

LITHOTRANS® LO TECHNICAL INFORMATION

LITHOTRANS® sheet-fed offset litho inks are used to produce soft handle and flexible heat transfer labels for apparel, sportswear, healthcare, workwear and promotional items when used with our **ECOTRANS® AQ** inks and adhesives.

LITHOTRANS® inks are:

- **STANDARD 100 by OEKO-TEX® Product Class I** compliant
- Restricted Substance List (RSL) compliant to the World's leading brands
- EU REACH Regulation (EC) No 1907/2006 compliant
- RoHS compliant
- Consumer Product Safety Improvement Act (CPSIA) compliant
- washable up to 60°C
- suitable for printing on or applying to a wide range of substrates
- capable of producing high quality photographic heat transfer embellishments
- non-hazardous
- formulated to be free from APEO, cadmium, formaldehyde, organotin, phthalates and PVC

LITHOTRANS® LO are our ready to use fast-drying linseed oil (LO) based version of LITHOTRANS®.

Ink Code

10-10-

Printing Process

Sheet-Fed Offset

Restricted Substance List (RSL) Compliance

STANDARD 100 by OEKO-TEX® Product Class I

Adidas A-01 Test Standard

Nike, Inc. Chemistry Playbook & Restricted Substance List May 2020

Wash & Durability Performance

Laundering / Washing

AATCC TM61 Colorfastness to Laundering: Accelerated

AATCC TM135 Dimensional Changes of Fabrics after Home Laundering

ISO 105-C06:2010 Colour fastness to domestic and commercial laundering

ISO 105-C08:2010 Colour fastness to domestic and commercial laundering using a non-phosphate reference detergent incorporating a low-temperature bleach activator

ISO 6330:2012 Domestic washing and drying procedures for textile testing

Marks and Spencer Fabric Durability (C15)

Marks and Spencer Print Durability (P5)

Dry Cleaning

AATCC TM86 Drycleaning: Durability of Applied Designs and Finishes

ISO 105-D01:2010 Colour fastness to drycleaning using perchloroethylene solvent

Bleach

ISO 105-C09:2001 Colour fastness to domestic and commercial laundering — Oxidative bleach response using a non-phosphate reference detergent incorporating a low temperature bleach activator

Chlorine

ISO 105-E03:2010 Colour fastness to chlorinated water (swimming-pool water)

Tumble Dry

ISO 6330:2012 Domestic washing and drying procedures for textile testing

Ironing

ISO 105-X11:1994 Colour fastness to hot pressing

Abrasion

AATCC TM8 Colorfastness to Crocking: Crockmeter

ISO 105-X12:2016 Colour fastness to rubbing

ISO 12947-2: 2016 Determination of specimen breakdown

Inks

Process Colours

Cyan (10-10-1-C)

Magenta (10-10-1-M)

Yellow (10-10-1-Y)

Black (10-10-1-K)

Mixing Range

Mixing White (10-10-M-WHITE)

Mixing Clear (10-10-M-CLEAR)

Mixing Orange 2 (10-10-M-2)

Mixing Pink 3 (10-10-M-3)

Mixing Red 4 (10-10-M-4)

Mixing Green 6 (10-10-M-6)

Mixing Violet 10 (10-10-M-10)

Mixing Ultramarine Blue 16 (10-10-M-16)

Mixing Yellow 24 (10-10-M-24)

Fluorescents

Mixing Fluorescent Yellow 46 (10-10-M-46)

Mixing Fluorescent Orange 47 (10-10-M-47)
Mixing Fluorescent Red 48 (10-10-M-48)
Mixing Fluorescent Pink 49 (10-10-M-49)
Mixing Fluorescent Magenta 50 (10-10-M-50)

Metallics

Metallic Gold (10-10-1-871)
Metallic Silver (10-10-1-877)

Colour Matching

A mixing guide is available on request to allow customers to match to Pantone colours.

PERFECTOS® can match colours to samples or colour references.

Additives

LITHOTRANS® LO Liquid Driers (10-AD-LD)

Use up to 5% if the ink dries too slow.

LITHOTRANS® LO Reducing Medium T (10-AD-RMT)

Use up to 10% to thin the ink as necessary.

LITHOTRANS® LO Retarder (10-AD-RE)

Use up to 3% if the ink dries too fast.

LITHOTRANS® LO Water Activated Driers (10-AD-WAD)

Use up to 3% if the ink dries too slow when printing small images or text.

Notes:

1. We recommend to only use the additives listed above to ensure the heat transfer labels produced with LITHOTRANS® inks and additives are STANDARD 100 by OEKO-TEX® Class 1 compliant.
2. We recommend not to use >10% of any combination of additives in LITHOTRANS® LO inks.

Crosslinkers

None.

Substrates

Release coated PET films
Release coated transfer papers

Notes:

1. Substrates to be printed must be tested for suitability with the LITHOTRANS® LO ink system prior to production runs being carried out. Always test application fully before beginning production run as there is often considerable variance in substrates from different manufacturers and even between different batches.
2. The release substrate and application substrate must be STANDARD 100 by OEKO-TEX® Class 1 compliant to ensure the heat transfer labels produced with LITHOTRANS® inks, additives and adhesives are STANDARD 100 by OEKO-TEX® Class 1 compliant.

Usage Instructions

- The inks are supplied ready for printing.
- Once printing has been completed the printed substrate must be thoroughly dried for a minimum of 24 hours before additional processing.

Notes:

1. Ensure inks stored in part used containers are covered with greaseproof paper after usage to minimise ink drying and skinning. The greaseproof paper should be pressed firmly against the entire surface of the ink with any air bubbles removed.
2. LITHOTRANS® LO inks must be fully dried prior to screen printing ECOTRANS® AQ inks or ECOTRANS® AQ Screen Printable Adhesive.

Usage Recommendations

- The optimum print room temperature is 18-20°C.
- The optimum relative humidity is 50-60%.
- We recommend using in a well ventilated area.
- We recommend the use of a humidifier / dehumidifier in the printing area to maintain the stability of transfer papers.
- We recommend the isopropyl alcohol concentration is increased to 20% for printing onto release coated PET films and transfer papers. This will lower the surface tension of the water giving the thinnest dampening on the plate possible to minimise over-emulsification. This is necessary because unlike paper and cardboard substrates, release coated PET films and transfer papers are not able to absorb excess water.
- Use IR drying in the sheet delivery area, if available, to accelerate oxidation drying.
- For best registration it is recommended that the substrate is conditioned to the ambient temperature and humidity of the print room prior to printing.
- Use a carton-grade anti-set-off powder to assist oxidation drying in the stack.
- We recommend that ink is replenished into the ink duct in smaller quantities more frequently rather than larger quantities less often to prevent the ink skinning. This will improve production efficiency and reduce downtime as printing will not need to be stopped because of print defects.
- If printing is interrupted for more than 2 hours then remove the ink from the duct and clean the duct, rollers, plate and blanket with cleaning solvent approved by the press-manufacturer to avoid the ink hardening and becoming difficult to remove afterwards.

- Printed stacks should be stored in a temperature-controlled warehouse and not moved unnecessarily during oxidation drying to prevent marking/set-off.

Wash Up

- After printing is finished remove the ink from the ink duct.
- Clean the ink from the ink duct, ink rollers, plate and blanket with cleaning solvent approved by the press-manufacturer.

Notes:

1. Ink left on the machine will harden by the oxidation drying process and will be difficult to remove afterwards.

Packaging

Inks

1kg.

Additives

1kg, 5kg and 25kg.

Shelf Life & Storage

Inks

3 years from date of manufacture in unopened containers.

Additives

3 years from date of manufacture in unopened containers.

Notes:

1. Products must be stored in the supplied containers with closed lids.
2. Products must be stored in between 5°C and 35°C, out of direct sunlight and away from any heat sources.

Compatible Inks

ECOTRANS® AQ (82-08-)

ECOTRANS® AQ (82-25-)

ECOTRANS® AQ (82-50-)

ECOTRANS® AQ Anti-Dye Migration (82-08-9-59100)

For Dye Sublimated Polyesters.

ECOTRANS® AQ Anti-Dye Migration Soft Shell (82-08-9-SSB)

For Dip Dyed and Soft Shell Fabrics.

Compatible Adhesives

ECOTRANS® AQ 60°C Wash Adhesive (82-HA-DW)

For domestic washing.

Frequently Asked Questions (FAQ)

1. Why are my prints are not drying quickly enough?

- If available, use IR dryers in the delivery to accelerate oxidation drying.
- Use a slightly coarser anti-set-off powder to increase the gap between sheets to promote better oxidation drying.
- Consider blowing air into the stack or passing the printed sheets through the offset machine again to introduce more oxygen to the prints.
- Ensure the release substrate has been stored correctly prior to printing.
- Ensure the ambient temperature of the area where the prints are stored between printing processes is not too low; oxidation drying is faster at higher temperatures.
- Increase the amount of LITHOTRANS® LO Liquid Driers (10-AD-LD) used in the ink to increase the drying speed of the ink.
- If additional drying and the addition of LITHOTRANS® LO Liquid Driers (10-AD-LD) is not allowing you to dry your prints quickly

enough, then your inks may have over-emulsified. Consider the use of LITHOTRANS® LO Water Activated Driers (10-AD-WAD) to resolve this.

- If the print is not drying quickly enough in areas of heavy ink superimposition, consider the use of under-colour removal to minimise ink-film thickness.

2. How do I know the ink is thoroughly dry?

- A better indicator of through drying is a thumb-twist drying test rather than surface wipe. Place the sheet to be tested on a smooth flat surface. Press the thumb onto the printed area, apply a firm pressure and twist through 90°.
- Especially test over areas of heavy ink superimposition, such as shadow areas, where all four colours may have been used.

3. Why are my prints missing details? (Hickeys)

- This can be caused by dust, other particles or dried ink on the substrate or blanket. Ensure the substrates are free from dust and the blanket is thoroughly cleaned.

4. Why are my transfers not releasing from the release substrate?

- Ensure the appropriate release substrate is used.
- Check the release substrate is within its expiry date.
- Confirm the release substrate has been printed on a side with a release coating if not double sided.
- Check both the inks and the additives are within shelf life and expiry dates.
- Ensure the inks are fully cured before attempting to transfer.
- Ensure a compatible adhesive is used.

- Ensure that the maximum temperature specified in the drying conditions has not be exceeded when using ECOTRANS® AQ Printable Adhesives.
- Ensure sufficient time has elapsed between printing the inks and adhesives and attempting to transfer.
- Ensure application temperature is correct. If the platen temperature is too low then the adhesive may not melt completely and therefore not be able to flow into the application substrate correctly. Be aware that the platen temperature can reduce after multiple transfer applications.
- Ensure the platen pressure is correct. If the pressure is too low then the adhesive may not be pushed into the application substrate sufficiently to adhere and pull the printed heat transfer label from the release substrate. Please note that the inlet pressure does not equate to platen pressure.
- Ensure the application dwell time is correct. If the dwell time is too short then the adhesive may not melt completely and therefore unable to flow into the application substrate.
- Ensure the application instructions are followed for cold-peel or hot-peel release substrates.
- Hot Peel release substrates can typically be removed 1-2 seconds after application.
- Cold peel release substrates can typically be removed 10 seconds after application.

5. Why does fine text or detail not release cleanly from the release substrate?

- Ensure that ECOTRANS® AQ ink and ECOTRANS® AQ Screen Printable Adhesive is behind the entire offset image.
- Print LITHOTRANS® LO Mixing Clear (10-10-M-CLEAR) onto the release substrate and allow to dry fully before printing the offset image.

Safety

Please read the Safety Data Sheets (SDS) before use.

Disclaimer

All information is given in good faith but without warranty expressed or implied.

Document Version

Version 3.7 Published 28 July 2020