

## KIWOCOL POLY PLUS HWR

### 1. DESCRIPTION

KIWOCOL POLY PLUS HWR is highly water resistant and solvent resistant Diazo-Photopolymer emulsion specifically designed for long runs with water based inks or abrasive print media, such as ceramic inks. It can be chemically hardened to make a permanent stencil.

### 2. SENSITIZING

Sensitize with Sensitizer #1 (supplied). Allow the mixed emulsion to settle after sensitizing to allow air bubbles to escape. Keep the emulsion in a cool (68°F / 20°C) and dark place during that time. (See sensitizer label for instructions).

### 3. MESH PREPARATION

To achieve a good stencil, the mesh must be degreased with a commercial degreaser such as KIWO DEGREASER 1:20 or PREGAN A9 and must be free of dirt, dust, ink residues and ghost images. Rinse the screen thoroughly using low water pressure to remove any degreaser remaining on the screen. A foaming degreaser such as KIWO DEGREASER 1:20 or PREGAN A9 helps to determine proper and complete rinsing. See KIWO DEGREASER 1:20 or PREGAN A9 Technical Information for details.

### 4. COATING PROCEDURE

KIWOCOL POLY PLUS HWR has excellent coating properties on mesh counts of 40-470 threads per inch (16-185 threads per cm). For best printing results, the following coating techniques are recommended using a round edge coating trough:

40-86 tpi (16-34 tpcm):	1-1 wet-on-wet
110-156 tpi (40-60 tpcm):	2-2 wet-on-wet
195-305 tpi (77-120 tpcm):	2-2 wet-on-wet
330-470 tpi (130-185 tpcm):	2-3 wet-on-wet

Always start with 1 or 2 coats on the substrate side of the screen to fill the mesh openings; then finish with wet-on-wet coats on the squeegee side to build up the emulsion coating to the desired thickness. The correct coating technique for your process *must be determined through coating tests*.

Contact KIWO for more specific coating techniques.

### 5. DRYING OF THE COATED SCREEN

Dry the screen in complete darkness, or under safelight conditions, with the screen in a horizontal position with the substrate side down. Temperature, relative humidity and airflow affect the drying time. The screen must be dried thoroughly before exposing to achieve highest resistance to ink and ink cleaners. A temperature of 86°-104°F (30°-4°C) at a relative humidity of 30% -50% and moderate airflow are optimum conditions. Drying at room temperature and in uncontrolled conditions may lead to inconsistent results and varying screen resistance.

### 6. EXPOSURE

Expose with ultra-violet light at a wavelength 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. The following examples are offered as a guide only:

Lamp: 5000 Watt metal halide at 40" (1m) distance.

156/62 tpi (60/62 tpcm) yellow mesh, coating technique 2-2.

Exposure time: approximately 150 seconds.

305/34 tpi (120/34 tpcm) yellow mesh, coating technique 2-2.

Exposure time: approximately 75 seconds.

The correct exposure time for your equipment and mesh selection *must be determined through exposure tests* using a step exposure or and exposure calculator such as the KIWO STEP WEDGE EXPOSURE film or the KIWO EXPOSURE CALCULATOR films.

Under-exposed screens feel slimy on the squeegee side during developing. At correct exposure time, the screen is not slimy. Overexposure leads to loss of detail. Correctly exposed screens will withstand high tap water pressure during washout.

Contact KIWO if you have further questions regarding exposure time.

### 7. DEVELOPING / WASHOUT

Develop the screen using full tap water and a medium spray pattern. Adjust the water temperature to lukewarm or slightly colder. Rinse thoroughly from both sides of the screen. Vacuum off any excess water or blot it off with newsprint paper. This will avoid runs or scum from under-exposure in the open areas.

### 8. POST-EXPOSURE

Post-exposing the screen after developing and drying is not very effective. To improve the resistance by 15% the post-exposure time needs to be 6-10 times the original exposure time. Instead of gaining resistance from post-exposure, expose the screen fully with the initial exposure.

### 9. POST-HARDENING (CHEMICALLY)

The emulsion can be chemically post-hardened using, HARDENER K or HARDENER HP to improve water resistance. HARDENER HP improves the resistance, but the emulsion remains reclaimable. See HARDENER K or HARDENER HP Technical Information for details.

**10. BLOCKOUT / TOUCH-UP**

When printing with solvent based inks, retouching and blocking out can be done with KIWO TOUCH-UP and KIWO BLOCKOUT. For a water resistance stencil, block out and retouch with KIWO BLOCKOUT WR/MV or use KIWOCOL POLY PLUS HWR (dry thoroughly and re-expose completely prior to using HARDENER AWR or HARDENER HP). See KIWO TOUCH-UP, KIWO BLOCKOUT, and KIWO BLOCKOUT WR/MV Technical Information for details.

**11. DECOATING**

KIWOCOL POLY PLUS HWR can be decoated with emulsion removers such as KIWO STENCIL REMOVER. Before decoating, ensure the screen is completely cleaned of ink or ink cleaning chemical residues. If water beads up on the stencil, degrease the screen prior to decoating. See the KIWO STENCIL REMOVER Technical Information for details. If the screen was chemically hardened with HARDENER K, reclaiming is no longer possible. Due to high resistance level of KIWOCOL POLY PLUS HWR, a high-pressure washer is required to remove the emulsion.

**12. HAZE REMOVING**

When under-exposed, the emulsion can cause emulsion haze after reclaiming. To remove haze, use KIWO HAZE REMOVER or PREGAN PASTE. Use the haze removing products with the KIWO INK WASH or KIWO ULTIMATE INK WASH. These products are also very effective at removing ink haze. See separate Technical Information for these additional products for more details.

**13. PHYSICAL PROPERTIES**

Viscosity :	approx.: 10,000 mPas
Viscosity sensitized:	approx.: 4,000 mPas
Solids Content:	approx.: 44%
Color:	blue
Color Sensitized:	green
Storage:	1 year at 68°F/20°C
Potlife:	4-6 weeks at 68°F/20°C
Precoated screens:	1-3 weeks in complete darkness at 68°F/20°C
Freezing:	protect against freezing
VOC:	none
TLV:	n/a
HMS rating:	Health – 1 Flammability – 0 Reactivity – 0

**14. PACKAGING**

1 US Quart, 1 US Gallon, 5 US Gallons, 55 US Gallon Drum.

**15. ADDITIONAL INFORMATION**

For additional product information, please visit our web site at [www.kiwo.com](http://www.kiwo.com). All products mentioned in this Technical Information are available through KIWO Inc. and its distributor network. For further information contact your KIWO distributor or KIWO direct.

Thank you for choosing **KIWO**.