

POLYCOL® LIGHT-SCRIBE ULTRA

1. DESCRIPTION

POLYCOL® LIGHT-SCRIBE ULTRA is formulated for the production of high-quality, solvent and water resistant stencils made by direct exposure Computer-To-Screen (CTS) systems. Excellent resolution and mesh bridging make it suitable for printing half-tones and four-color process. POLYCOL® LIGHT-SCRIBE ULTRA is formulated to provide the fastest exposure times in the POLYCOL® LIGHT-SCRIBE product line, but its good exposure latitude and smooth, uniform coating makes this emulsion very user friendly. POLYCOL® LIGHT-SCRIBE ULTRA has excellent durability and great under exposure latitude.

2. SENSITIZING

Pre-sensitized -- ready to use.

3. DEGREASING

To achieve consistent, high quality stencils, degrease mesh with a good quality commercial degreaser such as KIWO's DEGREASER 1:20 CONCENTRATE or ULTRA PREP. For degreasers used in automatic equipment, KIWO offers a specially formulated machine grade degreaser KIWOCLEAN DEGREASER 1:40 CONCENTRATE. See separate Technical Information sheets for further details regarding KIWO's degreasers.

For best results, thoroughly brush both sides of screen with degreasing agent. Using a pressure washer to remove degreaser will help remove stubborn mesh contaminates, but may also re-introduce impurities to the mesh caused by blowback from the washout booth. To reduce blowback risk, perform a final flood rinse using low water pressure.

Mesh should be free of all contaminates such as ink and emulsion residues, oil, dust, and ghost/haze images prior to emulsion coating.

4. COATING PROCEDURE

POLYCOL® LIGHT-SCRIBE ULTRA can be coated manually or by machine and 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 edged (1 - 1.25 mm radius) coating trough:

110-195 tpi (43-77 tpcm):	2-1 or 2-2 wet-on-wet
195-280 tpi (77-110 tpcm):	2-1 or 2-2 wet-on-wet
305-460 tpi (120-181 tpcm):	2-1 or 2-2 wet-on-wet

When coating manually, begin on the substrate side of the screen with wet-on-wet coats until emulsion surfaces on the squeegee side (generally 2 coats). Then finish with wet-on-wet coats on the squeegee side to build up the emulsion coating to the desired thickness (generally 1-3 coats) depending on the printing requirements and coating trough design.

For specific applications, and due to varied screen room equipment and conditions, the correct coating technique for your process *must be determined through coating tests*. Contact KIWO for more specific coating techniques.

5. DRYING

Dry emulsion coated screens in complete darkness, or under safelight conditions. Temperature, relative humidity and airflow affect the drying time. Screens must be *dried thoroughly* before exposing to achieve highest chemical and mechanical resistance. Environmental conditions play a vital role.

Temperatures of 86°-104°F (30°-40°C) with a relative humidity of 30% - 50% maximum and moderate airflow are optimum conditions.

Drying at room temperature and in uncontrolled conditions may lead to inconsistent results and varying screen resistance.

TIP: Keep screens and all screen handling areas dry until exposure is complete. This includes storage, exposure preparation, and exposure areas, as photo emulsions reabsorb moisture if reintroduced to high humidity environments. Emulsions do not become humidity resistant until exposure, washout and drying are complete.

6. EXPOSING

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.

Exposure times for direct projection and direct exposure computer-to-screen systems depends on the distance of the stencil and/or type of projection unit or light engine in the case of direct exposure CTS systems.

POLYCOL® LIGHT-SCRIBE ULTRA is extremely fast exposing. Since there are so many independent variables when working with projection and direct exposure CTS systems, proper exposure guidelines cannot be given. Therefore, thorough exposure testing must be conducted using guidelines established by the manufacturer of your exposure system.

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

Please contact KIWO if you have further questions regarding exposure time.

7. DEVELOPING / WASHOUT

Developing can be done with mains water pressure but fine details may be difficult to open due to unintended incidental light. Side-by-side comparison tests have shown that developing with higher pressure opens fine details better than what can be achieved using mains tap pressure.

8. POST-HARDENING (UV POST EXPOSURE)

Post-exposing the screen after developing and drying may be used to achieve better stencil durability. Expose the squeegee side of the screen to further crosslink under cured emulsion. To improve the resistance 10-15% the post-exposure time needs to be two to four times the original exposure time. Exposing the screen fully with the primary exposure offers better resistance than under exposing



initially, then post-exposing to improve resistance. Post exposure is most often used for long printing runs when water based and/or abrasive inks are used.

9. POST-HARDENING (CHEMICALLY)

The emulsion can be chemically post-hardened using one of KIWO's stencil hardeners. Stencil hardeners can be classified as reclaimable or un-reclaimable.

If reclaiming ability is desired, use KIWO HARDENER HP or HARDENER WR.

If a permanent (un-reclaimable) stencil is desired, for example when cataloging screens for future use, or when aggressive inks are used for very large print runs, use KIWO HARDENER K. See separate Technical Information sheets for further details regarding KIWO's stencil hardeners.

10. BLOCKOUT / TOUCH-UP

Retouching and blocking out can be done with KIWO's BLOCKOUT, RED BLOCKOUT or KIWOFILLER SR 401 NV. For a water resistance stencil, block out and retouch with KIWOFILLER SWR 22 or use POLYCOL® LIGHT-SCRIBE ULTRA (dry thoroughly and re-expose completely prior to using stencil hardeners). See separate Technical Information sheets for further details regarding KIWO's blockouts.

11. RECLAIMING

POLYCOL® LIGHT-SCRIBE ULTRA can be reclaimed with KIWO's STENCIL REMOVER 1:20/1:50 CONCENTRATE. Before reclaiming, ensure the screen is completely cleaned of ink or ink cleaning chemical residues

For best results, work both sides of the screen i.e. apply stencil remover, brush, and pressure wash both sides of the screen. After applying stencil remover, a short dwell time may be used prior to pressure washing to allow more working time for the stencil remover especially when using coarser meshes and/or thicker stencils.

CAUTION: Never allow stencil removers to dry prior to removal, as the emulsion will become locked into the mesh and virtually impossible to remove. See separate Technical Information sheets for further details regarding KIWO's stencil removers.

12. HAZE REMOVING

To remove emulsion haze or ghost images left from the ink, use KIWO's HAZE REMOVER, FAST LIQUID HAZE REMOVER, or MEGA CLEAN ACTIVE.

For best results, HAZE REMOVER should be applied to a dry screen, then allowed to completely dry on the screen. For more effective ink ghost removal, HAZE REMOVER can be used in conjunction with KIWOCLEAN® CONCENTRATED INK WASH or EXCEL INK WASH to re-activate dried HAZE REMOVER.

Active components in FAST LIQUID HAZE REMOVER and MEGA CLEAN ACTIVE work in approximately five minutes and effectively remove both emulsion haze and ink ghost simultaneously. See separate Technical Information sheets for further details regarding KIWO's haze removers.

Haze removers, like ink washes and stencil removers should be worked into the screen mesh from both sides of the screen before removing for maximum effectiveness.

13. PHYSICAL PROPERTIES

Viscosity:	approx.: 8,000 mPas
Solids Content:	approx.: 37%
Color:	Blue
Storage:	18 months at 68°F/20°C
Potlife:	18 months at 68°F/20°C
Pre-coated screens:	8 weeks in <u>complete darkness at 68°F/20°C</u> Due to the highly light sensitive nature of this emulsion, storage should be kept a short as possible.
Freezing:	Protect against freezing
VOC:	None
TLV:	N/A
HMIS 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. All products mentioned in this technical data sheet are available through KIWO Inc. and its distributor network. For further information contact your authorized KIWO distributor or KIWO direct.

Thank you for choosing **KIWO**.