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TECHNICAL INFORMATION

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FOTECOAT 1838 SOLO

**ready-to-use screen emulsion for the textile screen printing
with plastisoles and aqueous inks**

What can be achieved with the voluntary diazo-addition ?

- **the stencil allows longer runs**
- **the water resistance is improved**
- **the decoating becomes more difficult**
- **the exposure time has to be increased by 15%**

1. Description

- Fast, presensitized polymer screen emulsion.
- Processing under yellow light is recommended because of the high light sensitivity.
- FOTECOAT 1838 SOLO is magenta, the stencils allow excellent see-through.
- Smaller quantities can be evacuated with the waste water.
- Solids content 38%.
- For long runs a small quantity of diazo powder sensitizer can be added directly to the FOTECOAT 1838 SOLO (1 sachet D2 for 4,5, 1 sachet D81 for 1,0 kg FOTECOAT 1838 SOLO. Use only this diazo sensitizer for direct addition without dissolving it firstly in water.
- The diazo sensitizer is added to the FOTECOAT 1838 SOLO and comes in form of a sachet. However FOTECOAT 1838 SOLO can be used without the addition of the diazo.

2. Application advantages

- Can be coated on all types of meshes; on white mesh the resolution/definition is satisfactory.
- High resolution coupled with excellent stencil edge sharpness.
- Can be decoated with the usual products.
- The chemical hardening for the production of a more resistant or permanent stencil is possible with FOTECHEM 2100 or 2110.

- To speed-up the wash out for thick stencils after exposure an immersion for 5 - 15 min. in a water bath is possible.

3. **Manual coating and machine coating**

- Manually the ready to use emulsion can be coated 1/1 or 1/2 wet in wet. On coarse meshes 1/1 coating is possible.
- The viscosity is ideal for machine coating. If necessary the emulsion can be diluted with water without losing light sensitivity.
To produce a flatter stencil profile with a lower Rz-value (to improve print edge quality) additional coats can be added after an intermediate drying cycle. After each such cycle the stencil thickness increases by 1 - 2 μ and the Rz-value becomes lower.
- After coating pour the emulsion from the coating trough into an empty can so that it can degas; this way air bubbles can be avoided in the stencil which results in less pin-holing.

4. **Stencil quality**

Excellent mesh bridging. This causes an excellent stencil edge together with high resolution at short exposure times. A perfect stencil can be achieved on dyed mesh if the correct coating and drying technique is applied. If the diazo sensitizer is added to FOTECOAT 1838 SOLO, the stencil becomes harder and the stencil thickness proud of the mesh increases slightly.

5. **Storing**

Shelf life :	1 year	
Storing time for coated stencils (in complete darkness):	2 - 3 weeks	} without } addition of } Diazo
Storing time for coated stencils in black plastic pouches, sealed, at storing temperature of 20°C and relative humidity of 50 - 70 %:	3 months	
This ready-to-coat emulsion should be stored in a closed can, protected from direct actinic light. Protect also against freezing.		
After addition of the diazo sensitizer the storing time at normal room conditions is reduced to 3-4 weeks.		

6. Exposure times

- If metal halogen lamps are used for exposure insist on a photopolymer bulb. Do not use actinic fluorescent tubes, but only super actinic tubes, a 125 W HPR lamp or a Osram Ultra-Vitalux 300 W lamp.
- The exposure time depends with such lamps on the number of operating hours (ca. 10 % UV light loss for 100 hours).
- This presensitised screen emulsion has a very high light sensitivity and allows short exposure times. Therefore the exposure latitude is narrowed.
- It is essential to make first a test exposure to find the optimum exposure time for the desired stencil. Longer exposure times result in better mechanical resistance and easier decoating, but have a trend to losses in the resolution.

Example for exposure times with 5KW MH-lamp, with photopolymer bulb at 100 cm distance:

- on 120T yellow 20 µ stencil thickness proud of a mesh ca. 60 sec.
- on 77T white 25 µ stencil thickness proud of mesh ca. 45 sec.
- on 43T white 35 µ stencil thickness proud of mesh ca. 50 sec.

Coating technique always 1x print side, 2x squeegee side, wet in wet.

If the stencil does not give the needed run lengths expose longer or add the diazo powder sensitiser to the emulsion (see 1. Description).

7. Decoating

- Rule: The better the through-hardening of the stencil system by longer exposure times, the easier will be the removal.
- This screen emulsion does not contain diazo. Therefore less mesh staining will occur and the ghost-image removal will be simplified.
- Recommended for an effective removal are:

FOTECHEM 2004	liquid, ready-to-use
FOTECHEM 2044	powder; dilute 100 g in 7 - 10 l of water
FOTECHEM 2005	paste; recommended for large size stencils
FOTECHEM 2042	concentrate, dilute 1 part with 30 parts of water. Recommended for machine decoating.

A preliminary degreasing cycle is recommended.

- The removal is always sped-up, if the printing ink is removed immediately after printing. It helps further if firstly FOTECHEM 2003 gel (degreasing agent) is applied and washed-off. This degreaser is also available as FOTECHEM 2033 concentrate; it can be diluted with 10 parts of water.
- For the decoating cycle a high pressure water gun is always recommended. Important: always rinse the chemicals first from the stencil with a soft water spray before the high pressure gun operates.
- Ghost pictures: After removal, the staining of the mesh or ink and stencil residues can be removed as follows:
Wet the mesh first with FOTECHEM 2085 (emulsifying solvent mix), then brush-on immediately FOTECHEM 2080 alkaline paste. Let stand for maximum 30 min., then rinse with a mild water spray before the ghost pictures are removed with a high pressure gun from the mesh threads. Never let the mixture FOTECHEM 2085/2080 dry in on the mesh !
- A less aggressive method for solvent based inks is the use of FOTECHEM 2088, which is a one-component, mild alkaline paste which contains already the solvent.
- For both methods refer to our Technical Instruction sheet.

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