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Mitsui Chemicals, Inc.

Mitsui Chemicals Develops SunSensors™ MR™ series, the World's First High Refractive Lens Materials Containing Photochromic Dyes

Mitsui Chemicals, Inc. (TOKYO: 4183; President & CEO: Tsutomu Tannowa) announced the successful development of SunSensors™ MR™ series, the world's first high refractive index lens materials containing photochromic dyes.

Mitsui Chemicals is the world-leading manufacturer of thiourethane based materials for ophthalmic lenses. MR™ series has superior characteristics of a high refractive index: clear visibility, high mechanical strength and durability, and flexible design. It has been adopted by lens manufacturers worldwide as the global standard for thin and light-weight ophthalmic lens materials.

In order to enter the field of photochromic lens materials, which has shown remarkable growth on a global scale, Mitsui Chemicals acquired SunSensors™, photochromic lens materials with refractive index of 1.55, acrylic-based materials, from Corning Incorporated, USA, in May 2014, and has developed SunSensors™ business. At the same time, Mitsui Chemicals has pursued the further enhancement of photochromic lens performance.

It has been considered chemically difficult to incorporate photochromic dyes into MR™ series lens, a thiourethane-based lens and achieve sufficient photochromic performance when exposed to ultraviolet light. However, Mitsui Chemicals has succeeded in developing SunSensors™ MR™ series, photochromic lens materials that maintain the characteristics of MR™ series while providing excellent photochromic performance. The world's first lens material has superb photochromic performance with high response speed owing to desirable structure shift of photochromic dyes. This was achieved by expertise of our original dispersion technology produced by combining nanotechnology with our capability of developing ophthalmic lens materials that our group has accumulated over many years. With this new product, it is possible to produce photochromic lenses using existing lens casting processes without diminishing the optical transparency and mechanical strength.

As a result, Mitsui Chemicals will expand a new product lineup based on MR™ series with a refractive index 1.60 and 1.67, in addition to the conventional SunSensors™ with a refractive index of 1.50 and 1.55.



This is the image that the color changes of SunSensors™ MR-8™ lens when go back to indoor.

Applying this innovative technology, Mitsui Chemicals aims to provide photochromic and other various functions to transparent optical materials such as ophthalmic lens materials, which will provide further value to society.

Taking this opportunity, Mitsui Chemicals will update the SunSensors™ logo. The phrase “by Mitsui Chemicals” will be added under the existing logo for SunSensors™, which suggests that our innovations in ophthalmic lens material technology will support the SunSensors™ brand and renew it. Moreover, by expanding the line-up of the photochromic lens materials, Mitsui Chemicals will expand sales of the SunSensors™ brand not only in the conventional market, but also on a global scale by leveraging our customers and sales network.



In response to the diversified needs of eyeglass users, our group has globally provided eyeglass lens materials with a low to high refractive index, as well as coating materials that are ideal for each lens. Above all, MR™ series, our world-leading thiourethane eyeglass lens material, has the combination of the superior characteristics of a high refractive index, namely clear visibility, high mechanical strength and durability, and flexible design, and has been adopted by lens manufacturers worldwide as the global standard for thin and lightweight eyeglass lens materials. In addition, Mitsui Chemicals is working on improving “Quality of View” through the use of lens materials with enhanced functions, wavelength control technology and other peripheral technologies, and will continue to propose and provide further functions and values.

For more information on our High Refractive Index Lens Material MR™ series
<http://www.mitsuichem.com/special/mr/index.htm>

For more information on SunSensors™
http://jp.mitsuichem.com/service/pdf/sunsensors_e.pdf
<http://www.mitsuichem.com/service/healthcare/vision/sunsensors/index.htm>

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