



Martin Kremmeter
Laboratory:
UV Ink Systems

UV-CURING INKS FOR TECHNICAL SCREEN APPLICATIONS

Use of UV-curing inks is essential in many fields of printing technology. Speedy curing within seconds is important when using quick running printing equipment.

For more than two decades now UV-technology has been increasingly used for screen applications. Large-format multi-colour equipment for graphic screen printing is only efficient if UV-curing inks are used, as these ink types can be overprinted immediately. Also it is not necessary to wash the screens following stand-still times.

In our previous edition of Screen News we presented UV-curing screen printing inks for graphic applications. In this screen magazine we are focussing on UV screen inks for technical applications.

In graphic screen printing you are not only concentrating on the layout, it is also essential that the prints show mechanical and chemical resistances. Cross hatch tape as well as solvent and abrasion resistance tests are also essential.



With the use of highly functional acrylates we can offer very hard and resistant ink systems which almost achieve the same resistance values as two-component inks. However, this hardness is not always an advantage as ink layers are more brittle. The formulation and production of flexible UV-curing screen printing inks with excellent mechanical and chemical resistances requires expert know-how.

We offer inks exactly matched to the requirements of the printed substrate. Exact co-ordination of choice of ink type and processing is required for optimal

handling and best possible results. Our experienced applications department will assist you in dealing with even the most difficult tasks.

For technical screen applications these outstanding properties of radiation curing inks such as immediate overprintability and further treatment are huge advantages compared to physically drying inks: no drying in the screen, high printing frequencies as well as very good energy efficiency result in a significant reduction of costs per unit compared to conventional solvent-based ink types.

We as an ink manufacturer have been offering a very broad range of different UV-curing inks for years. A range of UV-curing inks for various technical screen printing applications and their main properties are summarized in the following chart.



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APPLICATION	INK TYPE	PROPERTIES
Various plastics	UVU	Ink range UVU is a universal ink system with good adhesion on various plastic materials. The system shows a medium flexibility and is therefore also suitable for printing on foils without the latter becoming too brittle. Chemical resistances are good.
Polystyrene, PVC	UVE	Ink range UVE shows very high chemical resistances and medium brittleness, thus this system shows good suitability for technical stickers, e.g. acid resistant battery stickers or polystyrene signs.
ABS	UV-650018	This ink system shows extraordinary adhesion properties, hardness and resistance on ABS materials and other rigid plastic materials, properties required for printing onto housing materials, writing utensils and panels.
Glass	UVGS	UVGS is ideal for decoration of glass sheets and furniture glass. The addition of adhesion promoter UVGS/HS will result in very high water resistances. This mixture has almost no pot life so that mixtures do not have to be disposed of.
Metals, stainless steel, circuit boards, coated surfaces	UV/K	UV/K shows adhesion on various metals and coated surfaces. This ink type is mainly used for interior decoration of housings, front panels and marking of circuit boards.
Membrane switches	UV-Varnishes	Special adjustments of UV-curing inks for membrane switches such as window varnishes (UV 70/488, UV 70/598-ES) and texture varnishes (UV 70/623, UV 70/635-MT).
Plastic cards	SSM	Solarsmart SSM: Laminable UV-curing ink for credit cards, customer cards and ID-cards.
PP/PE containers, tubes / cartridges / bottles	Various *	We offer various special adjustments for PP and PE tubes and cartridges. Please contact our laboratory for more information.