

Toppan Printing Develops Barrier Film Compatible with Digital Printing

New grade of GL BARRIER developed as world's first transparent barrier film enabling digital printing on retort packaging requiring high barrier performance.

In collaboration with HP Inc. (hereafter HP; head office: Palo Alto, California, U.S.A.), Toppan Printing Co., Ltd. (hereafter Toppan Printing; head office: Chiyoda Ward, Tokyo; President & Representative Director: Shingo Kaneko), has leveraged its transparent barrier film GL BARRIER^{*1} to develop a new product for retort packaging, GL FILM Digital Printing Grade, which is compatible with HP's cutting-edge HP Indigo digital presses for flexible packaging. Toppan Printing will launch sales of this product in late-September 2017, targeting markets in Japan and overseas for food sold in retort pouches, such as pasta sauces and beans. This is the world's first transparent barrier film for retort packaging on which digital printing is possible.

GL FILM Digital Printing Grade is the world's first barrier film to enable digital printing, which facilitates the provision of a wide range of package types in small lots, while maintaining the same oxygen and water vapor barrier performance as conventional films after retort sterilization, something which has until now been considered difficult with transparent barrier film. Introducing packages using this film will enable distributors and manufacturers to provide high-value-added products catering to the diverse needs of consumers.

This product will be on display at both the Toppan (South Upper-8244) and HP (South Lower-6507) booths at PACK EXPO Las Vegas from September 25 (Mon) to 27 (Wed) at the Las Vegas Convention Center.



Samples of GL FILM Digital Printing Grade (left) and examples of its use (right)

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■ Background to development

Measures to reduce food loss and achieve sustainability have become essential in today's society. This also means an increase in demand for barrier films, which can help to address such social issues in the area of product packaging.

In the manufacture of product packaging using flexible packaging materials, large volume production using dedicated machinery has become commonplace due to factors such as cost considerations. However, diversification of consumer lifestyles and the increase in the number of foreign visitors to Japan in recent years have meant an expanded role for packaging as the “face” of the product.

To address this challenge, Toppan Printing launched the Toppan FP Digital Solution^{*2} in 2016. This service provides optimal flexible packages for the production of diverse products in small lots and has been adopted for a large number of items, including snacks, food, gifts, and novelty goods.

Toppan Printing has now developed a new grade of GL BARRIER compatible with the HP Indigo Pack Ready Coating^{*3} converting technology. This has enabled the provision of the world's first transparent barrier film for retort packaging on which digital printing is possible, something which has traditionally been difficult to achieve.

■ Features of GL FILM Digital Printing Grade

•Digital printing is possible

A transparent barrier film for retort packaging to which digital printing can be applied has been developed by combining Toppan Printing's vapor deposition and material design technologies with the HP Indigo Pack Ready Coating post-print solution.

•The same barrier performance as conventional products

Using Toppan Printing's vapor deposition and coating technologies, it has been possible to maintain the same heat resistance and oxygen and water vapor barrier performance demonstrated by retort grades of Toppan's conventional GL BARRIER films.

•Multiple package designs can be manufactured because cylinders do not need to be prepared

Conventional flexible package printing involves large volume manufacturing requiring the engraving of printing cylinders. However, since such cylinders are not needed for digital printing, packages with multiple designs can be produced.

•Application of information processing technology enables the same quality as gravure printing

By applying information processing technology honed over the years to digital printing, it has been possible to produce eye-catching graphics with the same quality as gravure printing.

■ Future targets

Toppan Printing plans to expand the applications of GL FILM Digital Printing Grade to the food, medical, pharmaceutical, and industrial materials sectors, where resistance to high temperatures and humidity is required. Toppan will also advance the development of products with even higher barrier performance and long-term reliability for the growing transparent barrier film market, and is targeting sales of approximately ¥130 billion for its entire transparent barrier film business in fiscal 2020.

***1 GL BARRIER**

GL BARRIER is the collective term for a range of transparent barrier films from Toppan Printing that have the world's highest level barrier performance. Stable barrier performance is achieved through a multi-layer structure combining original coating layers and high-quality vapor deposition layers. GL BARRIER's numerous outstanding features have enabled it to gain an excellent reputation, and it is used in a wide range of fields, from food to the medical, pharmaceutical, and industrial materials sectors.

***2 Toppan FP Digital Solution**

This solution enables the provision of not just one fixed design but multiple variations for flexible packaging-based product packages for items including snacks, food, and toiletries. For example, designs can be different depending on the region or season, or multiple different messages can be displayed. This makes it possible to provide high-value-added products catering to the diverse needs of consumers.

***3 HP Indigo Pack Ready Coating**

HP Indigo Pack Ready is a set of game-changing, post-print converting solutions for high performance applications and immediate time to market. Developed and patented by HP, Pack Ready is designed to maximize the value of Indigo digital print for labels and packaging

One of these solutions is Pack Ready Coating, which extends the application range of digitally printed flexible packaging to high-performance flexible packaging applications such as retort.

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