

DENKA Receives Award for the Development of TEMPLOC Temporary Fixing Adhesive

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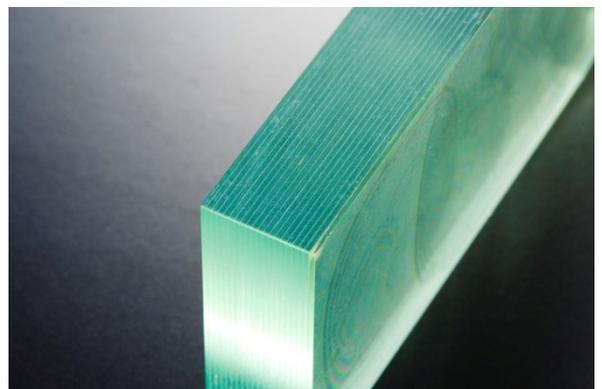
DENKA (president: Shinsuke Yoshitaka) hereby announces that the Society of Polymer Science, Japan (SPSJ) has granted the Company its fiscal 2012 Award of the Society of Polymer Science, Japan (Technology Category) for the innovative technology that created TEMPLOC (project title: Development of the Next Generation Temporary Immobilizing Agent for Electronics Process). The awards ceremony will be held during the SPSJ's 62nd Annual Meeting on May 30, 2013, at the Kyoto International Conference Center.

The SPSJ, a public interest incorporated association founded in 1951, aims to facilitate the advancement of polymer science and technologies in Japan by commending innovative research projects and technologies that demonstrate outstanding achievement.

This year's award was given in recognition of DENKA's unique R&D efforts, which have led to the creation of a novel temporary fixing adhesive for application in a laminated-glass cutting method used to process hardened glass for smartphones. This invention was highly evaluated by the SPSJ for its potential to bring about technological innovation in electronics processing and environmental load reduction.

1. How We Developed TEMPLOC Temporary Fixing Adhesive

DENKA has been involved in the development and sale of industrial adhesives for about half a century. For much of that time, its R&D focus was solely on the creation of ever stronger adhesives. Recent trends toward highly functional electronic materials, however, have prompted DENKA to address the growing need for adhesives that protect such materials and are easily removed. In 2005, DENKA thus began to work on designing a temporary fixing adhesive, a product requiring an entirely new R&D concept.



In developing this adhesive, DENKA began with a fundamental review of the composition and hardening mechanisms of existing adhesives, aiming to striking a balance between two contradicting performance requirements, namely, adhesiveness and removability. DENKA then went on to develop an adhesive that cures quickly, boasts improved chemical and heat resistance (properties essential for

ensuring sufficient strength during the cutting process), and is easily peeled off in a film with the application of hot water, ensuring the electronic materials being processed are not damaged.

DENKA thus succeeded in developing an adhesive that eliminates the need for organic solvents, which are indispensable to removing conventional wax-based temporary fixing agents. This epoch-making feature is expected to contribute to labor savings and the improvement of the work environment while considerably reducing the environmental impact of treating waste cleaning liquid.

2. Applications of TEMPLOC

TEMPLOC is drawing growing interest as a temporary fixing adhesive for use in the processing of hardened glass for smartphones. Specifically, it is increasingly playing an essential role in the cutting process for touch screen glass, which is difficult to cut using conventional machining methods.

TEMPLOC enables the use of a “laminated-glass cutting method” wherein multiple glass panels are stacked using the product to fix them together and to protect exposed surfaces during cutting. This ensures the glass is not weakened by chipping while significantly improving productivity and yield ratio. Looking ahead, DENKA will seek to expand the applications of this product even further.



3. Strengthening the Solution Businesses to Achieve the DENKA100 Management Targets

In addition to the material development and sale of temporary fixing adhesives, DENKA is also involved in solution businesses aimed at supporting the full range of glass processing through such activities as the provision of technical guidance and the sale of processed products. To achieve the goals of the DENKA100 management plan, DENKA will pursue business operations attuned to market needs, thereby helping customers to resolve technical issues. At the same time, DENKA will seek to contribute to society through the provision of products that facilitate environmental load reduction.

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Note: The DENKA Group’s TEMPLOC business has been consolidated within DENKA ADTECS CO., LTD., a Group subsidiary that aims to provide one-stop solutions through the sale of temporary fixing adhesives, glass processing devices and processed products as well as other relevant services.