PLEXIGLAS® & EUROPLEX® films for Self-Adhesive Tapes

Do not loose your face!

EVONIK INDUSTRIES

SEPT, 2013
Version 1

Do not loose your face!

Many synthetic polymers are attacked by UV radiation and products made using these materials may crack or disintegrate.
The problem is known as *UV degradation*, and is a common problem in products exposed to sunlight.

PLEXIGLAS® films & EUROPLEX® films

Boost the performance of your tapes in outdoor applications!

Do not loose your face!

PLEXIGLAS® films

Acrylic film

Durability	High UV and Weather Resistant
Protection	UV blocking
Functionality	Aesthetic High Transparency Lightning Safety Good Printability Easy Processability

EUROPLEX® films

Co-extruded PVDF/Acrylic film

Durability	High UV and Weather Resistant
Protection	UV blocking Chemical resistance
Functionality	Easy to clean Good Back side Printability Easy Processability

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PLEXIGLAS® films

EUROPLEX® films

Durability

High UV and Weather Resistance

High durability in outdoor applications
No color change, yellowing or color fading under long term outdoor exposure.

Accelerated weathering resistance (ISO 4892-2 method A, cycle 1, 65% RH)

PLEXIGLAS® 0F014	Clear, Glossy	5.000 hs	aprox. 5 years
PLEXIGLAS® 0F041	Clear, Glossy	5.000 hs	aprox. 5 years
PLEXIGLAS® 0F016	Clear, Glossy	8.000 hs	aprox. 8 years
PLEXIGLAS® 0F040	Clear, Glossy	8.000 hs	aprox. 8 years
PLEXIGLAS® WF002	White	10.000 hs	aprox. 10 years
PLEXIGLAS® 0F032	Matt	12.000 hs	aprox. 12 years

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PLEXIGLAS® films

EUROPLEX® films

Durability

High UV and Weather Resistance

High durability under temperature changing
Service Temperature in between -40 °C and +85 °C
without fading or color changing.

Yellowing Index (ISO EN 410)

		after 2.000hs **38 °C, 55-65% rh**	after 1.750hs, **85 °C, 85% rh**
PLEXIGLAS® 0F016	D65/10°	0,80	3,04
PLEXIGLAS® 0F014	D65/10°	0,90	3,04

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PLEXIGLAS® films

EUROPLEX® films

Protection

UV Blocking

PLEXIGLAS® and EUROPLEX® are able to block UV radiation in between 98% up to 99,8% at wavelength 280 – 380 nm.

Substrate protection

PLEXIGLAS® and EUROPLEX® protect other polymeric substrates against degradation caused by UV radiation.

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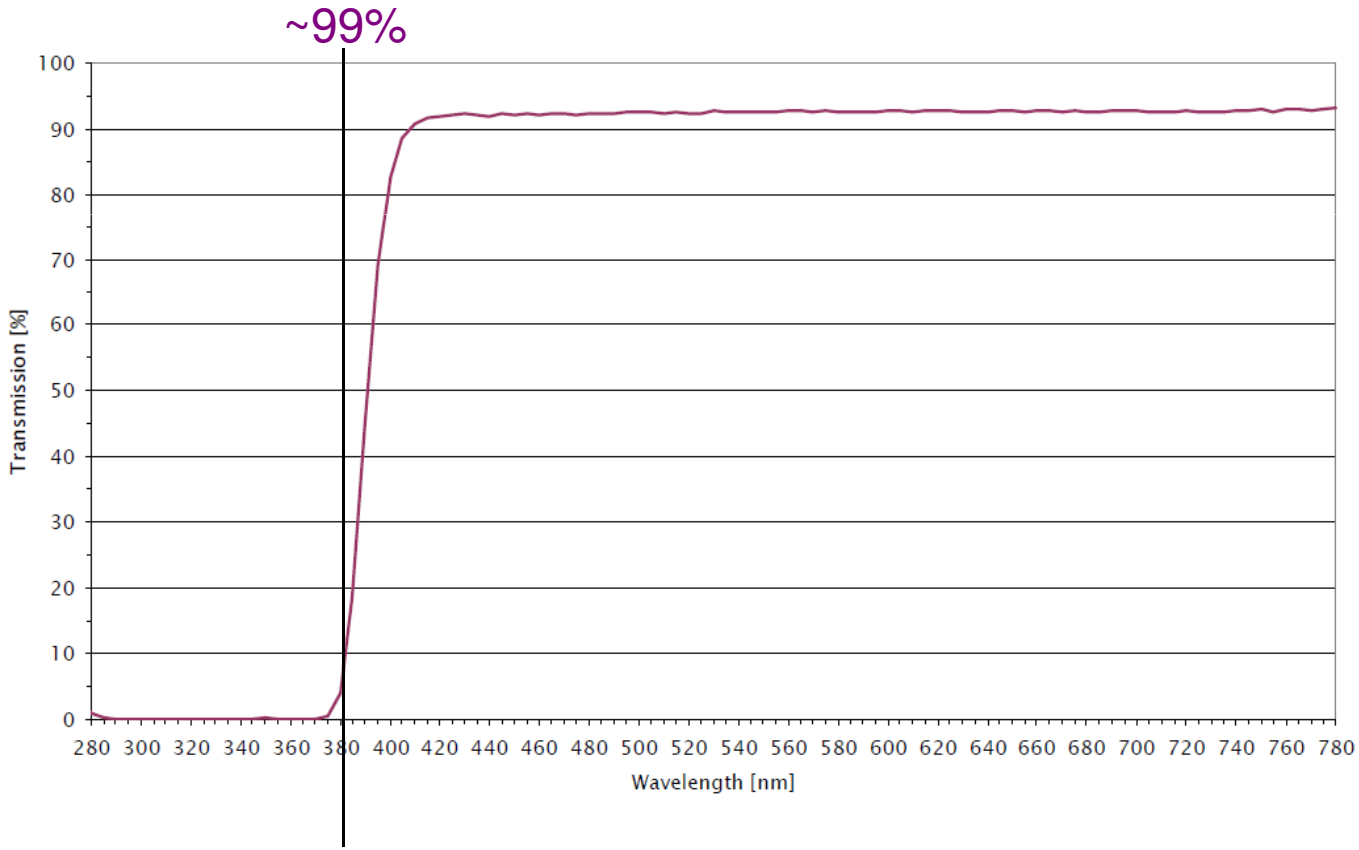
Protection - UV blocking

Spectral transmittance from PLEXIGLAS® film 0F008, thickness: 53 µm



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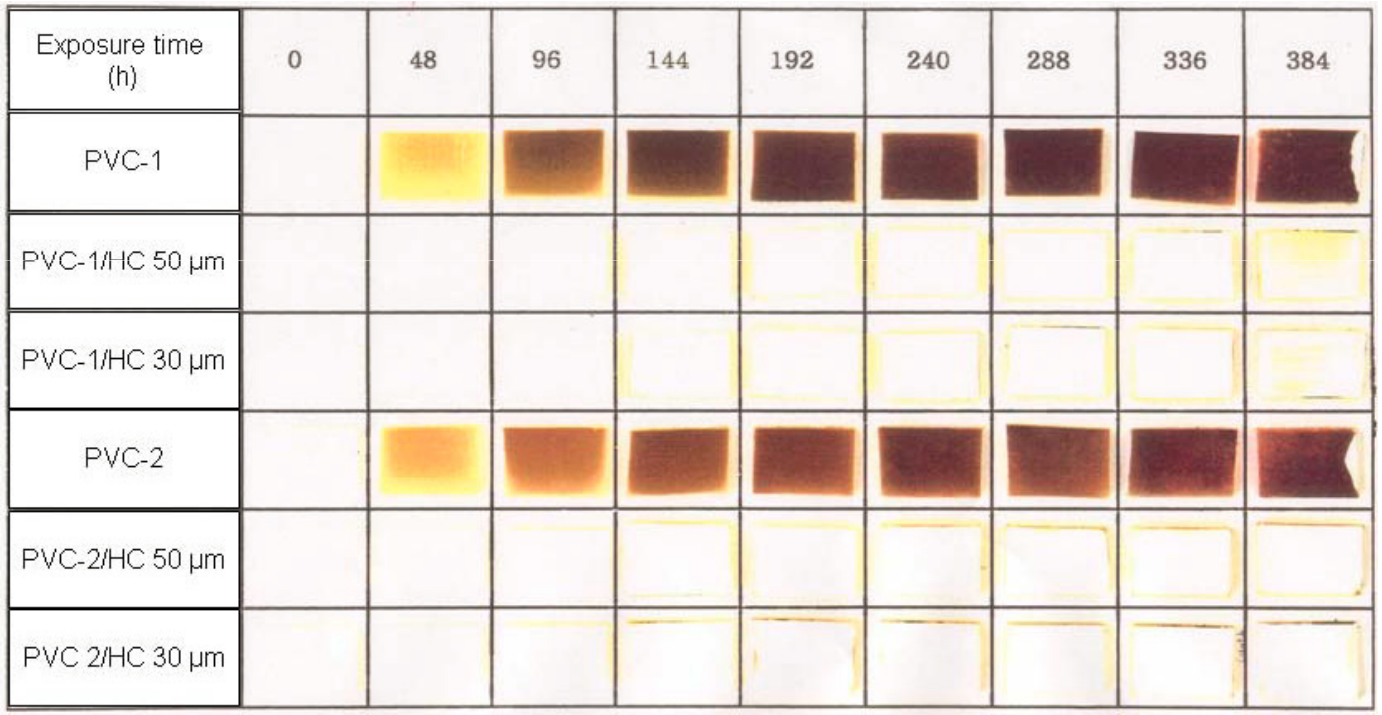
Protection - UV blocking

Calendered PVC Film protected by EUROPLEX® Film HC 99710



Weathering Test

Super UV-Tester SUV-W11
Black Panel Temperature: 63 °C

Intensity: 83mW/cm²; 300-400 nm
Relative Humidity: 60% rh

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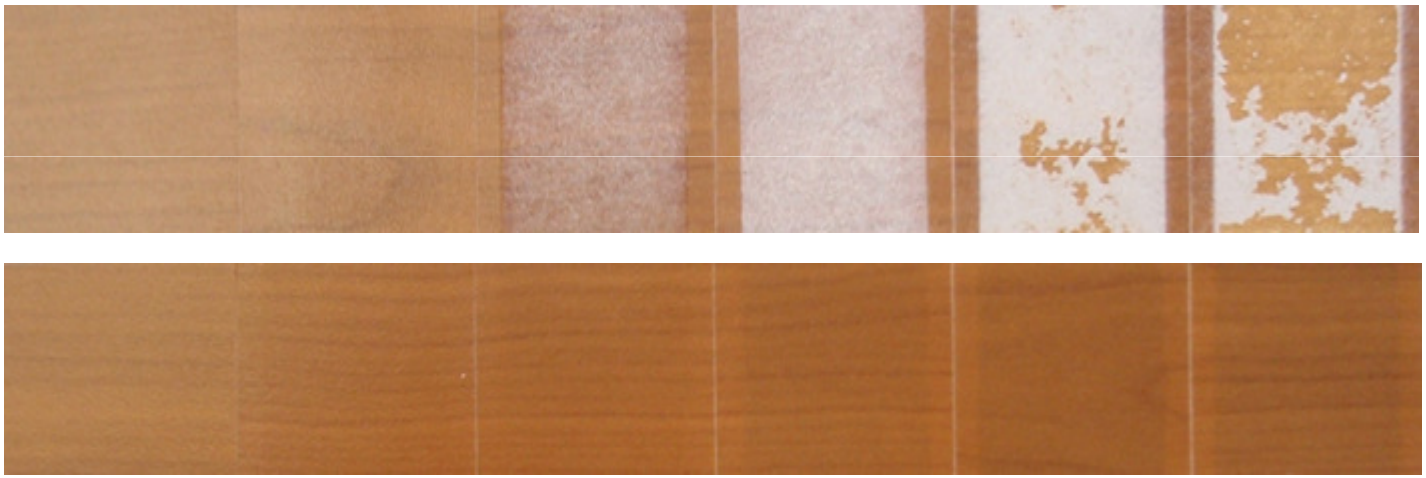
Protection - UV blocking

High Pressure Laminates protected with PLEXIGLAS® 99836

	Initial	1.000hs	2.500hs	5.000hs	7.500hs	10.000hs
No Protection						
Protected by PLEXIGLAS® 99836						



Test method:

Xenotest® BETA LM
DIN EN ISO 4892-2, method A, cycle 1

60 W/m²	+/- 2 W/m²	energy (300 – 400 nm)
65 °C	+/- 3 °C	black standard temperature
102 / 18 minutes		dry / wet cycle
65%	+/- 10%	rel. humidity (during dry cycle)
38 °C	+/- 3 °C	sample room temperature

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Protection - UV blocking

PLEXIGLAS® and EUROPLEX® are able to block UV radiation at wavelength in between 280 – 380nm therefore pigments not stable at low light will be attacked.

Pigments >6 on blue scale or >5 on grey scale are recommended.

High Pressure Laminates protected by EUROPLEX® HC 99716

Non low light stable pigments

Initial Sample 2.000hs

Low light stable pigments

Initial sample 2.000hs

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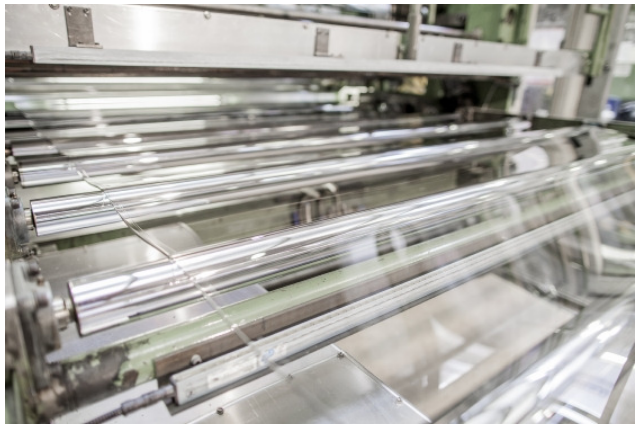

PLEXIGLAS® films

Functionality

Aesthetic

Color Stability
No color change or fade out for long term under UV light exposure.

Coatings & Metallization
The films can be coated by a wide variety of coatings methods or metallization by roll-to-roll process.

Different colors and surface finishing available
- High transparent
- Gloss, Matt, One side matt / One side gloss
- Transparent or Colored
- Light Scattering
- Embossed structures
- Opaque or Translucent

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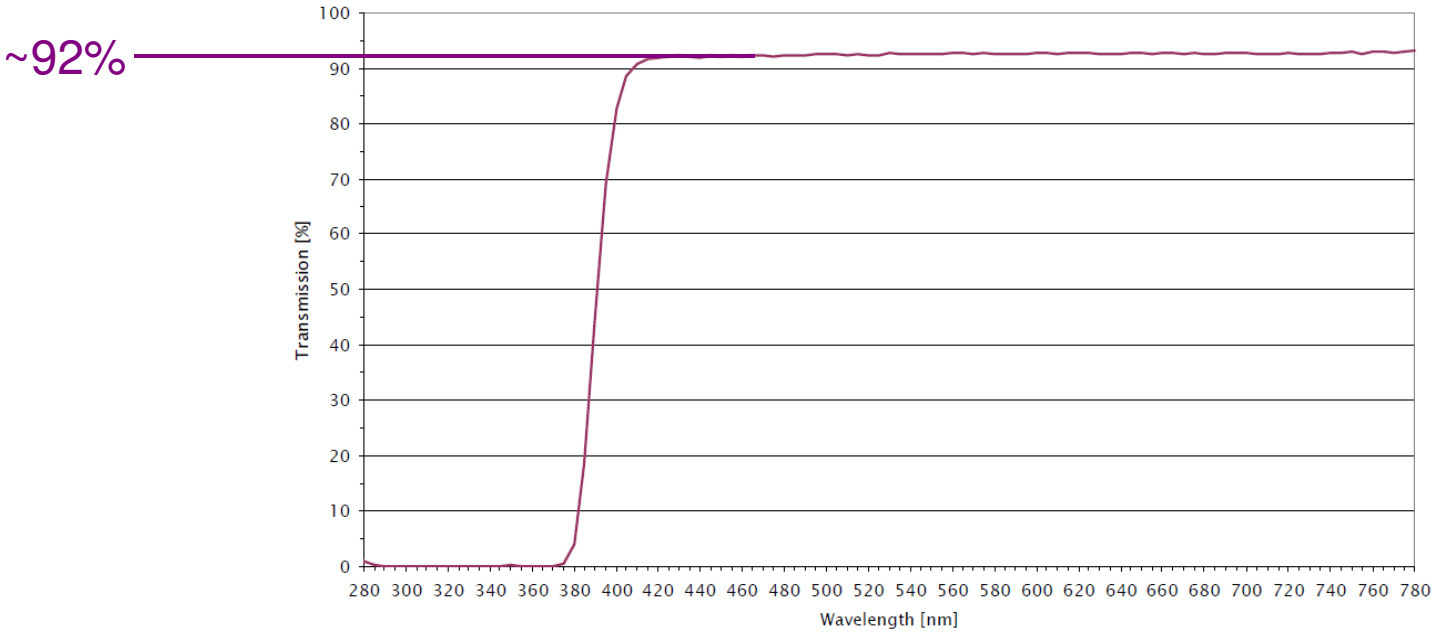
PLEXIGLAS® films

Functionality

High Transparency

Colorless PLEXIGLAS® has a light transmission of up to 92%.
Clear Optical Quality.

Spectral transmittance from PLEXIGLAS® film 0F008, thickness = 53 µm



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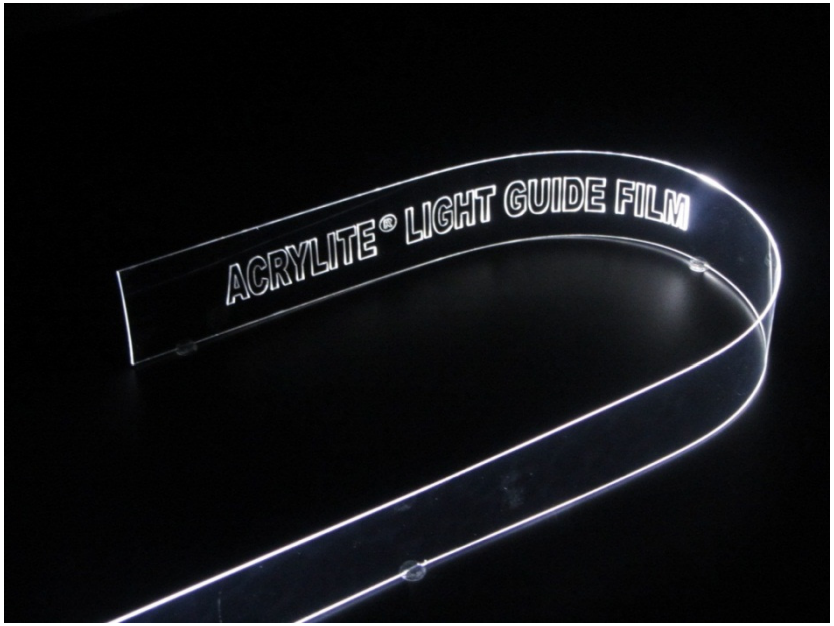

PLEXIGLAS® films

Functionality

Lightning

Light Guide film

PLEXIGLAS® 0F058 is able to guide the light coming from small LED´s sources for long distances.

Thicknesses: 200 µm, 375µm and 500µm
Width: 1.270 mm

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PLEXIGLAS® films

Functionality

Safety

Holograms

PLEXIGLAS® films provides a high optical quality for holograms.

Coatings & Metallization

The films can be coated by a wide variety of coatings methods or metallization by roll-to-roll process.

Destructible

Brittle acrylic films can be produced in order to be used as destructible material.

Destructible and UV Resistant Acrylic Films (ISO 527-3)

		Elongation MD	Tensile Strength MD
PLEXIGLAS® WF006	white	7%	49 Mpa
PLEXIGLAS® WF007	white	25%	41 Mpa
PLEXIGLAS® 0F058		6%	88 Mpa

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EUROPLEX® films

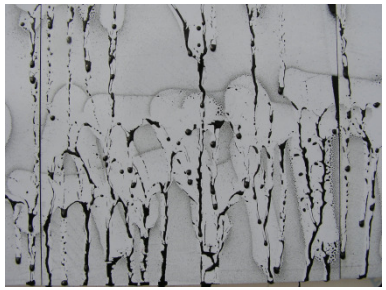
Functionality

Easy to Clean

PVDF Polyvinylidene Fluoride Top Layer
Surface Tension: 23mN/m (DIN 53364)
Due to its very low surface tension, PVDF provides:

- Easy to clean or “Anti-graffiti” effect

- Anti-Soiling effect



EUROPLEX® HC 99710	50µm	45µm PMMA layer + 5µm PVDF top layer
EUROPLEX® HC 0F052	80µm	72µm PMMA layer + 8µm PVDF top layer

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EUROPLEX® films

Functionality

Chemical Resistance

PVDF Polyvinylidene Fluoride Top Layer

Inorganic Acids	Excellent
Organic Acids	Excellent - Moderate for Acetic Anhydride
Alkali	Excellent
Hydrocarbons	Excellent - Very Good for Benzene
Halogenated HC	Excellent
Alcohol	Excellent
Ester	Very Good - Good
Ketone	Good
Amine	Very Good - Good
Aldehyde	Very Good
Ether	Very Good - Good
Cyanide	Very Good

1- Excellent
2- Very Good
3- Good
4- Moderate

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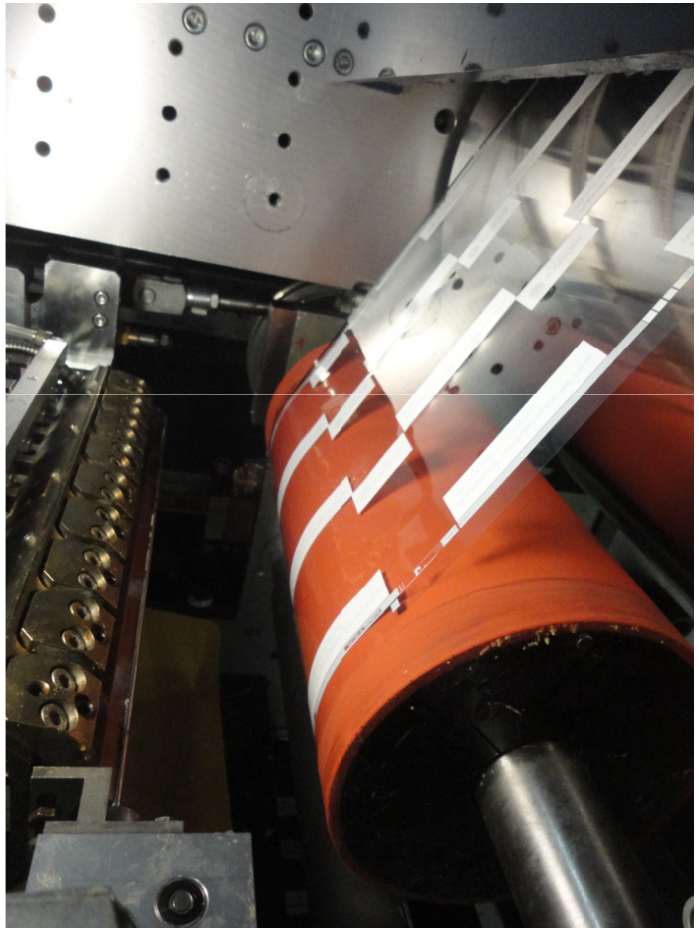

PLEXIGLAS® films

EUROPLEX® films

Functionality

Easy Processability

No plasticizer
No migration over the time!

Roll-to-roll processability
Pressure Sensitive Adhesives can be applied directly onto the films by roll-to-roll process.

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PLEXIGLAS® films

EUROPLEX® films

Functionality

Easy to Print

High Quality and Graphic Printings

PLEXIGLAS® has a Surface Tension of 50mN/m (DIN 53364)

PLEXIGLAS® films can be printed by roll-to-roll technologies such as:

- Digital printing
- Flexography
- Gravure printing
- Screenprinting

EUROPLEX® is suitable only for back-side printing – on PMMA side.

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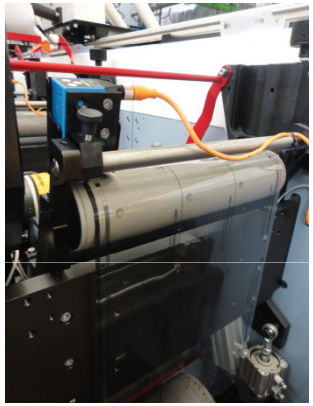
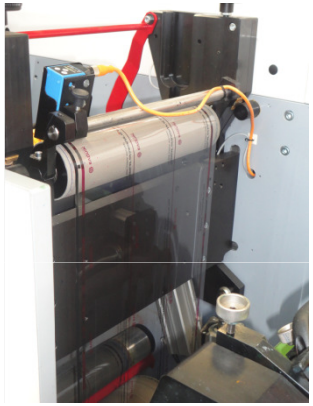
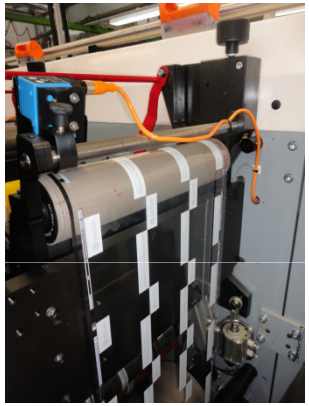
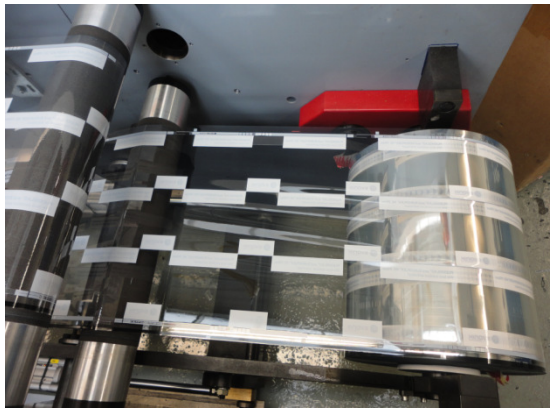
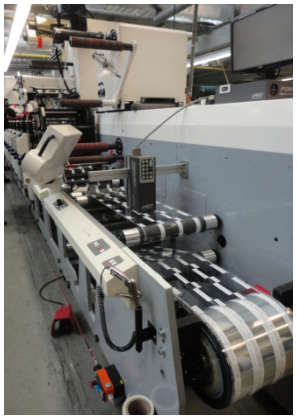
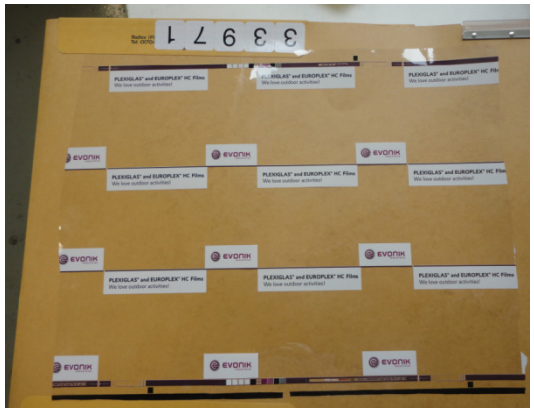
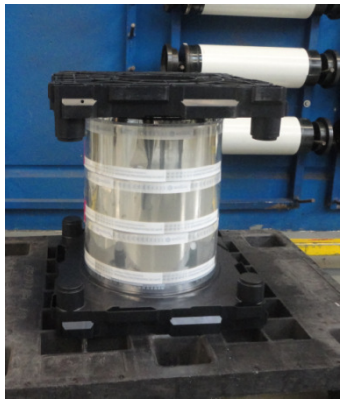
UV Flexography printing on PLEXIGLAS® 0F016 60µm

Gallus Printing Machine

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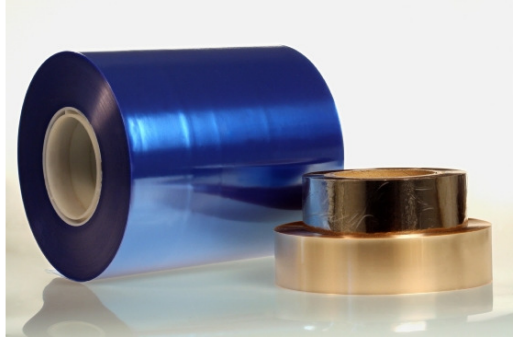

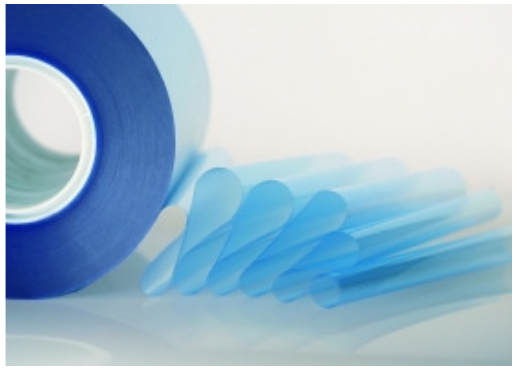

PLEXIGLAS® films

EUROPLEX® films

Functionality

Easy to Cut

PLEXIGLAS® and EUROPLEX® films can be cut by:

- Roll-to-roll die-cutting
- Laser cutting
- Slitting

We love outdoor activities!

Add performance to your tape

Standard Tapes

PE, PP, PVC, PET, etc film backing
Adhesive (PSA)
Release coating
Liner

Performance Tapes

PLEXIGLAS® & EUROPLEX® films
Adhesive (PSA)
Release coating
Liner

Performance Tapes based on PLEXIGLAS® and EUROPLEX®:

No yellowing or color changing under long term weathering and UV exposure.

Weather and Chemical Resistance.

Easy to clean or “Anti-Graffiti” effect.

Light Guide.

High Transparency - Optically clear.

High Light Transmission – 92%.

UV Blocking.

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Possible Applications:

- Optically Clear Tapes
- Anti-Conterfeting Tapes
- Tamper Evident Tapes
- Surface Protection Tapes
- Marking Tapes
- Safety & Warning Tapes
- Reflective Tapes
- Eletronics Mounting Tapes

Do not loose your face over the time!

Be protected by

PLEXIGLAS® films

EUROPLEX® films

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