

Glass Market Trend

Increasing consumer awareness about environmental issues has led to a greater demand for sustainable packaging, motivating manufacturers to make a concerted effort to invest in environmental-friendly packaging. Glass Packaging Market size was valued at USD 51.2 billion in 2020



and will grow at a CAGR of 4.4% from 2021 to 2027 owing to increasing glass recycling rates in conjunction with the eco-friendly benefits of glass. Glass is the leading packaging material for spirits, wines and beer, as well as perfumery, cosmetics and pharmaceutical products.⁽¹⁾

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T.A.O. NEWSLETTER



The Innovative Ink Jet Solution For Glass



Booming Business Field

The demand for personalized and individualized articles is increasing.

This trend can be observed in many areas: packaging, toys, fashion industry as well as household goods of the daily life.

Parallel to the demand, the willingness (readiness) to spend more money for personalized articles is also increasing.

30-50% of the interviewed persons are ready to pay **20%** more for a personalized product.

(According to the Deloitte Consumer Review)

Commerce and industry react on this trend and are continuously looking for new and specific solutions.

The manufacturing process for laboriously decorated haptic glasses

is linked with many pre-press steps and a high energy need in the glassworks companies. Small production lots have been very expensive so far, because they are not profitable. The reason is that an own form has to be produced for each glass object with haptic decoration. The manufacturing process is time-intensive (time consuming) and needs a high planning effort.

Objects which are manufactured this way run through the so-called embossing procedure.

For trending individual glass objects as they are strongly requested during these times in branches like perfumeries and beverage industry (wine cooperatives, liquor producers and breweries), the embossing manufacturing method is not the right choice.

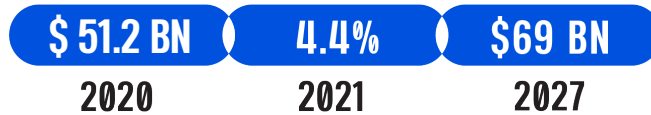


APAC Market Share (2020) : >40%



Europe Market Share (2027) : >30%

CAGR



MARKET VALUE (2027)

>\$11 BN

Food & Beverages Segment

CAGR (2021-27)

>4%

Soda Lime Glass

>3.5%

Borosilicate Glass



"Especially the refinement of glasses offers a big potential for achieving interesting solutions using the most modern technologies". – Tobias Lang, Product Manager Digital Inks at Marabu

"With this solution, Koenig & Bauer and Marabu offer another puzzle stone (element) for the packaging industry in order to master the new challenges popping up in the refinement of packaging". – Tim Schnelle, Sales Manager at Koenig & Bauer Kammann

Image Source : www.pexels.com / www.gminsights.com

Combine Haptic And Colorful Elements



Individualized glass objects of all kinds can be realized in the direct printing process from a single piece up to industrial large quantities. There are no quality losses in the new process. The sharpness of contours by far exceeds the standard of the classically manufactured embossing forms. By a precise

varnish or ink deposit, finest haptic structures can be single-pass printed by Koenig & Bauer printing machines of the machine ranges KAMMANN K15 and K20 and correspondingly hardened. Also big printing templates are possible as it is requested for example for brand logos. Apart from haptic effects, combinations

with colorful elements are also possible so that haptic with visual effects can be combined. All printing steps are fully integrated in the machines. Servo motor movements of the object to be printed as well as of the printing device make the completion and decoration of any glass shapes possible.

Outstanding Properties of Use By Fine-Tuned Knowhow



The varnish was developed in close cooperation between the partners Koenig & Bauer and Marabu. Through this, the new Marabu product has been optimally adapted to the printing process. The decorated glass objects have passed the

standard regulations such as wash, chemical and abrasion resistance with excellent results. This uncomplicated printing process is an attractive alternative to the conventional embossing procedure.



The Advantages of the Marabu Precision Varnish

The new product is a varnish which has been developed particularly for the decoration of haptic structural effects, especially on glass. The precise print makes very laborious and noble appearing designs on glass objects possible - like e.g. on flacons, drinking glasses or bottles. Depending on the number of printed varnish layers, the varnish deposit can be flexibly realized according to the individual customer needs. The use of the precision varnish make the individual and personalized haptic decoration of glasses possible without the need applying expensive forms (templates ?) as they have to be used in the embossing procedure.

The Product Advantages Are Unique

- 1 Outstanding sharpness of the contours
- 2 Printing of finest structures and dots
- 3 Realization of colorful and transparent designs
- 4 Printing of convex and concave structures as well as fast and easy adaptations of the printing process
- 5 Unit costs independent of number of printed objects
- 6 The chosen glass form (template) can be used for countless designs during a single printing process
- 7 No need for a minimum purchase quantity nor for the manufacturing of several glass forms

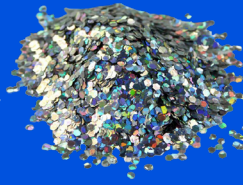
- 8 The precision varnish fulfills all requested demands concerning washing resistance : 500 cycles in industrial washing machines and 50 cycles in household machines

- 9 The varnish also fulfills the challenges regarding the recyclability : the varnish coated on a glass object is oxidized in the glass melt without any residues

Glitter Effects For Glamorous Appearances

The popularity of decorative design on textile to add color and effects this makes decorating with glitter a very trendy choice in recent times. When the glitter is screened on the fabric, there will be an effect for glamorous appearances.

Glitter can be printed in all color.



Whether in rough glitter or in noble, fine mica effect. Glitter have variety of colors and shapes can be selected as needed.

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Glitter for Textile



Important factors affecting screen printing

Fabric mesh

Polyester glitter in sizes from 0.004" to 0.008" are often used. In order to be able to print these, you need a mesh size of at least 3 times the glitter size. The correct mesh guarantees that the rough pigment is really printed and not just sieved out in the stencil.

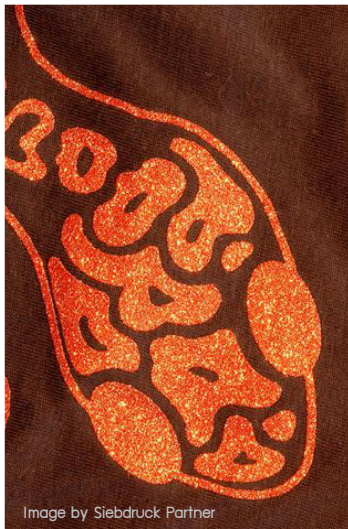


Image by Siebdruck Partner

Stencil

The stencil accounts for 50% of a good print result, so it should be given a lot of attention. In order to achieve an impressive glitter effect, you need a high layer structure with a correspondingly high-pressure shoulder. This can be achieved with thick capillary films.



A diazo copying layer with a high proportion of solids and, depending on the fabric, for example a 2/5 coating (2x print side, 5x squeegee side). It will get the thickness of the glue

Metallic shine

The light reflection on the surfaces of the lamellar metal pigments and the light scattering (superimposition) cause the metallic effect. Depending on the surface and fineness of the pigment, there are different effects. The metallic effect always depends on the brilliance, the particle size, the particle shape and the pigment size distribution. This means: The coarser the pigment and the lower the proportion of fine bronze, the higher the metallic brilliance and the brightness of the bronze with medium opacity. The finer the metal pigment, the higher the opacity with the lower brilliance and brightness in the print result. Here the ratio of the pigment surface area to the proportion of scattering

edges decreases significantly and the metallic luster is lost.

With proper preparation, printing glitter is not too difficult. In practice, the printing of glitter in plastisol color has prevailed. On the one hand, plastisols are easy to process, on the other hand, they enclose the glitter well and offer a wash resistance of 40° and more. Glitter can be mixed into colored tones in order to achieve a "refinement" of the colored tone. More commonly, however, the glitter is added to a transparent base. Here, too, there are no limits to creativity and imagination. However, preliminary tests are recommended to determine the type and amount of glitter.

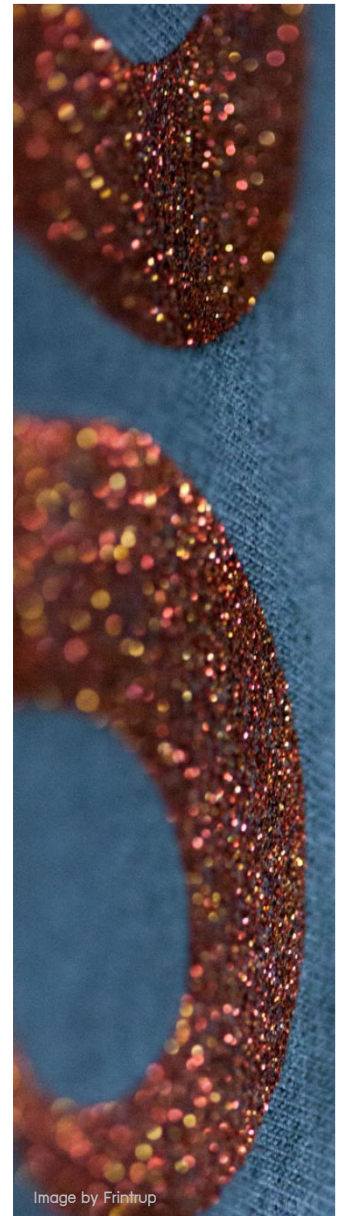


Image by Frintrup



Image by Tifex

T.A.O. has made them fit for glamorous presentations of textiles. T.A.O. offers customer-tailored solutions and supports you concerning technical issues.

Interested in more information please contact
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New release "MAP Water Based Ink for Pad Printing"

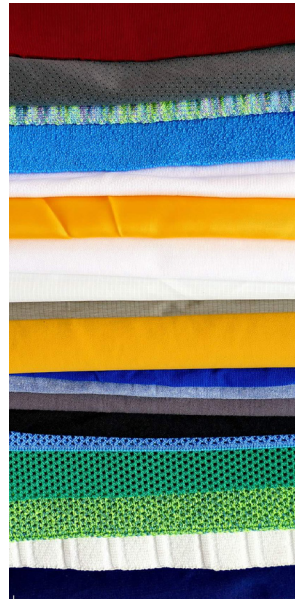


Maqua® Pad MAP is a new formulation of water-based pad printing ink for textiles and toy manufacturers who looking for high safety standards, environmentally friendly.



Substrates

- Textiles, synthetics
- Textiles, cotton
- Wood
- ABS
- PVC, rigid
- Polycarbonate (PC)
- Polypropylen (PP), pre-treated
- Polyamide (PA)
- Polystyrene (PS)
- Coated substrates



Advantages

- 1 Nearly odourless
- 2 PAH Free
- 3 Halogen Free
- 4 Very low VOC values <10%, Standard solvent inks are approx. > 40%
- 5 Low level of solvent contamination
- 6 Less work safety measures required
- 7 None DG (dangerous goods)

MAP for Textiles

A fast, economical, and wearer-friendly alternative to transfer and sew-in labels (tagless printing)

Very flexible, no "cracking" of the ink film, passes all industrial wash tests

Long pot life (48 hr.)
It depends on the environment and the control room during printing.

Highly resistant for washing

And soon also with GOTS certification and ECO PASSPORT, also ZDHC!



MAP for Sensitive applications

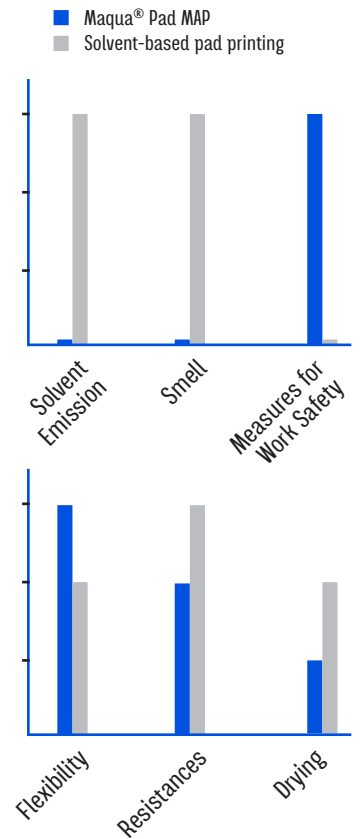
Suitable for applications according to organic textile, lowest PAH values, made without the use of BPA/BPS

No ink residuals

Process

There is no difference in solvent ink printing processes. The same equipment can be used. And the main 2-components are thinner and hardener for textiles.

Comparison Between Maqua® Pad MAP and Solvent-based pad printing



Advice



Stress resistance

Maximum washing resistance is reached if prints are allowed to dry for 2 days at 20 °C.

The ironing resistance of Maqua® Pad MAP is excellent, therefore the temperature resistance of the substrate is crucial.

The textile substrates do not require any special pre-treatment. For materials that are treated with a finishing, preliminary tests are mandatory. For materials that are treated with a finishing, preliminary tests are mandatory.

laser cliche

Laser cliché should be used to avoid rusting of cliché, or if using steel cliché, Anti-Rust Additive can be added as well.

Silicone

If excellent ink transfer is required. You can choose to use oilless silicone.

Control room

To success to best desired there is a must for a controlled room



Water Based Pad Printing in the Environmental Friendly & Safety Trend

The pad printing process by MAP can be easily run with a process that is not different from Solvent based. The same equipment can be used. And it works well with a variety of fabrics such as cotton, polyester, nylon + spandex.

For durability is good, as our test results prove that the water based ink can resistance up to 50 washes in accordance with the AATCC washing standard.

And most importantly from advantages of water based ink such as Nearly odourless, PAH Free, Halogen free, Very low VOC values. Water based ink is an attractive to replace old solvent based ink printing that can respond to the current and future trends that are more environmentally conscious and safety for processes and consumers.



Interested in more information please contact K. Kitiraj Sonso
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Image Source :
www.marabu-inks.com (Maqua Pad MAP)