

# Print and Seal zero-halogen solution

## Durable Protection & Easy Seal

### TECHNICAL DATA SHEET

Revision number. 1.4  
Last edited 10. jan. 2024



Epa compliant

Print & Seal is a premium product. Extremely quick and easy to print and apply and gives the printed label protection with the clear over laminating on-site where long term durable solution is required.

The Print and Protect are printed using thermal transfer printing technology and designed for many applications where ID of parts are required.

Printing is quicker, more efficient and cost effective, while the results are durable and long lasting outdoor and combined with the UV acrylic adhesive it sticks very good even on rough and non polar surfaces like PP, PE or powder coated substrates.

Excellent TT printability

Identify : Rental companies ID of all equipment, cabinets, panels, components, asset ID, name plates, and many more applications

- \* High scratch and rub resistance ideal for rough surfaces
- \* Name plate quality and faster than engraving
- \* Ideal for labelling exposed to chemicals and high temperatures outdoor
- \* Professional look with sharp and crisp legends
- \* Gloss finish and foamed backed adhesive for strong holding for rough surfaces
- \* Durability of up to 7 years outdoor (vertical Exposure) - Conditions apply
- \* UL CSA recognised label material
- \* BS 5609 Marine certification can be achieved by using white label stock

## Industry



Industry



Marine



Wind power



Commercial



Aerospace



Construction



Railway



Military



Electrical installations



Petrochemical



Telecom



### STANDARD COLOR



### MATERIAL

Top-coated thermal transfer printable polyester film with a radiation cured UV acrylic adhesive. Overlaminat polymeric plasticised vinyl film. Backed with a glassine release liner.

### ADHESIVE

Radiation Cured UV acrylic adhesive. Application temperature Min. 5°C (41°F)

### TEMPERATURE RANGE

-40°C to 150°C (-40°F to 302°F)  
+150°C 24 hours on glass  
-40°C 72 hours on glass

### RECOMMENDED RIBBON

FTI-Y & FTI-HX black  
FTI-HX ribbon is halogen free

### SMUGDE & SCRATCH RESISTANCE

Good smear resistance

### RESISTANCE TO SOLVENTS

Excellent

### REACH - ROHS

Yes

### RECOMMENDED PRINTERS

Thermal transfer printers

### HALOGEN FREE

Yes both substrates - see statement page 5.

### BS5609 MARINE CERTIFICATION

Only white substrate with approved ribbon. Please inquire.

### UL/ CSA CERTIFICATION

This product polyester & clear film meets the requirements as stated in UL 969 & CSA C22.2 No. 0.15. UL file number MH2676 + MH27538+ MH26355

### STORAGE

From date of manufacture 2 years. Cool and dry in original packaging. Recommended temperature. 70-75°F - 21-25°C - 40-50% RH - Relative humidity defined by FINAT

Prolonged storage at higher temperatures and / or higher humidity will shorten shelf life.

### APPLICATIONS

Specifically developed for the industries marked in green to the left. Can be used in other industries also.

**ENVIRONMENTAL UV AND USE**

PROPERTIES	TEST METHOD	TYPICAL VALUE
The outdoor clear polymer vinyl film is ideal for extended life indoor and outdoor applications.	The durability is based on European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking	Polymeric clear outdoor vinyl is ideal for many medium-life indoor and outdoor applications. A durability of 7 years (vertical exposure) can be expected. The durability is based on middle European exposure conditions. Actual performance life will depend on substrate preparation, exposure conditions and maintenance of the marking.

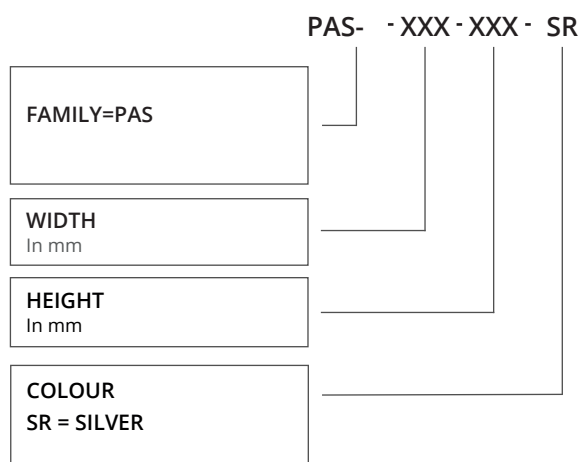
SPECIAL APPROVALS POLYESTER FILM	TEST METHOD	TYPICAL VALUE
The polyester film meets the requirements as stated in UL 969 and CSA C22.2 No. 0.015. for indoor and outdoor use	UL	UL File Number is MH26760

SPECIAL APPROVALS CLEAR VINYL FILM	TEST METHOD	TYPICAL VALUE
The clear vinyl film meets the requirements as stated in UL 969 and CSA C22.2 No. 0.015. for indoor and outdoor use. Details listed in the UL file MH27538. The product is C-UL recognized.	UL - CSA	UL File Number is MH27538
This product meets the requirements as stated in ANSI/UL 817 (Cord Sets & Poser-Supply Cords and ANSI/UL 2238 (Cable Assemblies abd Fittings for Industrial Control and Signal Distribution	UL	UL File Number is MH26355

## Ordering Info - Part Number Example

**PART NUMBER EXAMPLES - Print and Seal**

### Product code



## General Values for thermal transfer PP Film. silver

### THERMAL TRANSFER METALLIC / SILVER PRINTABLE FILM

PROPERTIES	TEST METHOD	TYPICAL VALUE
Substance	DIN 53352	71 g / m <sup>2</sup>
Facestock thickness	DIN 53370	Aprox 51 micron ± 10%

### FILM THERMAL PROPERTIES

PROPERTIES	TEST METHOD	TYPICAL VALUE
Service Temperature Range		-40° - 150°C (-40°F to 302°F)

**ADHESIVE PHYSICAL** - Balanced performance on a wide variety of substrates including low energy plastics- Good resistance to chemicals and solvents

PROPERTIES	TEST METHOD	TYPICAL VALUE
High initial tack	FTM 9 Glass	15 N/25mm
Peel Adhesion 180°C	FTM 1 20 minutes on glass	15N/25mm
Adhesive Type	Strong permanent adhesive. Acrylic UV cured	Strong permanent adhesive. Acrylic UV cured
Adhesive Weight	FTM 12	25 g/m <sup>2</sup>

**ADHESIVE TESTING** - The adhesive needs a certain time to reach its final adhesion, we recommend waiting at least 24 hours or better 72 hours after dispensing the the label to the substrate before proceeding with any performance test.

### FACESTOCK OVER LAMINATE FILM- CLEAR GLOSSY POLYMERIC VINYL FILM

PROPERTIES	TEST METHOD	TYPICAL VALUE
Caliper	ISO 534	Aprox 80 micron ± 10%
Total Caliper	ISO 534	Aprox 100 micron ± 10%
Temperature performance data		-80°C to 110°C

### LINER DATA

PROPERTIES	COLOUR	TYPICAL VALUE
Supercalendered Kraftliner paper	White	approx. 100 micron thickness
Basis Weight		98 g / M <sup>2</sup>

### APPENDIX 1 - PERFORMANCE DATA SILVER POLYESTER

**Note:** the following technical data should be considered representative or typical only and should not be used for specification purposes.

Peel Adhesion:

FTM1: 180°, 300 mm/min, dwell time: 72 hours

SURFACE	N/25MM		SURFACE	N/25MM
ABS	17,5		PA6	16,0
Stainless Steel	20,8		Polycarbonate (PC)	24,8
Automotive lacquered panels	15,0		Polyester (PET)	17,0
PA6 + GF30	15,0		Polypropylene (PP)	18,0
HDPE	11,7		Polystyrene (PS)	N-A
LDPE	N-A		Powder Coated Panel	11,0

## APPENDIX 1 - PERFORMANCE DATA - SILVER POLYESTER

**Due to the unique UV Cured technology we strongly recommend waiting for 24 best up to 72 hours after application before per forming any adhesive testing. Best is 72 hours.**

### Chemical Resistance:

The performance results are based on 4 hours immersions at room temperature unless otherwise noted. Samples were applied to the test and conditioned for 24 hours before immersion and evaluated immediately upon removal. Peel adhesion was measured according to FTM1.

CHEMICAL	TEST SUBSTRATE	VISUAL APPEARANCE	EDGE PENETRATION (MM)
Brake Fluid	Glass	No Change	0
Diesel	Glass	No Change	0
Engine Oil	Glass	No Change	2
Water, Distilled	Glass	No Change	0
Dish Washing Agent	Glass	No Change	0
Bleach	Glass	No Change	0

### Chemicals:

Brake Fluid: DOT 4 Synthetic (ONE Way) Diesel: Total Engine Oil: Total Quatz 700, 10 W / 40 Gasoline : Total Euro 95

## CSA - CANADIAN STANDARDS ASSOCIATION

UL has tested this product (silver polyester) according to the requirements described in CSA C22.2 No.. 0.015. This product is C-UL recognized for indoor and outdoor use, wet locations (Type A). The details are listed in the UL file number MH27538 .

The C-UL certification requires printing with "Suitable" thermal transfer ribbons

GROUP	APPLICATION SURFACE	MAX. TEMPERATURE (°C)	MIN. TEMPERATURE (°C)	INDOOR USE	OUTDOOR USE
Metals	Bare, plated or enamelled steel; bare, anodized or enamelled, aluminum "D"	+80	-40	X	
Electrostatic Coated Metal A	Polyester powder coat paint "D"	+80	-40	X	X
Electrostatic Coated Metal C	Epoxy powder coat paint "D"	+80	-40	N-A	N-A
Electrostatic Coated Metal D	Polyurethane powder coat paint "D"	+80	-40	X	X
Plastic Group II	Polyphenylene, oxide, polyphenylene sulphide	+80	-40	X	X
Plastic Group III	Polycarbonate, acetates, acrylics	+80	-40	N-A	N-A
Plastic Group IV	Polyethylene, Polypropylene, polybutylene	+80	-40	X	X
Plastic Group V	Polyamide, polyimide	N-A	N-A	N-A	N-A
Plastic Group VI	ABS, styrene, styrene acrylonitrile "D"	N-A	N-A	N-A	N-A
Plastic Group VII	PVC, (rigid), PVC plastized	+80			
Plastic Group VIII	Glassfilled polyester, glass filled epoxy	+80			

## ADDITIONAL CONDITIONS "D" : OCCASIONAL EXPOSURE TO DETERGENTS

This information and data is believed to be accurate and reliable. Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of this date, Link Solutions makes no representations as to the completeness or accuracy thereof. We place at your disposal the technical information necessary for the correct use of our products. As conditions and methods of use are beyond our control, that the person receiving the same will make their own determination as to the suitability for their purpose. We reserve the right to modify characteristics with the aim of improving the product and adapting it to the requirements of the market.

## APPENDIX 2 - COMPLIANCE DATA POLYESTER FILM SILVER

### UL - Underwriters Laboratories (UL969)

File Number: MH26760

This material is UL recognized for exposure indoors and outdoors to high humidity or occasional exposure to water. Due to the construction this only counts for the open printed label and not when its overlaminated.

The C-UL certification requires printing with "Suitable" thermal transfer ribbons

SUBSTRATE	MINIMUM TEMPERATURE (°C)	MAX. TEMPERATURE (°C)	INDOOR USE	OUTDOOR USE
Acrylic powder paint "D"	-40	+150	X	X
Aluminum "D"	-40	+150	X	x
Epoxy powder paint	N-A	N-A	N-A	N-A
Galvanized steel	N-A	N-A	N-A	N-A
Polyurethane powder coat paint	N-A	N-A	N-A	N-A
Stainless Steel "D"	-40	+80	x	x
Acrylonitrile butadiene styrene (ABS) "D"	-40	+80	x	x
Polyphenylene oxide/ether (PPOX)	-40	+80	x	x
Polystyrene (PS) "D"	-40	+80	x	x
Polypropylene "PP"	-	+80	x	-
Polyethylene "PE"	-	+80	x	-

### STATEMENT - HALOGEN

Halogens is a group of non-metallic elements. The most common one is chlorine, which exist in many chemicals and components.

Halogen Free has been defined by the IEC (International Electrotechnical Commission) standard IEC 61249-2-21: as meaning:

900 ppm maximum chlorine

900 ppm maximum bromine

1500ppm maximum total halogens

Link Solutions does not intentionally add halogens to our products. However, we cannot guarantee the presence of halogens below the IEC limit by our suppliers in the supply chain.

This would need to be assessed on a case-by-case basis.

Compounds containing the (Cl, F, Br, I) are quite commonly used, and fall outside of the definition of halogen-free as the elemental halogen is generally not present.

However, that does not exclude the presence of trace amounts by external sources.

Link Solutions does not routinely test for these substances as they are not expected to be present in our raw materials or production processes.

### TYPICAL VALUES

The listed technical data are typical values and give indications about the performance of the material only. They are not intended for specification purpose.

### PERFORMANCE OF THE PRODUCT

The performance of the product should always be tested in the actual application conditions. Our recommendations are based on our most current knowledge and experience. As our products are used in conditions beyond our control, we cannot assume any liability for damage caused through their use. Users of our products are solely responsible that the product is suitable for its intended application, and have determined such at their sole discretion. Users must comply with any applicable legislation and/or testing requirements for the finished article, and are responsible for bringing their products to market.

This publication does not constitute any warranty, express or implied, and is intended only for the recipient and cannot therefore be transferred to any third party. We cannot assume any liability for the use of our products in conjunction with other materials.

**APPENDIX 3 - COMPLIANCE DATA POLYMERIC VINYL FILM FILM SILVER**
**THERMAL TRANSFER METALLIC / SILVER PRINTABLE FILM**

PROPERTIES	TEST METHOD	TYPICAL VALUE
Substance basis weight	ISO 536	103 g / m <sup>2</sup>
Facestock thickness	ISO 534	Aprox 80 micron ± 10%

**FILM THERMAL PROPERTIES**

PROPERTIES	TEST METHOD	TYPICAL VALUE
Service Temperature Range		-40° - 110°C (-40°F to 230°F)
Minimum application temperature		0°C

**ADHESIVE PHYSICAL** - The adhesive is a distinguished adhesive offering very high ageing stability and features excellent resistance against chemicals, heat and UV light. It has a high peel adhesion on high and medium surface energy.

PROPERTIES	TEST METHOD	TYPICAL VALUE
High initial tack	FTM 9 Glass	10 N/25mm
Peel Adhesion 90°C	FTM 2 24hr on stainless steel	9N/25mm
Adhesive Type	Strong permanent, solvent based acrylate adhesive	Strong permanent, solvent based acrylate adhesive
Adhesive Weight	FTM 12	25 g/m <sup>2</sup>

**ADHESIVE TESTING** - The adhesive needs a certain time to reach its final adhesion, we recommend waiting at least 24 hours or better 72 hours after dispensing the the label to the substrate before proceeding with any performance test.

**TYPICAL VALUES**

The listed technical data are typical values and give indications about the performance of the material only. They are not intended for specification purpose.

**PEEL ADHESION:**

FTM1: 180 °, 300mm/min, dwell time  
48hours

SURFACE	N/25MM		SURFACE	N/25MM
ABS	19,5		PA6	20,0
Aluminium	23,0		Polycarbonate (PC)	N-A
Automotive lacquered panels	23,0		Polyester (PET)	N-A
PA6 + GF30	N-A		Polypropylene (PP)	N-A
HDPE	6,0		Polystyrene (PS)	N-A
LDPE	3,8		Powder Coated Panel	N-A
Glass	26,0		Stainless Steel	22,0



# Print and Seal Labels: Application Guide



This information and data is believed to be accurate and reliable. Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of this date, Link Solutions makes no representations as to the completeness or accuracy thereof. We place at your disposal the technical information necessary for the correct use of our products. As conditions and methods of use are beyond our control, that the person receiving the same will make their own determination as to the suitability for their purpose. We reserve the right to modify characteristics with the aim of improving the product and adapting it to the requirements of the market.