

Speciality inks for decorative printing of front panels

Our homes are increasingly digital, and ever-more connected. Household appliances can now “talk” to us and each other, and can be remotely controlled via smartphones. The latest consumer durables are fitted with sophisticated front panels and integrated touch interfaces. This trend creates an urgent need for printing inks that are engineered specifically for the technical challenges associated with printing decorations on these substrates.



Screen printing is ideal for applying decorations to input systems. This method uses either solvent-based or UV-curable inks, and enables diverse colours and effects, in combination with functional layers. This makes it well suited to decorating the reverse (second surface) of transparent plastic and glass

panels for high-quality capacitive input systems. A capacitive touch screen, in contrast to its resistive equivalent, operates without the need for mechanical pressure. The screen is not built from multiple layers; instead it comprises a single plastic panel made from PMMA or PC. Moreover, the overall look-and-feel is more in line with today's tastes.

Capacitive touch interfaces are found in a wide variety of appliances, including washing machines, driers, dishwashers and ovens – and even coffee machines and microwaves. This translates into a growing need for decorative printing of front panels, with a corresponding rise in technology and design challenges. With these requirements in mind, specialist ink manufacturer Marabu has expanded its portfolio for front panel printing.

Marabu's Mara® Panel MPA, a new line of specialty decorative inks, features an outstanding opaque white, plus a deep, non-conductive black developed specifically for printing on the back (second surface) of popular PMMA or PC plastics – both extruded and injection-moulded. The majority of decorative prints for household appliances are in black or white. However, speciality inks are available from Marabu for silver-metallic effects mimicking the appearance of aluminium or stainless steel. Operating panels often include displays for the time, date or machine-function symbols. For these substrates, it is possible to use a combination of Mara® Panel MPA inks and varnishes. These comprise the diffusor and filter products in the Mara® Star SR range. They can be employed for transparently coating the display window within the panel, and are suitable for LED backlighting.

Mara® Panel MPA decorative inks display very high electrical resistance to avoid interference with the input system's functionality. Furthermore, the range has been tested for resistance to water vapour (condensation test of up to 5 hours at 70°C, 100% relative humidity) and to common chemical cleaning agents from leading manufacturers. This demonstrates that the products are not subject to surface irregularities or flaking.

In addition, other visual characteristics, such as crisp edges, excellent flow, white lightness (L value), colour coordinates L^*a^*b value), and high transmission density, ensure long-lasting prints of the type required for consumer durables. In terms of its feedstock materials and hazardous rating, the *Mara[®] Panel MPA* range is state of the art. It is therefore extremely user-friendly in terms of the printing process, and health and safety requirements are less stringent.

In many cases, household appliances feature plastic panels within a metal housing. Marabu offers solutions for the entire device, even if individual components are made from differing materials, i.e. plastic, metal or glass. This mix of materials is becoming more common, as glass fronts are increasingly popular for household appliances. They combine an elegant look with a tough surface that does not easily scratch or soil. For glass panels, Marabu offers its highly resistant, two-component *Mara[®] Glass MGL* and *Tampa Glass TPGL* ink lines. The tried-and-trusted *Ultra Glass UVGL* range is recommended for applications requiring UV-curable inks.

Marabu GmbH & Co. KG



Marabu is a leading global manufacturer of liquid coatings and screen, digital, and pad inks with headquarters near Stuttgart, Germany. Marabu's track record of innovation stretches back to 1859, featuring many industry-first solutions for both industrial applications and graphic design. With its 14

subsidiaries and exclusive distribution partners, Marabu offers high-quality products and customer-specific services in more than 80 countries. Exceptional technical support, hands-on customer training, and environmental protection are core elements of its corporate philosophy. Sustainable business practices are also key to Marabu's vision. These have been implemented through a number of initiatives, with concrete results – and the company is committed to maintaining this course of action in future. Marabu has been certified to ISO 9001 since 1995 and to ISO 14001 since 2003.