

## AZOCOL<sup>®</sup> Z 171 EOM

### **Solvent and water resistant, highly pure, dual-cure Diazo photoemulsion, especially suitable for printing finest half-tones, lettering and designs**

AZOCOL Z 171 EOM is used for the production of high-quality, solvent and water resistant stencils. In addition, printing media containing N-methyl-pyrrolidon (NMP), which are used in the electronic industries for instance, can be printed with AZOCOL Z 171 EOM. High resolution and excellent mesh bridging make it suitable for printing finest half tones, lettering and designs. Optimum copying quality can be achieved on steel and polyester mesh. Notice: here the high resolution is given for applications up to a stencil build-up thickness of approx. 10-12 µm, then the exposure time will become clearly longer and the resolution might reduce. In order to make use of the high resistance of AZOCOL Z 171 EOM having higher stencil build-up thicknesses, the emulsion can be used without Diazo.

Due to the specific and optimized production processes AZOCOL Z 171 EOM offers maximum purity and fulfils therefore highest demands in screen printing, e.g. in the fields of electronics, medicine or solar technique.

#### **SENSITIZING**

DIAZO No. 16

To achieve higher stencil build-up thickness AZOCOL Z 171 EOM can be applied without DIAZO (see table no. 2)

#### **DEGREASING**

Before coating it is recommended to clean and degrease the screen mesh to achieve reproducible coating results. Ensure proper tension of the screen mesh. Use manual degreasers of the PREGAN range or KIWOCLEAN degreasing concentrates for automatic units (see separate technical information). After thorough rinsing with water and drying the screens are ready for coating.

#### **COATING**

Coating can be done manually or by machine. The use of a coating machine is especially recommended because it achieves a reproducible coating result. If coating is done manually ensure that the mesh openings are filled from the printing side (generally 2-3). Only then begin with the emulsion build-up from the squeegee side – depending on the print job.

#### **DRYING**

The screen must be dried thoroughly before exposing to achieve the highest ink resistance. This should preferably be done in a dust-free drying-chamber with fresh-air inlet at temperatures of between 35–40°C.

Coated and dried screens should not be exposed to yellow light more than 10 minutes before exposure, because a pre-gross-linking could occur.

#### **EXPOSURE**

The stencil is created by UV-light hardening of the non-printing stencil parts. Expose with blue actinic light at a wave length of 350-420 nm. A metal halide lamp provides the best results.

Due to the many variables that determine the actual exposure time, accurate exposure times cannot be given. Optimum copying results can only be achieved by trials (i.e. step exposure). For the best ink resistance, please choose an exposure time which is as long as possible. This maximum exposure time must still allow reproduction of fine details. When extremely fine details are to be resolved, preferably reduce the exposure

dose, e.g. reduce the power of a 5000 W metal halide lamp by 50% to 2500 W.

Guide values:

Light source: 2500 W metal halide lamp at a distance of 1 m. Manual coating (H), e.g. first from the printing side (D), then from the squeegee side (R) [1D/1R (H)], automatic coating with KIWOMAT MODULAR (MA), coating trough R 125

Mesh	Coating sequence*	Stencil build-up thickness	Average exposure time
120-34 Y	1D/1R (H)	Approx. 6 ± 1 µm	Approx. 80-130 sec
150-31 Y	1D/1R (H)	Approx. 4 ± 1 µm	Approx. 70-120 sec
SD 45/18 (400 mesh steel)	1D/1R (H)	Approx. 4 ± 1 µm	Approx. 50-80 sec
SD 67-25	2D-2R (MA)	Approx 20 µm	Approx. 180-220 sec

D: Coating from the printing side, R: coating from the squeegee side,

**RE-EXPOSURE**

Resistance to long print runs can be increased considerably by exposure the squeegee side again. Guide values for a 5000 W halide metal lamp: distance of 1 m, approx. 5 minutes.

**RETOUCHING/  
BLOCKING-OUT**

Due to the special formulation of AZOCOL Z 171 EOM adhesion of common screen fillers can be reduced. For retouching/ blocking-out use the sensitized emulsion. Expose shortly to UV-light again after drying.

**DECOATING**

In general, stencils made with AZOCOL Z 171 EOM can be decoated with PREGASOL products. However, due to its high resistance, this has to be done with more efforts than for so-called standard emulsions. Ask KIWO for advice. If screens are coated in advance or if printed screens are not immediately decoated, it is recommended to store them protected against UV-light or daylight to prevent post-hardening and hence additional difficulties in decoating.

Residues of the emulsion or printing media on the mesh can be removed with a PREGAN post-cleaner. Ask our KIWO distributor or KIWO for advice.

**NOTICE**

Please note that the printing resistance of a screen-printing stencil is influenced by a lot of parameters e.g. mesh, coating technique, drying, exposure time etc. Furthermore, a lot of printing media and printing machines are being used in practice that have not all been tested by us. Therefore, please accept our offer and test the suitability of our products by asking for emulsion samples, as we can only guarantee a constant quality according to our own working conditions.

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<b>COLOUR</b>	Unsensitized: Blue Sensitized: Green
<b>VISCOSITY</b>	Approx. 5000 mPas (Rheomat RM 180, MS 33, D = 100 s <sup>-1</sup> , 23°C)
<b>HEALTH HAZARDS/ ENVIRONMENTAL PROTECTION</b>	Please follow further information given in the material safety data sheet.
<b>STORAGE</b>	<p><u>Unsensitized</u>: 12 months at 20-25°C. Protect against freezing and temperatures over +35°C.</p> <p><u>Sensitized</u>: approx. 1 week at 20-23°C (for highest quality). Storage time can be extended by storing the sensitized emulsion in a fridge at 7-10°C.</p> <p><u>Screens coated in advance</u>: at least 1 month (at 20-25°C and in complete darkness).</p> <p>When storing pre-coated screens for a longer period of time, the copying material can absorb humidity from the environment. Dry again prior to copying.</p>