

# PERFECTOS® Production Guidelines

## Lithographic Textile Transfer

### For application onto:

- Cotton
- Polycotton
- Polyester

Designed for co-use with ECOTRANS® water-based backing inks

**Substrates to be printed must be tested for suitability with the ink systems prior to production runs being carried out.**



### Lithographic transfers



- A super-high definition transfer that generates photographic quality transfers by co-use of the high density LITHOTRANS® 10-10- ink series with the ECOTRANS® water-based high stretch / high opacity PU inks.
- Generating highly washfast transfer when used in conjunction with a release coated paper or PET film, the LITHOTRANS® system allows for the production of leading edge children's wear, replica garments and fashionwear.
- Good adhesion & flexibility on suitable substrates – matches properties of the ink system used for backing.
- Washable up to 60°C, No. of cycles 10 – up to 50x 40°C with addition of optional crosslinker in litho inks
- Compliant with OEKO-TEX® Class 1 / Main RBO RSL.

### PRODUCTION GUIDE:

**Full guidelines for the use of LITHOTRANS® 10-10- can be found on the relevant technical data sheet.**

#### **Brief production guidelines are as follows:**

Print the litho inks in the process of KMYC or KYMC; as a transfer system, the black is recommended for printing last. To improve clean up and conversion from normal graphic production to the litho transfer, it is recommended that the Cyan and Black are used in same positions, with the Magenta and Yellow being the same position for graphic (paper applications). This prevents any staining / discoloration from the previous colour on the rollers.

Best results onto release-coated papers or PET films are achieved by printing the following density;

- Magenta / Cyan – 1.3 – 1.4
- Yellow – 0.9
- Black – 1.5

The offset press would ideally be based on an alcohol level (IPA) of 10%. Lower levels of alcohol can result in slower print speeds by over-emulsification of water into the inks. For the same reason dampening roller pressures should be set to a minimum. As the substrates are usually release-coated, this prevents any absorption of the water into the base substrate, meaning that any excessive water is forced to emulsify the inks.

Production is recommended for use with scatter powders (starch offset powders) with often 50% greater deposit being put down compared to standard graphic applications. Standard graphic offset powders are typically 5-10µ – with best drying performance of inks with powders of 20-35µ.

**Substrates** Release-coated papers are required for use with PERFECTOS® PET films, available in 50µ, 75µ and 100µ thicknesses. If paper is preferred, recommended papers include ArjoWiggins T105 or Tullis Russell CP2 / Litho T. With all papers it is critical to ensure formaldehyde-free base and coatings are used to meet most

leading RSL branding requirements.

## Backers

To maximise stretch, softness and handle, the PERFECTOS® water-based series ECOTRANS® 82-08- is recommended. Full guidelines for production can be found on the ECOTRANS® 82-08- TDS. For hot shop conditions, ECOTRANS® 82-50-M-WHITE-HS is recommended.

## Additives

The LITHOTRANS® 10-10- is provided ready to use, however the following additives may be used to maximise production in non-standard production conditions;

- 10-AD-LD Liquid Drier – addition of 1-3% will typically reduce drying period from 48 hours to 16-24 hours after printing.
- 10-AD-RET Retarder – to slow down the drying rate of the inks on the press; will also slow the drying on the paper / PET film. Not normally recommended for most production conditions.
- 10-AD-RMT Reducing Medium T – to thin inks that are beginning to thicken on long production runs, or where product is thicker in the container (i.e. after being returned to the tin at the end of production). Maximum recommended addition levels of 1-3%.
- 82-AD-AQ Optional crosslinker to improve washfastness from 20 x 60°C up to 50 x 40°C. Recommended addition into the LITHOTRANS® ink of 0.5%, which can be added directly into the ink duct.

## Transfer

Typical transfer conditions are 150-165°C for 7-10 seconds. Most substrates would be based on cold peel applications. Transfer conditions are dependent on the hot melt powder used behind the ECOTRANS® backing white, with the following main powders suggested for use:

- 82-HP-U82S – Ultra soft / high stretch powder – application temperature of 82-HP-U82S. Ultra soft / high stretch powder – application temperature of 140°C – 160°C for 6-7 seconds, 40 psi, cold peel. Withstands 40°C washfastness x 50 cycles.
- 82-HP-U82W – High stretch / higher wash fastness powder. Application temperature of 150-165°C for 7-10 seconds, 40 psi, cold peel or warm peel (substrate dependent). Wash fast to 60°C.
- 82-HP-A82 – High adhesion powder for synthetic and hard adhesion fabrics. Application temperatures of 165-170°C for 7-10 seconds. Low stretch option for hard to adhere substrates.

## Potential Issues:

Problem	Solution
Inks fail to dry	<ul style="list-style-type: none"> <li>• Add 1-3% 10-AD-LD liquid drier. Ensure suitable PET film is used (PERFECTOS® Grades available)</li> <li>• Increase particle size of scatter powder.</li> <li>• Increase alcohol %.</li> <li>• Reduce water amounts on blanket by reducing dampening roller pressure.</li> </ul>
Scratches are seen in the litho inks after transfer	<ul style="list-style-type: none"> <li>• Ensure that printed sheets are not transported / moved for 5-6 hours after printing.</li> <li>• Add 1-3% 10-AD-LD liquid drier</li> <li>• Increase scatter powder percentage.</li> </ul>
Inks do not transfer from substrate after backing and waiting 24 hours before transfer	<ul style="list-style-type: none"> <li>• Ensure transfer temperature is correct, check that 82-AD-AQ crosslinker was added to the ECOTRANS® backing white.</li> <li>• Add 82-AD-RE retarder into the backing white to improve adhesion to the litho inks.</li> <li>• Use suitable carrier film / substrate.</li> </ul>
Inks delaminate from the backing white in washing	<ul style="list-style-type: none"> <li>• Ensure drying time was correct between litho printing and backing.</li> <li>• Recure transfers to ensure adhesion between backing white and litho inks.</li> </ul>

**Production Tips:**

Benefit	Process to follow
Improve colour vibrancy	Addition of fluorescent Magenta and Fluorescent Yellow into the Process Magenta and Process Yellow will make cartoon characters have significantly more vibrancy
Resolve scratches / pits in transfer paper coating	Print a first layer of LITHOTRANS® 10-10-M-CLEAR mixing clear as a 100% coverage, waiting 1 day and then printing normal CYMK. Use of 1st layer of clear will also improve adhesion of fine lines / lettering in the event of over coating of release on the substrate.
Blocking prevention	To prevent any blocking / offsetting onto the back of the sheets, it is suggested to maximise stack of paper at 100-150 sheets. Common practice is to use a thumb width as a guide when to remove from the litho machine. Factories will often use trays or wooden blocks / sheets of wood to generate towers to prevent excessive stacks / weight from causing blocking.
Coloured glitter	An alternative to using coloured glitter in the backing layer is to print LITHOTRANS® 10-10- colours and back with silver glitter. This will generate a metallic shaded glitter. Best results are achieved using either 0.004sq inch glitter (through 43T meshes – threads per cm) or 0.008sq inch glitter (through 12-15T meshes).



**Storage** Ink storage should be as per the TDS. Finished transfers will typically be suitable for 6-12 months. Ideally should be stored in sealed bags – and if sent to humid conditions add a silica gel sachet to the bag to prevent any sweating of the transfer.

**Safety** Refer to the specific PERFECTOS® safety data sheets for information on the safety & handling of this particular range of inks, available on request.

For any further information, please feel free to contact your local PERFECTOS® representative to discuss the litho transfer process in greater detail.

*The information and recommendations contained in this Technical Datasheet, as well as technical advice otherwise given by representatives of our Company, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary. For the same reason, our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that they will meet fully their particular requirements. Our policy of continuous product improvement might make some of the information contained in this Technical Datasheet out of date and users are requested to ensure that they follow current recommendations.*

**PERFECTOS®**  
speciality inks



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