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Mitsui Chemicals to Launch New Elastomer with Controlled Crystalline Structure in Nano-order

Already widely engaged in the manufacture and sale of elastomers, Japan's leading chemical company, Mitsui Chemicals, Inc. (MCI) has decided to launch a new line of alpha-olefin-based elastomers, made using metallocene catalysts, with the crystalline structure being controlled in nano-order, under the NOTIO™ trade name, the company announced today. A family of soft polymeric materials, elastomers are used for applications such as automotive, packaging and construction materials.

NOTIO™ will become commercially available in November this year, to be manufactured at one of the existing plants at MCI's Ichihara Works, east of Tokyo, after minor modifications of the plant, with the use of the company's proprietary metallocene catalyst technology. The new elastomer is projected to achieve the annual sales of at least ¥1 billion by Fiscal 2008.

The newly-introduced NOTIO™ is the unprecedented alpha-olefin-based elastomer, which has its crystalline structure controlled in nano-order by leveraging the characteristics of metallocene catalysts. Whereas the conventional elastomers had their crystalline size in micron ($\mu\text{m}=10^{-6}\text{m}$) order, the new elastomer has succeeded in controlling its structure in nano ($\text{nm}=10^{-9}\text{m}$) order. With this success, NOTIO™ has achieved better performance balance in respect to transparency, heat resistance (70 C ° higher at softening point), flexibility and rubber elasticity, which has been difficult to fulfill with the conventional elastomers. Thus, the applications of NOTIO™ not only as modifiers but also as main materials have been significantly expanded.

Being used for main materials, NOTIO™ is prospected for the application for the protection films of electronic and optical parts as well as for a whole variety of sealing materials, owing to its superior characteristics in transparency, heat resistance, flexibility, rubber elasticity and scratch resistance, which have been realized by nanostructure control. Also, as modifiers, the new NOTIO™ exhibits its groundbreaking characteristics, that is, when used as an impact modifier for polypropylene, the blend performs impact resistance and scratch resistance at high levels, without impairing its transparency.

Furthermore, as modifier applications, the heat-resistance property of NOTIO™ allows the use for the high-performance films for food packaging, and its scratch-resistant characteristic is exploited for the skin materials for automotive and construction parts. MCI is actively pushing ahead with expanding the field of applications for NOTIO™ in order to nurture the novel elastomer as the next-generation key product of its elastomer business.

The background of the launch of NOTIO™ this time is MCI's strategic focus on further expansion and growth in the Performance Materials sector under the company's latest Medium-term Business Plan for Fiscal 2004 through 2007.

Following the previously-introduced TAFMER™ XM Series, the product lineup of MCI's elastomer business, which plays a leading role in the Performance Materials field, has been even more fully organized through the latest addition of NOTIO™ this time.

MCI intends to aim at expanding and growing its businesses through creating the state-of-the-art polymer materials with catalyst technology and introducing high-quality products to the market.

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