEM resin which can withstand the environment around the light modules. To better facilitate our customers' material evaluation and data generation, we have installed new UV-C testing equipment for UV-C irradiation (covering 222nm and 280nm) testing at our Moka technology center. We will continue our investment to support customers' growth and business vision around further UV-C technology adoption."

Scott Fisher
Director, Business Management,
ULTEM resin & Additives, Specialties, SABIC

KEY FEATURES OF ULTEM™ RESIN FOR THE FAR UV-C MODULE:

- Long-term heat resistance (RTI>170°C) withstanding UV-C exposure
- Color and transparency retention, less deposit via UV-C exposure compared with other high heat polymers
- Outstanding dimensional stability at a wide temperature range, as well as improved balance of mechanical strength and ductility, which could enhance reliability and extend the usable life of the Far UV-C light
- High flow capability for greater design freedom and cost-efficient injection molding of complex components
- Inherent flame retardant performance, without adding any flame retardant agent, achieved UL94 V-0 performance

Ushio's filtered Far UV-C disinfection light, Care222 i series with the Far UV-C module installed, is used in hospitals, offices, stores and other facilities.

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