

ECOTRANS® AQ TECHNICAL INFORMATION

ECOTRANS® inks and adhesives are used to produce soft handle and flexible heat transfer labels for apparel, sportswear, healthcare, workwear and promotional items.

ECOTRANS® inks and adhesives are:

- **ECO PASSPORT by OEKO-TEX®** certified
- **STANDARD 100 by OEKO-TEX® Product Class I** compliant
- Global Organic Textile Standard (**GOTS**) Version 6.0 Approved
- 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 95°C
- suitable for printing on or applying to a wide range of substrates
- non-hazardous
- formulated to be free from APEO, cadmium, formaldehyde, organotin, phthalates and PVC

ECOTRANS® AQ (82-08-) inks are water based inks used to produce stretchable, soft handle and flexible multi-layer heat transfer labels with unrivalled 100% stretch and return memory.

Ink Code

82-08-

Printing Process

Screen

Restricted Substance List (RSL) Compliance

ECO PASSPORT by OEKO-TEX® (**OEKO-TEX® Label Check**)

STANDARD 100 by OEKO-TEX® Product Class I

Global Organic Textile Standard (GOTS) Version 6.0

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

Notes:

1. Fluorescents and Metallics are washable up to 60°C.

Inks

Mixing Range

Mixing Opaque White (82-08-M-WHITE)

Mixing Black (82-08-M-BLACK)

Mixing Clear (82-08-M-CLEAR)

Mixing Yellow 1 (82-08-M-1)

Mixing Orange 2 (82-08-M-2)

Mixing Pink 3 (82-08-M-3)

Mixing Red 4 (82-08-M-4)

Mixing Green 6 (82-08-M-6)

Mixing Violet 10 (82-08-M-10)

Mixing Ultramarine Blue 16 (82-08-M-16)

Mixing Yellow 24 (82-08-M-24)

Mixing Blue 34 (82-08-M-34)

Fluorescents

Mixing Fluorescent Yellow 46 (82-08-M-46)

Mixing Fluorescent Orange 47 (82-08-M-47)

Mixing Fluorescent Red 48 (82-08-M-48)

Mixing Fluorescent Pink 49 (82-08-M-49)

Mixing Fluorescent Magenta 50 (82-08-M-50)

Metallics

Pearlescent Gold (82-08-9-PG)

Metallic Silver (82-08-1-877)

Shimmer Silver (82-08-9-SS)

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

ECOTRANS® AQ Retarder (82-AD-RE)

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

ECOTRANS® AQ Ink Stabiliser (82-AD-ST)

Use up to 3% if ink dries too fast or if printing in high ambient temperatures.

ECOTRANS® AQ Anti-foam (82-AD-AF)

Use up to 1% to reduce excessive bubbling when mixing inks.

ECOTRANS® AQ Wetting Agent (82-AD-WA)

Use up to 1% to reduce reticulation and pin-holing of prints.

Notes:

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

Crosslinkers

ECOTRANS® AQ Crosslinker Aqua (82-AD-AQ)

Use to improve wash & durability performance.

Use at 3% for ECOTRANS® AQ Mixing Clear (82-08-M-CLEAR) and other colours.

Use at 2% for ECOTRANS® AQ Mixing White (82-08-M-WHITE) ink.

Use at 1% for ECOTRANS® AQ Anti-Dye Migration (82-08-9-59100 / 82-08-9-SBB) inks.

For mixed colours 82-AD-AQ must be added in correct proportion.

ECOTRANS® AQ Crosslinker Bluesign® System (82-AD-BS)

Use at 5% to improve wash & durability performance.

Notes:

1. We recommend to only use the crosslinkers listed above to ensure the heat transfer labels produced with ECOTRANS® AQ inks, additives, crosslinkers and adhesives are STANDARD 100 by OEKO-TEX® Class 1 compliant.
2. We recommend not to mix different ECOTRANS® AQ crosslinkers together.

Substrates

Release coated PET films

Reflective PET films
Release coated transfer papers

Notes:

1. Substrates to be printed must be tested for suitability with the ECOTRANS® AQ 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 ECOTRANS® inks, additives and adhesives are STANDARD 100 by OEKO-TEX® Class 1 compliant.

Usage Instructions

For use with ECOTRANS® AQ Screen Printable Adhesives

- ECOTRANS® AQ Crosslinker (82-AD-AQ / 82-AD-BS) must be added to ECOTRANS® AQ (82-08-) inks and mixed thoroughly.
- The inks are now ready for printing.
- Each print layer must be thoroughly dried at a minimum of 90°C and for a minimum of 60 seconds to ensure completely dry before additional layers of inks are printed.
- Before printing the ECOTRANS® AQ Screen Printable Adhesives, ensure the drying temperature and duration is adjusted to meet the usage instructions of the adhesive.

For use with ECOTRANS® Hot Melt Powder Adhesives

- ECOTRANS® AQ Crosslinker (82-AD-AQ / 82-AD-BS) must be added to ECOTRANS® AQ (82-08-) inks and mixed thoroughly.
- The inks are now ready for printing.

- Each print layer must be thoroughly dried at a minimum of 90°C and for a minimum of 60 seconds to ensure completely dry before additional layers of inks are printed
- The final print layer must not be dried to allow the Hot Melt Powder to stick to the surface of the ink.
- Apply the Hot Melt Powder to the final print layer and remove excess.
- To melt the Hot Melt Powder, ensure the drying temperature and duration is adjusted to meet the usage instructions of the Hot Melt Powder.

Notes:

1. ECOTRANS® AQ (82-08-) inks mixed with ECOTRANS® AQ Crosslinker (82-AD-AQ / 82-AD-BS) have a pot life of 8 hours.
2. Printed substrates must be allowed to cure for a minimum of 24 hours before application.
3. Standard Wash & Durability Performance will be achieved 72 hours after curing.

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 that tunnel dryers are turned on and allowed sufficient time to reach the required drying temperatures before printing commences.
- We recommend the use of a humidifier in the printing area to prevent drying-in of the inks on the screen mesh.
- We recommend the use of water misters in the printing area.
- The screen emulsion must be suitable for use with water based inks.
- For Mixing Opaque White (82-08-M-WHITE) ink we recommend printing two layers with a screen mesh of 61T. This will produce a thicker ink layer giving excellent stretch, opacity and wash performance.

- For other colours we recommend printing one to two layers with a screen mesh of 90T depending on colour density required.
- We recommend a square edged triple layer squeegee with 65/95/65 shA.
- The squeegee must be suitable for use with water based inks.
- For best registration it is recommended that the substrate is conditioned to the ambient temperature and humidity of the print room prior to printing.
- We recommend that ink is replenished onto the screen in smaller quantities more frequently rather than larger quantities less often to keep the screen open. This will improve production efficiency and reduce downtime as printing will not need to be stopped for screen cleaning.
- If printing is interrupted for more than 5 minutes then the screen mesh must be cleaned thoroughly to avoid ink drying in the screen
- PERFECTOS® Screen Refresher (99-10-83) can be used to keep the screen stable and open when printing small image areas or keeping the ink soft prior to screen washout.
- We recommend to only mix the required quantity of ink and crosslinker to reduce wastage.

Wash Up

- Remove excess ink from squeegee and screen mesh immediately.
- Remove any remaining ink from the screen mesh with water. A pressurised water-jet will give best results.
- Use PERFECTOS® Cleaner (99-10-82) for final cleaning the of the squeegee and screen mesh to prevent ghosting.
- Ensure all ink is removed from the squeegee and screen mesh to avoid damage.

Notes:

1. If it is not possible to clean the screen mesh immediately then PERFECTOS® Screen Refresher (99-10-83) can be applied to the screen mesh to delay the ink drying. Storing the screen in a plastic bag until it can be cleaned may also be helpful.

Packaging

Ink Range

1kg, 5kg, 20kg and 250kg.

Additives

1kg, 5kg and 25kg.

Crosslinkers

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.

Crosslinkers

1 year 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 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.

ECOTRANS® AQ 95°C Wash Adhesive (82-HA-IW-WB)

For industrial washing.

ECOTRANS® Hot Melt Powder Adhesive for 60°C Wash (82-HP-E-82)

For domestic washing.

ECOTRANS® Hot Melt Powder Adhesive for 60°C Wash (82-HP-U-82W)

Additional stretch for domestic washing.

ECOTRANS® Hot Melt Powder Adhesive for 90°C Wash (82-HP-A-82)

For industrial washing.

Frequently Asked Questions (FAQ)

1. Why are my printed substrates sticking together (blocking)?

- This is often caused because the prints have not been thoroughly dried.
- Consider reducing the quantities of ECOTRANS® AQ Retarder (82-AD-RE) and ECOTRANS® AQ Ink Stabiliser(82-AD-ST) additives to reduce ink drying time.
- Ensure the drying temperature and duration is correct.
- Ensure the drying method has sufficient air flow and extraction to ensure all solvents are removed from the prints.

- Consider increasing the drying temperature and/or duration for larger print designs.
- If printing on a roll-to-roll screen machine, adjust re-wind tension to prevent rolls being re-wound too tightly.

2. Why are my prints suffering from reticulation?

- Reticulation can often be caused by a difference in surface tension between the ink and the substrate. The addition of ECOTRANS® AQ Wetting Agent (82-AD-WA) may assist the surface tension of the ink to become compatible with the substrate.
- Confirm that no more than 1% of ECOTRANS® AQ Anti-foam (82-AD-AF) has been added to the inks.
- Confirm that no more than 1% ECOTRANS® AQ Wetting Agent (82-AD-WA) has been added to the inks.

3. Why are my prints suffering from pin-holes?

- This can be caused by dust, other particles or dried ink blocking the screen mesh. Ensure the screen mesh is thoroughly cleaned.
- Mixing ECOTRANS® AQ Crosslinker (82-AD-AQ) into ECOTRANS® AQ inks can sometimes introduce air bubbles. These air bubbles can result in pin-holes appearing in prints. The addition of ECOTRANS® AQ Anti-foam (82-AD-AF) can reduce this pin-hole effect.
- A low surface tension release coating can cause the pin-hole effect. The addition of ECOTRANS® AQ Wetting Agent (82-AD-WA) may assist the surface tension of the ink to become compatible with the substrate.

4. Why are my prints not opaque?

- This can be caused by dust, other particles or dried ink blocking the screen mesh. Ensure the screen mesh is thoroughly cleaned.
- Consider double flood / double stroke options to increase the volume of ink printed.

- Consider reducing the quantities of ECOTRANS® AQ Retarder (82-AD-RE), ECOTRANS® AQ Ink Stabiliser(82-AD-ST), ECOTRANS® AQ Anti-foam (82-AD-AF) and ECOTRANS® AQ Wetting Agent (82-AD-WA) if wanting to produce the most opaque prints.
- Ensure screens are in good condition with a consistent mesh tension across the screen.
- Consider using additional layers of emulsion to make a high build screen to increase the volume of ink printed.
- Consider a screen mesh with a lower screen mesh count to increase the volume of ink printed.
- Consider using a screen mesh with thinner threads.

5. Why are my prints showing mesh marks?

- This may be caused by the thickness of the screen mesh filaments preventing an even coating of ink. Where possible use thinner threads or a finer screen mesh.
- We recommend printing two layers of ink to reduce this effect.

6. Why are my prints missing details?

- This can be caused by dust, other particles or dried ink blocking the screen mesh. Ensure the screen mesh is thoroughly cleaned.
- Dust or other particles can also settle onto the substrate preventing the ink from printing correctly.
- Ensure the screen snap-off distance is uniform to prevent uneven squeegee pressure distorting the print.
- Consider using a dyed/yellow screen mesh instead of a white screen mesh for sharper prints.
- Ensure screens are in good condition with a consistent mesh tension across the screen.

7. Why do my prints feel greasy?

- Prints can sometimes feel greasy and appear to have liquid on the surface.
- This may be caused because the prints have not been thoroughly dried.
- Ensure the drying temperature and duration is correct.
- Ensure the drying method has sufficient air flow and extraction to ensure all solvents are removed from the prints.
- Consider increasing the drying temperature and/or duration for larger print designs.

8. Why are my transfers wrinkled or distorted after drying?

- This may be caused because the PET film is not heat stable at the current drying temperature.
- Consider using a PET film that is heat stable at the required drying temperature.
- Consider reducing the drying temperature and increasing the duration if it is not possible to change the PET film.

9. 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 that the maximum temperature specified in the melting conditions has not be exceeded when using ECOTRANS® Hot Melt Powder 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.

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

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