



Coates Screen

# Product Data Sheet

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## SCREEN PRINTING INKS Z/GL

### APPLICATION

2-component Z/GL inks are special screen inks for printing onto glass and ceramics, e.g. glass panes, glass bottles, ornamental glasses, ceramic tiles, metals and duroplastics etc. After sufficient curing reflecting layers may be applied to Z/GL inks by common mirror-imaging methods.

Z/GL inks are not suitable for outdoor applications.

### CHARACTERISTICS

Z/GL inks show a semi-gloss to glossy finish and excellent adhesion to the above mentioned materials. The opaque colour shades of ink series Z/GL were especially adjusted not to change their colour shade after mirror imaging like transparent inks do.

For mirror imaging it is essential that the substrates are thoroughly cleaned with cleaning agents used in the glass industry (e.g. Ceroxid) prior to printing. The ink film must also be completely cured.

Depending on the components of the protective varnish applied to the reflective coating slight bleeding may occur. However, this only happens if very bright varnishes are used, not with the commonly used brown or green protection varnishes for reflective coatings. If white or bright varnish is required, a special adjustment of the screen printing inks is necessary.

### CHOICE OF PIGMENTS AND LIGHT FASTNESS

The colour shades of Z/GL-NT and Z/GL C-MIX-2000 inks show heavy-metal free pigmentation and correspond to the requirements of EN 71, part 3, safety of toys, migration of certain elements.

### ADJUSTMENT FOR SCREEN PRINTING

Prior to processing, 2-component screen printing inks Z/GL have to be mixed with hardener ZH/GL, mixing ratio 20 : 1 (parts by weight). Depending on room temperature the pot life is approx. 12 hours.

Mixed bronzes show reduced pot life.

An addition of 3-5% VM3 (flow agent) will be helpful if flow problems occur. However, this addition may lead to wetting problems if the prints are to be mirror-imaged.

### HARDENERS

Three types of hardeners are available:

- 1) **Hardener ZH/GL**  
Even if air dried excellent water resistance is achieved with this hardener. However resistance to various solvents is limited. This hardener is also recommended for bronze shades.
- 2) **Hardener ZH/02 GL**  
Prints made with this hardener only show good water resistance after oven curing at 140°C (284°F) for 20 Minutes. These prints also show relatively good solvent resistance. As this hardener yellows it is not recommended for light colours and bronze shades. This hardener is especially recommended for metals and duroplastics.

Using ZH/02 GL the screen printing ink film will also show a higher degree of gloss.

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### 3) **Hardener ZH/03-GL**

This hardener comprises the good properties of the two hardeners mentioned above. ZH/03-GL air dries or cures by heat application within 20 minutes at 140°C.

### **THINNERS AND RETARDERS**

Printing consistency is adjusted using the thinner of 2-component Z inks. These are

<b>Thinner ZVS/XVS</b>	for machine printing
<b>Thinner ZVH/XVH</b>	for manual printing
<b>Retarder ZD/UV2</b>	for printing of fine details

### **DRYING**

With addition of the correct amount of hardener 2-component Z/GL inks air dry within 30-40 minutes (dust-dry). They are completely cured after 72 hours at 20°C.

If the prints have to show high resistance to water and other media they should be oven cured at 140°C (284°F) for 30-60 minutes.

### **CLEANING OF STENCILS AND TOOLS**

2-component-screen printing inks Z/GL can be removed from stencils and tools using cleaning agent ZR.

### **PACKING**

Screen printing inks Z/GL come in 1 liter containers (approx. 1.06 qts.).

### **SHELF LIFE**

For information regarding shelf life please see tin label.

### **MARKING**

Read material safety data sheets prior to processing.

The material safety data sheets according to 91/155/EWG contain marking in compliance with the regulation on dangerous working materials as well as instructions for precautions when processing, handling and storing as well as first aid.

The information given in the material safety data sheet refers to processing as described in this technical leaflet.

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### STANDARD SHADES

citric yellow	Z 10/GL-NT	blue violet	Z 36/GL-NT
medium yellow	Z 11/GL-NT	light green	Z 40/GL-NT
light orange	Z 14/GL-NT	white	Z 60/GL-NT
red bright	Z 21/GL-NT	white, highly opaque	Z 60/GL-HD-NT
light blue	Z 30/GL-NT	black	Z 65/GL-NT
		black, highly opaque	Z 65/GL-HD-NT

### PROCESS COLOURS ACCORDING TO EUROPE SCALE

yellow	Z 180/GL-NT
magenta	Z 181/GL-NT
cyan	Z 182/GL-NT

### C-MIX 2000 BASE COLOURS

primrose	Z/GL-Y30	violet	Z/GL-V50
golden yellow	Z/GL-Y50	blue	Z/GL-B50
orange	Z/GL-O50	green	Z/GL-G50
scarlet	Z/GL-R20	black	Z/GL-N50
red	Z/GL-R50	white	Z/GL-W50
magenta	Z/GL-M50	varnish	Z/GL-E50

*The statements in our leaflets and safety data sheets are based on our present experiences, however they are no assurance of product properties and do not justify a contractual legal relationship. They serve to advise our business associates, but it is absolutely necessary to make your own printing tests under local conditions, with regard to the intended purpose prior to starting the job. - All former leaflets are no longer valid. APRIL 2000 – VERSION No. 1*

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