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Mitsui Chemicals, Inc.

Mitsui Chemicals Receives Incentive Award for STABiO™ as Part of 19th GSC Awards

An eco-friendly polyisocyanate offering high performance

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) has received an Incentive Award as part of the 19th GSC Awards*¹ run by The Japan Association for Chemical Innovation (JACI; Chairman: KOBORI Hideki). The award was given for Mitsui Chemicals' development of both 1,5-Pentamethylene diisocyanate (STABiO™ PDI™) – the world's first bio-based isocyanate – and a polyisocyanate hardener made as a derivative of this.

*¹ The GSC Awards are used to acknowledge individuals and organizations who have made excellent contributions to the pursuit of green and sustainable chemistry (GSC).

http://www.jaci.or.jp/english/gscn/page_04.html

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- Name of Award: The 19th (2019) Green and Sustainable Chemistry Award (Incentive Award)
 - Awarded Research: Development of Polyurethanes Using Novel Bio-based Isocyanate and Its Derivatives
 - Prizewinners: Mitsui Chemicals, Inc.
 - YAMASAKI Satoshi, Currently on secondment
 - NAKAGAWA Toshihiko, Senior Researcher, Synthetic Chemicals Laboratory, R&D Center
 - SHINDO Atsunori, Senior Analyst, R&D Planning & Coordination Division
 - SASAKI Masaaki, Director, Fine Chemicals Manufacturing Department, Omuta Works Tianjin Cosmo Polyurethane Co., Ltd.
 - MORITA Hirokazu
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From left: SASAKI, SHINDO, NAKAGAWA, YAMASAKI

Product name	STABIO™
Product description	1,5-Pentamethylene diisocyanate (STABIO™ PDI™) and a polyisocyanate hardener made as a derivative of this
Characteristics	<ol style="list-style-type: none"> 1. High reactivity compared to 1,6-Hexamethylene diisocyanate (HDI), reducing curing time by approximately 25 percent 2. Improves chemical resistance, gloss and abrasion resistance for paints and adhesives 3. Non-yellowing 4. 70% biomass (PDI™) 5. In CO2-equivalent terms, reduces greenhouse gas emissions by approximately 20 percent (based on life cycle assessments of the derivative versus an existing product manufactured by Mitsui Chemicals)
Main applications	Automotive and plastic coatings, adhesives, etc.

With STABIO™, Mitsui Chemicals has developed the world's first bio-based isocyanate PDI™ and polyisocyanate hardener using this. STABIO™ is used in paints and adhesive products, granting chemical resistance, abrasion resistance and gloss to a level not found with conventional polyurethane materials.

The high reactivity of STABIO™ allows for curing at lower temperatures and shorter times, leading to increased energy efficiency. Being bio-based also makes the material environmentally friendly. Development is now advancing for new applications that require materials with unique textures – including a product that is lightweight but strong and transparent, as well as a gel with unique softness.

Going forward, Mitsui Chemicals will work to popularize STABIO™ as it looks to help bring about a society that gets maximum use out of renewable resources.

■ For more information on STABIO™:

<https://jp.mitsuichemicals.com/en/service/packaging/coatings/stabio/index.htm>