

TECHNICAL INFORMATION

EUROPLEX® COC 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.

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

Clean-room conditions

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

Masking-films on both sides

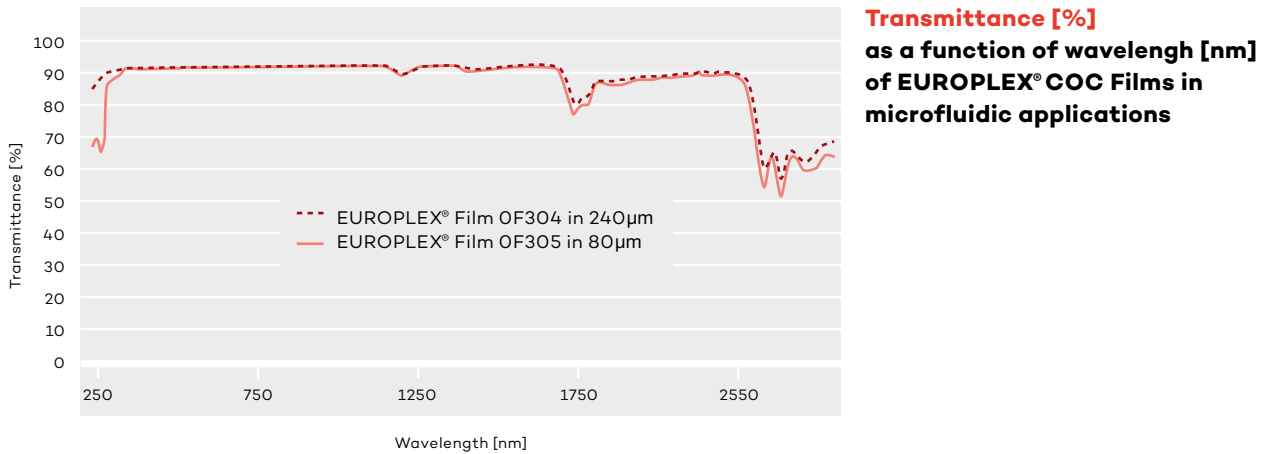
Masking-films can be applied per customer's needs.

In-house cutting

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



Diagram of Transmittance



Technical Data EUROPLEX® Film OF304

Properties	Unit	Parameter	Standard	Values			
EUROPLEX® COC Films for microfluidics				EUROPLEX® Film OF304, 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	90,6	90,6	90,6
Haze	(%)	@23°C	ASTM D1003	0,3	0,3	0,20	0,4
Refractive index	-	@23°C	ISO 489	1,53	1,53	1,53	1,53
Glass transition temp. (Tg)	°C	(10°C/min)	ISO 11357	78	78	78	78
Max. water absorption	(%)	@23°C	ISO 62	0,01	0,01	0,01	0,01
Surface energy	(mN/m)	@23°C	AN-SOP 1827	35,2	35,2	35,2	35,2
Tensile strength	MPa	-	ISO 527-3	50	52,5	55	57
Nom strain at break temperature Tg (DSC)	(%)	-	ISO 527-3	11	6,6	4,5	4,5
Tensile stress at break	MPa	-	ISO 527-3	49	48	48	48
Specific gravity	(g/cm ²)	-	IOS 1183	1,01	1,01	1,01	1,01

Technical Data EUROPLEX® Film OF305

Properties	Unit	Parameter	Standard	Values			
EUROPLEX® COC Films for microfluidics				EUROPLEX® Film OF305, 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	90,2	90,2	90,2	90,2
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 temp. (Tg)	°C	(10°C/min)	ISO 11357	142	142	142	142
Max. water absorption	(%)	@23°C	ISO 62	0,01	0,01	0,01	0,01
Surface energy	(mN/m)	@23°C	AN-SOP 1827	34,4	34,4	34,4	34,4
Tensile strength	MPa	-	ISO 527-3	67	64	61	59
Nom strain at break temperature Tg (DSC)	(%)	-	ISO 527-3	2,2	2,5	2,5	2,5
Tensile stress at break	MPa	-	ISO 527-3	-	-	-	-
Specific gravity	(g/cm ³)	-	IOS 1183	1,01	1,01	1,01	1,01

® = registered trademark

PLEXIGLAS and EUROPLEX are registered trademarks of Röhm GmbH, Darmstadt, Germany.

Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.