XAAR CASE STUDY

Unlocking high-viscosity ink development with Marabu and Xaar

Marabu, Germany



Overview

Marabu wanted to expand what was possible in digital ink formulation, particularly for applications requiring durable haptic effects, sharp contours and high-impact jetting. Xaar's Ultra High Viscosity Technology enabled Marabu to develop new digital inks using a wider range of chemistries and materials than traditional low-viscosity inkjet systems allow. The collaboration has helped open new opportunities in decorative printing, including embossed effects on glass bottles and packaging with laydown build heights of up to 3mm.

The client profile

Marabu is a long-established global ink manufacturer with digital inks as one of its core business pillars. The company develops ink technologies for analogue and digital print applications, supporting customers that need reliable performance, colour strength and functional effects.

The project

In conventional low-viscosity inkjet, achieving high image quality, durable effects and process reliability can require complex workflows. Ink manufacturers have historically been constrained by the limited fluid viscosities and chemistries that printheads could jet effectively.

Marabu wanted to explore new ink formulations that could simplify production, improve quality at speed and deliver tactile decorative effects that traditional print processes could not easily reproduce.

The solution

Xaar's Ultra High Viscosity Technology enables a wider range of fluid viscosities and chemistries to be printed at around 100cP at jetting temperature, equivalent to approximately 1000cP at ambient temperature.

This capability gives ink manufacturers a broader development toolbox. For Marabu, it enables high-impact, reliable jetting with sharp contours and the layering of durable, resistant haptic effects.

The implementation

The value of the technology has been demonstrated through collaboration between decorative print machine manufacturer Koenig & Bauer Kammann, Marabu and Xaar. Together, the partners have enabled embossed effects on glass bottles and other packaging.

By combining Xaar printheads, Marabu high-viscosity inks and Kammann's digital print innovation, the partners achieved laydown build heights of up to 3mm without compromising intricate embossing details or sharp contour edges.



The impact

Outcome 1:
Expands the range of materials and chemistries available for digital inkjet ink development

Outcome 2:
Enables durable haptic effects, sharp contours and high-impact jetting

Outcome 3:
Supports embossed effects on glass bottles and packaging with laydown build heights of up to 3mm

"By improving print quality at higher speeds with less ink and energy required, the ability to jet a wide range of high viscosity, high particle loaded fluids is driving change on many levels"

Karl Forbes
Chief Technology Officer, Xaar

Technical highlights

Key capabilities

- Ultra High Viscosity Technology
- High particle-loaded fluid capability
- Sharp contour and haptic effect production

Compatibility points

- Digital ink development
- Decorative packaging and container printing
- Applications moving from analogue to digital production

Deployment notes

- Demonstrated through collaborative development with Marabu and Kammann for decorative printing and embossed effects on glass packaging.

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