EUROPLEX®

EUROPLEX®
COC Film

EUROPLEX® Films for Microfluidic Applications

Product Characteristics

High transmission

EUROPLEX® COC Films for microfluidic applications provide excellent light transmission and brilliance due to a low intrinsic absorption (Figure 1).

Chemical resistance

EUROPLEX® COC Films exhibit outstanding chemical resistance for a variety of solvents, e.g. acetone, ethanol, isopropanol, ethyl acetate, as well as very good acid and base resistance.

Thermal stability

Two types of EUROPLEX® COC Films are available with glass transition temperatures of 78 °C and 142 °C, respectively. This helps customers to realize applications with various requirements in thermal stability.

Biocompatibility

With regard to the composition, the applied COC polymer material complies with the regulations of the European Pharmacopoeia, Monograph 3.1.3. “Polyolefines”.

Processability

EUROPLEX® COC Films can be easily processed by laser cutting and laser welding.

Bonding-process

The following bonding-processes are suitable:
- Laser welding
- Thermal bonding
- Solvent bonding, e.g. using cyclohexane or toluene
- Ultra sonic welding

Service

Cleanroom conditions

An important point for microfluidic devices:
Röhm has the possibility to produce under cleanroom conditions.

Masking films

Masking films are typically applied on both sides but can be adapted per customer’s needs.

In-house cutting

In-house cutting allows customers to have their individual requirements met. The customer receives an all-in-one quality product and service.

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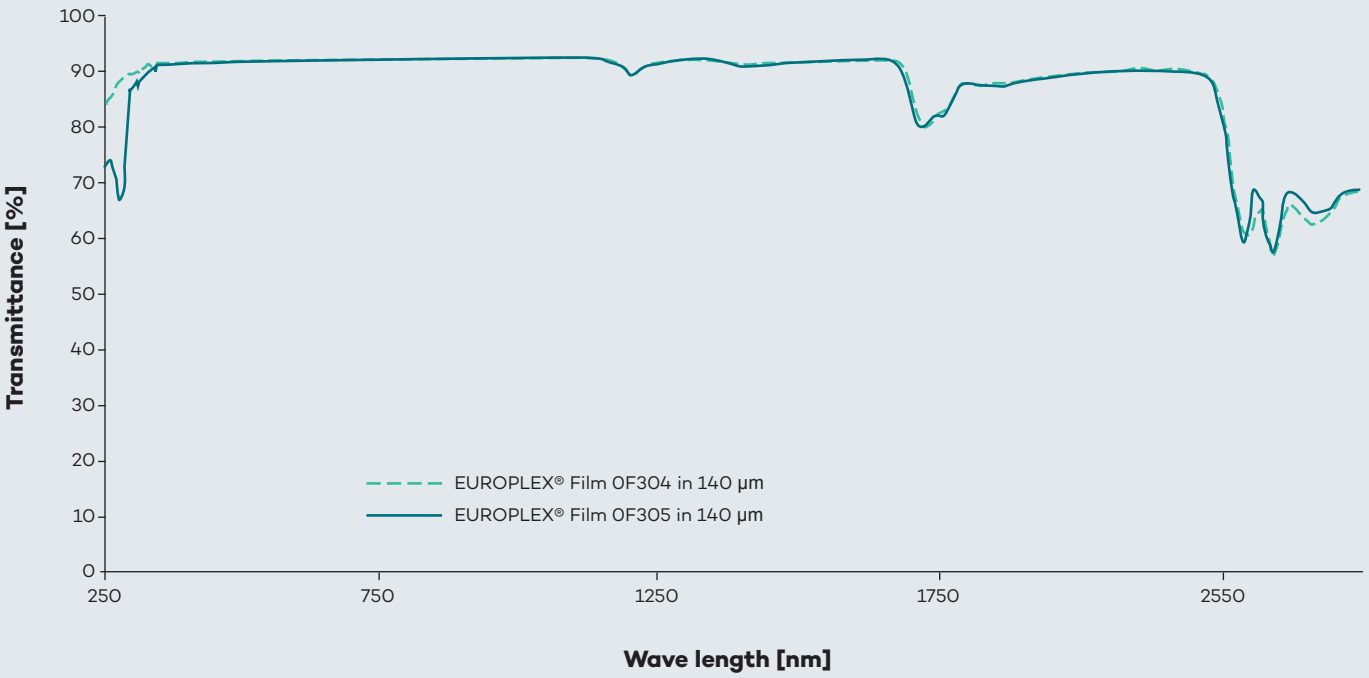

Figure 1: Transmittance as a function of wave length of EUROPLEX® COC films for microfluidic applications.

Technical data EUROPLEX® Film 0F304						
Properties	**Test method**	**Unit**	**Values, chill roll**			
Thickness		µm	80	125	140	240
Light transmittance (D65/10°)	ISO 13468-2	%	91	91	91	91
UV transmittance (280 – 380)	ISO EN 410	%	90.6	90.4	90.2	89.8
Haze (@23°C)	ASTM D1003	%	0.3	0.3	0.3	0.4
Refractive index (@23°C)	ISO 489		1.53	1.53	1.53	1.53
Glass transition temperature T_g (10 K/min)	ISO 11357	°C	78	78	78	78
Max. water absorption (@23 °C)	ISO 62	%	0.01	0.01	0.01	0.01
Surface energy (@23 °C)	AN-SOP 1827	mN/m	35.2	35.2	35.2	35.2
Tensile strength	ISO 527-3	MPa	50	52.5	55	57
Nom. strain at break	ISO 527-3	%	11	6.6	4.5	4.5
Tensile stress at break	ISO 527-3	MPa	49	48	48	48
Specific gravity	IOS 1183	g/cm^3	1.01	1.01	1.01	1.01

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Technical data EUROPLEX® Film 0F305						
Properties	**Test method**	**Unit**	**Values, chill roll**			
Thickness		µm	80	125	140	240
Light transmittance (D65/10°)	ISO 13468-2	%	91	91	91	91
UV transmittance (280–380)	ISO EN 410	%	88.6	87.7	87.3	85.3
Haze (@23°C)	ASTM D1003	%	0.15	0.15	0.15	0.15
Refractive index (@23°C)	ISO 489		1.53	1.53	1.53	1.53
Glass transition temperature T_g (10 K/min)	ISO 11357	°C	142	142	142	142
Max. water absorption (@23°C)	ISO 62	%	0.01	0.01	0.01	0.01
Surface energy (@23°C)	AN-SOP 1827	mN/m	34.4	34.4	34.4	34.4
Tensile strength	ISO 527-3	MPa	67	64	61	59
Nom. strain at break	ISO 527-3	%	2.2	2.5	2.5	2.5
Tensile stress at break	ISO 527-3	MPa	-	-	-	-
Specific gravity	IOS 1183	g/cm³	1.01	1.01	1.01	1.01

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