ZEONORFILM®
ISOTROPIC OPTICAL FILMS

ZeonorFilm®

AN OPTICAL FILM WITH BENEFITS THAT ARE EASY TO SEE: HIGH TRANSPARENCY, LOW WATER ABSORBENCY AND LOW BIREFRINGENCE.

OPTES

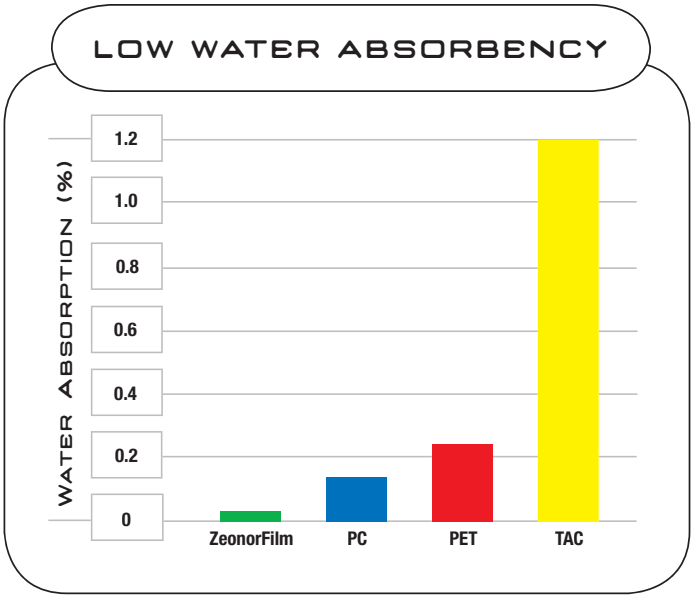
ZeonorFilm® isotropic optical film applications

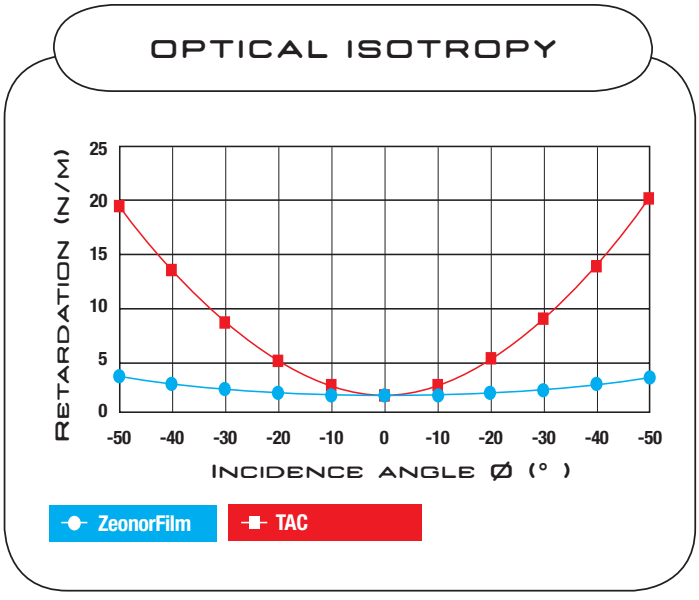
ZeonorFilm® isotropic films exhibit excellent transparency, dimensional stability, and light transmission for display light management applications.

Applications include polarizers and support films in polarizers, LCD panels, touchscreens, mobile phones and electronic paper applications. Additionally, ZeonorFilm can be used for bio-diagnostic applications.

ZeonorFilm is manufactured by Optes, Inc., a fully owned subsidiary of ZEON CORPORATION.

ZeonorFilm® isotropic optical film properties



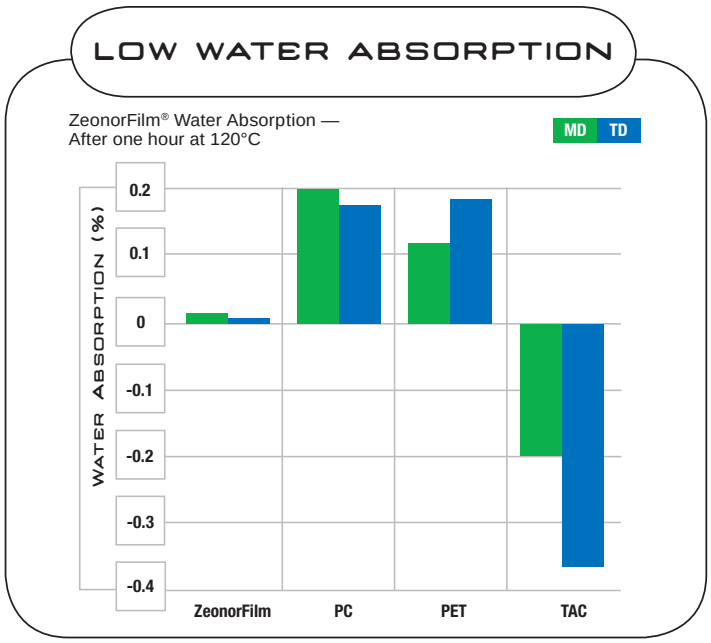


LOW WATER ABSORPTION

ZeonorFilm absorbs virtually no moisture and shows no dimensional changes even under conditions of high temperature and humidity. This allows for a reduction in white and black spots on colored displays and superior detection in bio-diagnostic devices.

OPTICAL ISOTROPY

ZeonorFilm exhibits uniform retardation across a wide incidence (viewing) angle.



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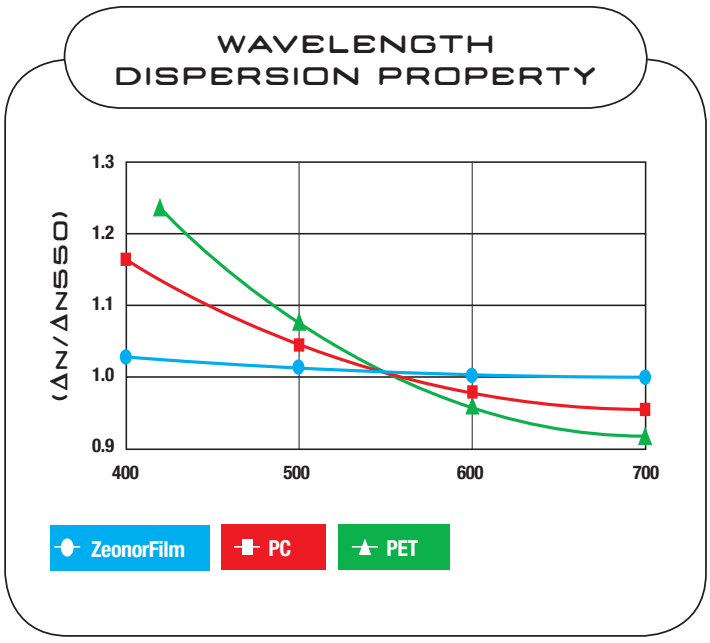
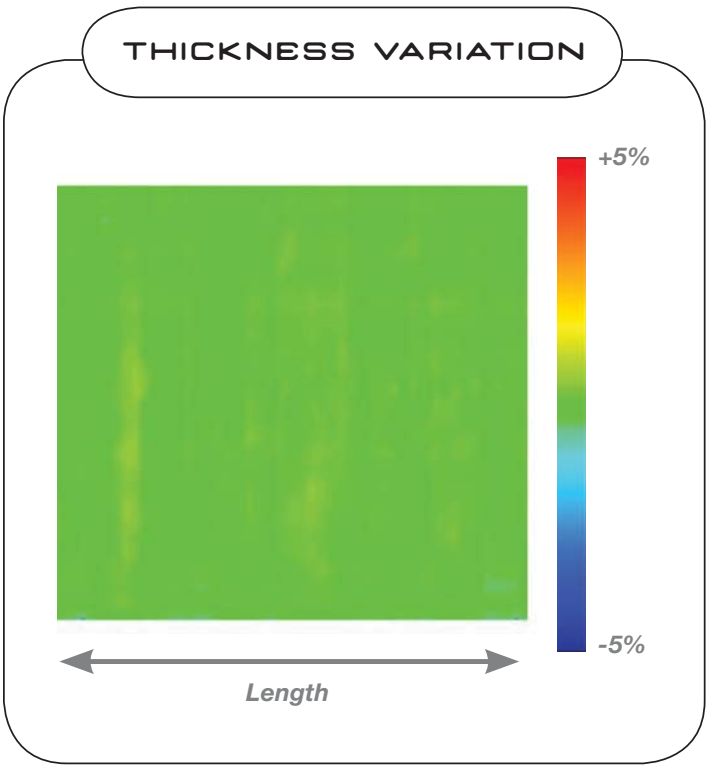


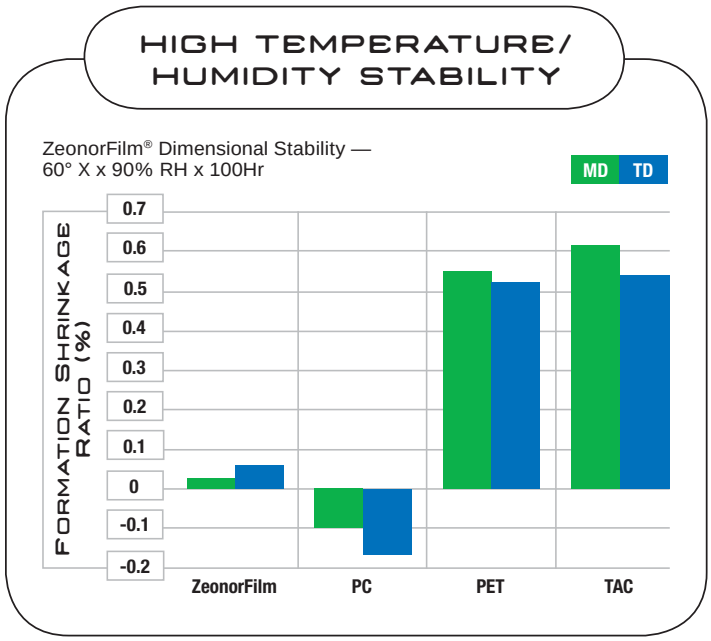
WAVELENGTH DISPERSION PROPERTY

ZeonorFilm exhibits extremely flat wavelength dispersion, making it well-suited for broad-wavelength plates.



UNIFORM THICKNESS

ZeonorFilm is produced in a highly controlled process enabling superior uniformity of thickness from edge to edge. This uniformity of thickness contributes to superior image quality and read-through.



HIGH HEAT STABILITY

ZeonorFilm has excellent dimensional stability when exposed to elevated temperatures. This heat resistance allows ZeonorFilm to be used in demanding applications, including mobile phones and automotive displays where long-term heat exposure is common.

ZeonorFilm® optical film is perfect for display and bio-diagnostic applications

TOUCHSCREENS • LCD DISPLAYS • POLARIZERS
BIO-DIAGNOSTIC DEVICES

ZeonorFilm is available in three basic configurations: isotropic films, single-direction or bi-axial stretched retardation films (ZM-series, ZB-series) and diagonally stretched retardation films (ZD-series).

ZeonorFilm optical films are produced by OPTES Inc., a wholly owned subsidiary of ZEON.

ZESHIN INC.
16F Star Tower, 737, Yeoksam-dong
Kangnam-gu, Seol 135-984 KOREA
Telephone: +82.2.761.7030
Fax: +82.2.786.7221

Zeon CSC Corporation
3rd Fl. 266, Sec1, Wen Hwa 2 Road,
Linkou Hsiang, Taipei Hsien,
Taiwan, R.O.C.
Telephone: +886.2.2609.2156
Fax: +886.2.2600.6413

Zeon Trading (Shanghai) Co., Ltd.
Room 319, No. 500, Bingke Road,
Wai Gao Qiao Free Trade
Zeon, Shanghai, 200131, CHINA
Telephone: +86.21.64893343
Fax: +86.21.64420569

OPTES
Shin Marunouchi Center Building
1-6-2 Marunouchi
Chiyoda-ku, Tokyo
100-8246, JAPAN
Telephone: +81.3.3216.1793
Fax: +81.3.3216.1777

Zeon Chemicals L.P.
4111 Bells Lane
Louisville, KY 40211 USA
Telephone: +1.502.775.2000
Fax: +1.502.775.2025

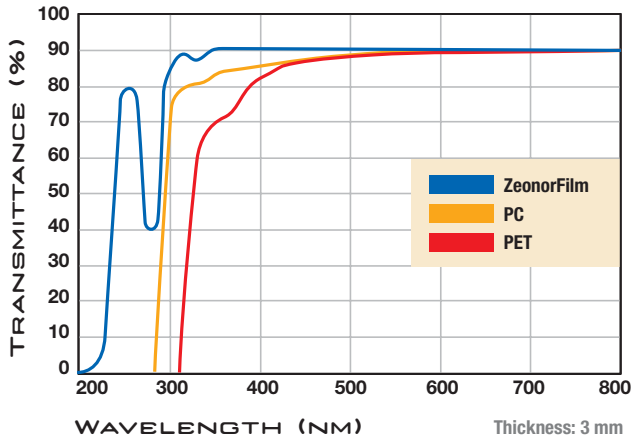
Zeon Europe GmbH
Niederkasseler Lohweg 177
40547 Düsseldorf, GERMANY
Telephone: +49(0)211.52670
Fax: +49(0)211.5267160

OPTES

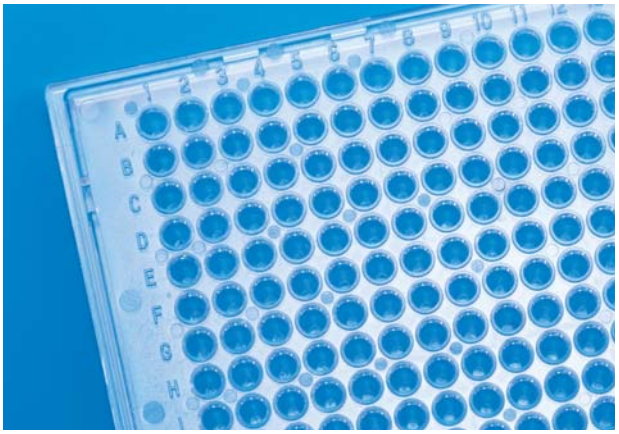
www.optes.co.jp
www.zeonex.com

ZeonorFilm® isotropic optical film properties

HIGH TRANSPARENCY



INERT SURFACE



HIGH TRANSPARENCY

ZeonorFilm exhibits high transparency (92% light transmittance) and excellent turbidity (haze value <0.1%), for enhanced brightness.

INERT SURFACE

ZeonorFilm is manufactured from Zeon's cyclo olefin polymer (COP). COP is known for its excellent optical properties and also for being a high-purity resin. ZeonorFilm has an inert surface which makes it ideal for sensitive bio-diagnostic devices.

LOW BIREFRINGENCE

Item	Measurement method	Unit	ZeonorFilm	PC		PET	TAC
Membrane formation method			Melt extrusion	Melt extrusion	Solvent cast	Melt extrusion	Solvent cast
Film thickness		µm	100	100		100	80
Total light transmittance	ASTMD1003	%	92	91	91	92	92
Dispersion (550nm transmittance)		%	91	90	90	89	92
Haze		%	<0.1	0.3	0.2	1.8	0.3
Retardation	Parallel Nichols method	—	3	20	10	25	3