Applications

Our products are used in various segments of the photonics industry and the bio-photonic industry. Customers in the photonics industry find that our low refractive index materials are useful in improving the efficiency of devices such as fiber combiners and couplers. The low refractive index enables larger numerical apertures. This is important to overcome the un-avoidable imperfections in the splicing or coupling points. These imperfections cause increased light loss. The bigger numerical aperture enabled by our products (such the 1.33 index MY-133) enables collection of light even at higher incidence angels. This improvement of the critical angel compensates, to some extent, for the loss caused by the imperfections. This feature is especially important in high power applications. Indeed, the first popular use of the MY-133 was for the pump power combiners of high power fiber lasers. In Bio-photonics, we see a significant demand for our MY-133 and MY-133MC, due to their 1.33 refractive index, which matches the refractive index of water. This feature offers new applications in micro-fluidics, bio-sensors, and microscopy.

Fiber laser applications

MY-133 is used as an encapsulation material for fiber laser combiners. The material is used for both high power fiber lasers and medium power fiber lasers. The use of MY-133 reduces light losses which are attributed to the imperfect geometry at the junction spots.

LCD LED Backlight Applications

The LCD backlight industry is in transition now from the established cold cathode technology to LED. While the jury is out on the question of Mixed RGB Vs. White LEDs, it does seems that a switch to LED back-lighting is beginning to take place. The conduction of the light from the edges, through the 180 degree turn common in RGB backlighting, is done through a polymer waveguide. MY Polymers believes that the MY-133 may have advantages as a cladding material for the backlighting waveguide. The switch in LCD back-lighting technology is happening now. MY Polymers believes that MY-133 could be a competitive waveguide cladding material.

Applications of MY-145 to MY-147 Optical Adhesives

On the higher end of our low index optical adhesives, MY-145, MY-146 and MY-147, with refractive indices of 1.45, 1.46 and 1.47, respectively, offer superior adhesion and mechanical properties. These are used mostly for refractive index matching of the two joined substrates. Typical applications include cases where a strong Glass to Glass adhesion is required.

Anti reflective coatings

Thin coatings of 1.33 materials are suitable as anti-reflective coatings over glass and plastic substrates. The moisture cured version MY-133MC is particularly suitable for thin layer coatings.

EOC

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