

Early on, many companies appreciated the very high potential the screen printing process has to offer for various industrial and technical applications. The screen printing process does not only allow permanent marking of various components and production of complex circuit boards and membrane switches for modern machines, but also decoration of metal and plastic panels used for household appliances and other consumables.



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2-COMPONENT SCREEN PRINTING INKS FOR INDUSTRIAL AND TECHNICAL APPLICATIONS

As early as the 60ies and 70ies the electronics industry had discovered the possibilities of the screen printing process. The printed circuit board technology, which allows cost-efficient production of electric and electronic equipment is based on the original screen printing process, even though, meantime most boards are produced by photo technology.

Technical screen printing is a broad field, ranging from production of labels to printing of hollow articles. Labels are often printed by combination of various printing technologies. In the past printers mainly used solvent based or two-component inks, nowadays they often use UV curing inks.

Another broad field of application for the screen process is printing of glass substrates. One example is printing of glass bottles for the cosmetics industry with cost-efficient 2-component inks instead of ceramic inks. Another example is printing of glass sheets for interior applications such as furniture.

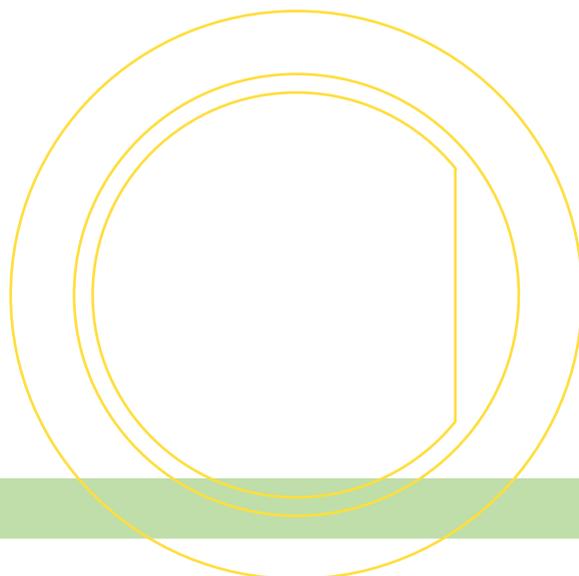
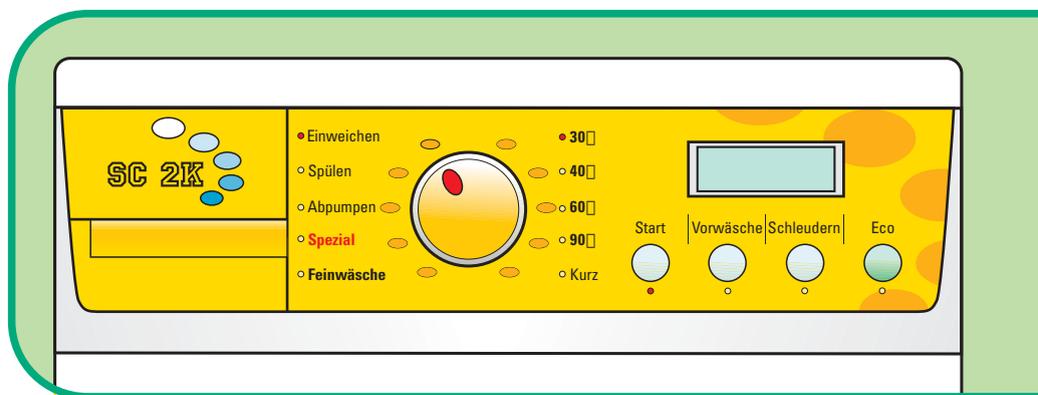
Screen printing also plays a very important role in the production of solar cells where several functional layers are applied by screen process.

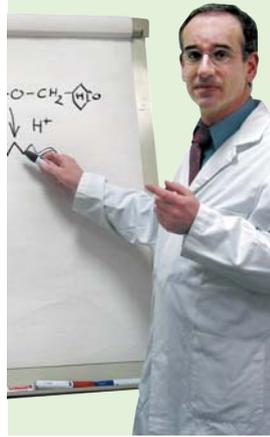
One more example for successful long-term screen applications is the production of traffic signs. In this process special high quality retro-reflecting foils are printed with highly lightfast and weather resistant 2-component screen inks.



Naturally, in this short introduction we could only mention a few special applications. The screen process is used for an astonishingly high number of technical applications. In the following chart we are listing some of our 2-component ink types and their specific properties.

Naturally our laboratory and applications department will always be happy to develop new solutions for the screen process to meet various customer requirements.





INK TYPE

Z

Z/GL

Z/PVC

ZMN

MAIN APPLICATION

Printing of pretreated polyolefines coated surfaces duroplastics

Printing of flat and hollow glass substrates ceramics metals

Suitable for printing of PVC foils

Printing of beer crates made of pretreated polyolefines

ADDITIONAL APPLICATIONS

metals polyamide polyester

duroplastics glass-fibre reinforced plastics

acrylic glass coated surfaces

acrylic glass polycarbonate chrome-plated surfaces

not suitable for polystyrene

PROPERTIES

– = poor
□ = medium
++ = excellent
+ = good

high chemical resistance
very good resistance to filling liquids
variety of suitable substrates

water resistant
dishwasher resistant
very good corrosion resistance
sterilisation resistant

increased resistance against solvents and filling liquids

very good resistance against chemical cleaning agents
hard and scratch resistant

Z 70/114-PVC, protective varnish for automotive stickers

Alcohol resistance

++

++

++

+

Hand sweat resistance

+

+

+

+

Cream resistance

++

+

+

+

Weather resistance

–

–

+

+

Degree of Gloss

glossy

glossy

semi-gloss

glossy

Drying

medium

slow

quick

slow

COLOURS

C-Mix 2000

x

x

x

x

Standard

x

x

x

CYMK

x

x

x

x

PROCESSING

2 component

2 component

1 component / 2 component

2 component

Mixing Ratio

4:1

20:1

10:1

4:1

Type of Hardener

ZH

ZH/GL

ZH

ZH

ZH/02-GL

ZH/N

ZH/N

ZH/03-GL

Thinner

VD 20 / VD 60

VD 10 / VD 20

VD 30

VD 60

Retarder

VZ 25

VZ 20 / VZ 25

VZ 25

VZ 25 / VZ 40

SunChemical®

Coates Screen Inks

ZM	ZE 1690	TZ	YN	Z/DD
Suitable for printing of metals and laminated aluminium boards (e.g. Dibond)	Printing of vulcanised rubber thermoplastic elastomers synthetic fibres	Printing of textile materials made of natural and synthetic fibres leather	Decoration of packaging materials made of pretreated polyolefines rigid PVC and polystyrene	Printing of coated surfaces metals thermoplastics
thermoplastics duroplastics	foamed plastic materials polyurethane	artificial leather polyester, polyamide soft touch surfaces	metals coated surfaces Chromolux thermoplastics	duroplastics pretreated polyolefines
alkaline resistant elastic high weather resistance	high elastic forming resistant	flexible washing resistant good solvent resistance	good resistance against alcohol, water and chemicals large variety of substrates	extremely resistant to solvents extremely weather resistant very high abrasion resistance
–	□	+	+	++
+	+	+	+	++
+			+	++
+	+	+	□	++
glossy medium	semi-gloss quick	satin mat quick	glossy quick	glossy very slow
	x	x	x	x
x		x	x	
x	x	x	x	
2 component 8:1 ZH/N-00 ZH	1 component / 2 component 10:1 ZH ZH/N	1 component / 2 component 10:1 ZH ZH/N	1 component / 2 component 10:1 ZH	2 component 3:1 ZH/N
VD 60 VZ 25 / VZ 40	VD 30 / VD 20 VZ 05 / VZ 25	VD 20 / VD 60 VZ 25	VD 30 VZ 25 / VZ 40	VD 20 / VD 60 VZ 25 / VZ 40

Z 70/76-DD-AM
protective varnish
for automotive stickers