

Grapac Japan introduces HALS™ Film, a totally new UV offset printing film for 3-D graphic images at PRINT® 05.

Grapac Japan Co., Inc. (Tokyo, Japan) exhibits a state-of-the-art micro lens film at PRINT® 05. It's HALS™ Film. This lens film manufactured under the patented process by Grapac Japan, enables an ordinary UV offset printing machine to print 3-D images.

HALS™ Film is the first 3-D imaging process of its kind. The film utilizes a phenomenon whereby your retina visualizes 3-D images due to altered spatial frequencies between the micro lens arrays and a dotted pattern. Unlike other 3-D imaging processes, HALS™ Film does not require the limitation or control of a perceiver's viewpoint for the 3-D image to appear.

Grapac Japan is planning to distribute HALS™ Film for the first time from January 2006. The next exhibition of HALS™ Film will be held in Tokyo at JGAS 2005.

The market scale of 3-D print industry and demands for HALS™ Film

According to our original investigation, the annual market scale of 3-D print industry in Japan is approximately \$100,000,000. Assuming that the ratio of 3-D graphics within the entire printing market is identical internationally, the market scale of 3-D print industry in USA should be \$250,000,000., and that in Europe \$200,000,000.

Needless to say, the figure above is constituted solely by the currently existing 3-D printing technology. When a new technology is introduced, attractiveness of its outcome will widely appeal to consumers, the demand emerges, and the market size of whole 3-D print industry should expand.

An introduction of HALS™ Film should magnify the needs for static 3-D graphics especially in Western nations; patterns popular in the western culture (i.e., the alphabet, stars, and heart) are very suitable to be used as 3-D images with HALS™ Film.

Grapac Japan aims to acquire 15% of the world share within a 3-D print market with HALS™ Film.

Purpose of introducing HALS™ Film at PRINT 05

Grapac Japan has determined to exhibit HALS™ Film for the following three reasons:

- to research 3-D printing market in America and Europe;
- to introduce HALS™ Film and investigate marketability of it in America and Europe; and,
- to find the best partner which can distribute HALS™ Film with delicate service to North America and Europe, and is eager to establish a collaborative relationship with Grapac Japan.

Specifications of standard HALS™ Film to be distributed

Material: Special clear polypropylene
Thickness: 0.3mm or 0.5mm available
Presumed size*: 500mm x 700mm (approximately 19 2/3 by 27 1/2 inches)

*Size of the film is to be determined after further research in U.S.

Recommended system and general requirements for printing companies:

1. A desire to implement 3-D printing services, in addition to possessing technical staff with appropriate skills
2. An offset printing press 28 inches or wider, with UV curing unit installed (and experience in film printing)
3. CTP plate making technology with resolution of 2,000 dpi or better (3,000 dpi highly recommended)
4. Experience in lenticular printing recommended

HALS™ Film is still the beginning of what Grapac proposes.

Grapac Japan is a developer of new graphic design techniques, and with our team of technical experts in this field, we are acutely aware of the attraction and necessity, yet also the difficulty, of the goal of creating effective static 3-D graphic expression. We have taken it upon ourselves to realize this goal.

In spite of recent major progress made in the field of animated 3-D images, research into static 3-D graphic expression is relatively still in its early stages.

Grapac Japan has been researching into this field for more than ten years, and we are now able to facilitate and offer to everyone a new era of static 3-D graphic expression.

Company Overview of Grapac Japan

Trade name	Grapac Japan Co., Inc.
Headquarters	1-1-4 Sumida, Sumida-ku, Tokyo 131-0031
Sales Branches	Ginza, Shibuya, Koji-machi, Gotanda, Tsutsumi-dori (all located in Tokyo)
Production Plants	Kashiwa (Chiba), Mibu (Tochigi)
Representative	Yoshihide Yumoto (President and CEO)
Capital	¥256,300,000. (approximately US\$2,330,000.)
Year founded	1925
Number of employees	185 (as of July 21 st , 2005)
Business fields	printing and packaging, various paper products (i.e., POP, displays), design and DTP, digital contents, board games, and static 3-D graphics
Major customers	Canon, Tomy, Bandai, Softbank BB

For more information please contact:

<p style="text-align: center;">Marketing & Planning Department Grapac Japan Co., Inc. 17-2 Ichiban-cho, Chiyoda-ku, TOKYO 102-0082 JAPAN URL: http://www.grapac.co.jp/eng E-mail: sales@grapac.co.jp</p>
