

# 2-component Screen Printing Inks [Choice]

Solvent Based Systems

## APPLICATIONS REQUIRING THE USE OF 2-COMPONENT INKS

Glass, metal, polypropylene, polyethylene, polyester, polyamide, several coated surfaces, duroplastics and many more materials are demanding substrates, particularly in regard to printability. In addition, many applications require especially high resistances. In those cases we recommend to use 2-component printing inks.

For nearly 60 years now, Coates Screen Inks, a leading producer of screen and pad printing inks, has been developing screen printing inks for technical-industrial applications. Our printing ink systems are used for automotive applications, in the cosmetics industry, for sports articles, electrical engineering and electronic components, packaging materials, give-aways, toys, textiles and much more.



**Below you will find a choice of 2-component screen printing inks suitable for an exceptionally broad field of applications. These ink types are:**



- ZGM:** New technology with two different hardeners, especially environmentally compatible and user-friendly formulation. Broad field of applications. Excellent mechanical and chemical resistances.
- ZMN:** Excellent light fastness and weather resistance. Especially suitable for demanding thermoplastics such as pre-treated PP and PE. Especially environmentally compatible and user-friendly formulation.
- Z:** Broad field of applications. For applications requiring high mechanical and chemical resistances.
- Z/GL:** For glass, metal, chromium-plated surfaces.
- Z/PVC:** Special ink system for high-quality PVC foils. Also available as traffic sign ink.
- ZM:** Free of silicone, especially suitable for metals and aluminium boards.
- TZ:** For (synthetic) textiles, also for hot-melt transfer, TPE/TPU ("Soft-Touch" surfaces).
- ZE 1690:** Highly elastic. For foamed plastics, elastic synthetic materials, rubber etc.
- YN:** Containers made of pre-treated PP and PE, coated surfaces, metals.

## Colour selection chart

In the chart overleaf we present screen printing inks, you can either process as 1 or optionally as 2-component ink and mandatory 2-component systems. In addition, the chart lists the main fields of application, properties and additives for each ink system.



For further detailed information about the individual ink types please refer to the product data sheets.

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INK TYPE	ZGM	Z	Z / GL	Z / PVC
Application	Allrounder	Various	Various	Various
Ink Type/Conformities				
Main Applications	Glass Ceramics Metal Chromium-plated surfaces Pre-treated PP and PE	Pre-treated PP and PE Coated surfaces Duroplastics	Sheet glass Glass containers Ceramics Metal	PVC foils
Other Applications	Duroplastics PMMA (Acrylic Glass) Polyamide	Metal Polyamide Polyester	Duroplastics Chromium-plated surfaces Glass-fibre reinforced plastics	ABS SAN PMMA (Acrylic Glass) Coated Surfaces
Properties	Dual curing system Free of silicones Excellent chemical resistance	High chemical resistance High resistance against filling products	Waterproof Dishwasher resistant Very good resistance against corrosion Sterilisation-fast	High resistances against alcohol, solvents and filling products.
Drying Weather Resistance Degree of Gloss	Slow Low Satin gloss	Medium Low Glossy	Slow Low Glossy	Quick High Satin gloss
Choice of Colour Shades C-MIX 2000 Standard Standard HD (Highly Opaque)	 — 	  	  	  
Processing Mixing Ratio Hardener: <b>Standard</b> Option	2-comp. 4:1 or 10:1 <b>Z/H (4:1)</b> <b>SVC/H (10:1)</b>	2-comp. 4 : 1 <b>Z/H</b>	2-comp. 10:1 or 20:1 <b>ZH/GL</b> ZH/02-GL ZH/03-GL	1-comp./ 2-comp. 10 : 1 <b>ZH/N</b> Z/H
<b>Thinner: Standard</b> Option Quick Thinner Option Very Fast Thinner	<b>VD 60</b> VD 45	<b>VD 60</b> VD 40 VD 20	<b>VD 60 oder XVH</b> VD 20 VD 10	<b>VD 30</b>
<b>Retarder:</b> Slow Very slow	VZ 35	VZ 25 VZ 40	VZ 20 or VZ 25	VZ 25 VZ 40



Complies to Toy Standard EN 71-3:2019



Formulated with especially environmentally compatible raw materials. Free of aromatics, butyl glycolate, cyclohexanone, PAH, Solvent Naphtha



Ink can be processed as 1- or 2-component ink



2-component ink system. Must be processed with hardener

ZMN	ZM	ZE 1690	TZ	YN
Specific	Specific	Specific	Specific	Various
  		 	 	 
Pre-treated PP and PE	Metal Aluminium wall boards (e.g. Dibond)	TPU/TPE "Soft-touch surfaces" Synthetic fabrics Vulcanised rubber	Textiles (cotton and synthetics) Textile transfer prints	Pre-treated PP and PE containers
PMMA Polycarbonate Chromium-plated surfaces	Thermoplastics such as pre-treated PP and PE Duroplastics	Foamed materials Polyurethane	Polyester Polyamide TPU/TPE "soft-touch surfaces" Leather, synthetic leather	Metal Coated Surfaces Polyamide Polyester
Very good weather resistance Very good resistance against chemical cleaning agents	Good weather resistance Resistant against alkaline media	Very elastic Formable	Flexible Washing resistant Good solvent resistance	Good resistances e.g. against alcohol, water and various chemicals
Medium Very high Glossy	Medium Very high Glossy	Medium Medium Satin gloss	Medium Medium Satin matt	Quick Medium Glossy
● — ○	— ● —	● — ○	● ● ○	● ● ●
2-comp. 4 : 1 <b>ZH / N</b> Z / H	2-comp. 8 : 1 <b>ZH / N - 00</b> Z / H	1-comp./ 2-comp. 10 : 1 <b>ZH / N</b> Z / H	1-comp./ 2-comp. 10 : 1 <b>ZH / N</b> Z / H	1-comp./ 2-comp. 10 : 1 <b>Z / H</b>
<b>VD 60</b>	<b>VD 60</b> VD 40	<b>VD 60</b> VD 20	<b>VD 60</b> VD 20	<b>VD 60</b> VD 30
VZ 25 or VZ 35 VZ 40	VZ 25 VZ 40	VZ 25 VZ 40	VZ 25 VZ 40	VZ 25 VZ 40

- Colour range available
- Colour range available upon request
- Colour range not available

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# 2-comp. Screen Printing Inks

## Basic Information Solvent Based Systems

### DEFINITION

2-component screen printing inks (or short 2-c. inks) are screen printing inks mixed at a specified ratio with a reactive chemical component – the hardener – prior to processing.

Because of this hardener (= the second component) these inks are called 2-component inks.

After addition of hardener the ink can be processed for a limited period of time (= pot life), generally a period of several hours.

### FUNCTION/EFFECT OF HARDENER

The hardener cross-links with the binder of the ink and/or the surface of the substrate in a chemical reaction. Due to the hardener the prints will be more resistant against aggressive chemicals or show much better suitability for long-term outdoor applications compared to prints applied with 1-component inks.

On demanding substrates like glass, metals or pre-treated polyolefines you will only achieve good adhesion with the use of hardeners.

Depending on application, substrates used, reaction of the binders and the required degree of cross-linkage there are different mixing ratios of inks : hardeners. Ratios range from:

10 : 1 (e.g. ZGM with hardener SVC/H)

to 4 : 1 (e.g. Z)

to 3 : 1 (e.g. Z/DD).

### HARDENERS

We use hardeners based on polyisocyanate and silane for our 2-component inks.

Z/H, ZH/N and ZH/N-00 contain isocyanate hardeners. They are suitable for processing with various binder systems.

Hardener SVC/H contains silane hardeners. Such hardeners are used for ink systems like ZGM

to achieve adhesion on glass, ceramics, steel or chromium surfaces.

### TYPES OF 2-COMPONENT INKS

2-component inks do not only have different mixing ratios of ink and hardeners.

Besides the 2-component inks which must be processed with hardener there is another type. The two different types are:

#### MANDATORY 2-COMPONENT INKS:

These always must be processed with hardener.

Some examples of our range are ZGM, Z, ZMN:

#### OPTIONAL 2-COMPONENT INKS:

These ink ranges can also be processed without hardener addition. The use of hardener is an option to achieve certain requirements.

Examples for optional 2-component inks are screen inks TZ, YN, ZE 1690, Z/PVC

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Additional information:

Product data sheets of our screen inks: download [www.coates.de](http://www.coates.de), products

Choice of screen inks (chart): download [www.coates.de](http://www.coates.de), products

Processing of 2-component inks: download: [www.coates.de](http://www.coates.de), Service & Support, Technical articles

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