

Trizod™ OP

Optical Grade Clear Polycarbonate Plate

Product Description

Trizod™ OP is an Optically Clear Polished, ultraviolet-stabilized polycarbonate sheet specially engineered for superior optical performance. It also offers improved flammability performance over General Purpose PC. Its UL94 flammability rating is V2 at a thickness of 1.5 mm (0.059") and 3.0 mm (0.118") and V0 at a thickness of 6.0 mm (0.236"). Trizod™ OP is designed for applications requiring high optics, excellent impact strength, outstanding clarity, and UV resistance. Trident's proprietary annealing process improves characteristics such as strength, chemical resistance, and increases dimensional stability over a wide temperature range which allows extensive machining to ensure tight tolerances.

Characteristics

- Excellent impact resistance
- Excellent dimensional stability
- Excellent optical clarity
- Good electrical properties
- Good heat resistance
- UL flame rated

Applications

- Windows
- Site glasses
- Machine guards
- Manifolds
- Instrument components
- Control panels



General

Annealed Plate: .250 through 2.500" thick Plate sizes: 24x48 • 48x96

Optically Clear Polished Finish • 4 mil Adhesive PE Film Masked

Agency ratings: ASTM D3935 PC0136 • UL94 V0

Standard color: Transparent Clear (Blue tint)

Physical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.043	lb/in ³	1.200	g/cm ³	ASTM D1505
Water Absorption, Immersion at 73°F (23°C):					ASTM D570
24 Hours	0.12	%	0.12	%	
Equilibrium	0.30	%	0.30	%	
Optical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Transmittance at 0.125-in (3.2-mm) Thickness	87	%	87	%	ASTM D1003
Haze at 0.125-in (3.2-mm) Thickness	<0.8	%	<0.8	%	ASTM D1003
Refractive Index	1.587		1.587		ASTM D542
Mechanical	Nominal Value	Unit	Nominal Value	Unit	Test Method
Tensile Strength (Yield)	9400	psi	65	Mpa	ASTM D638
Tensile Strength (Break)	10200	psi	70	Mpa	ASTM D638
Tensile Elongation (Yield)	6.50	%	6.50	%	ASTM D638
Tensile Elongation (Break)	115	%	115	%	ASTM D638
Tensile Modulus	350000	psi	2415	Mpa	ASTM D638
Flexural Stress at 5% strain	12500	psi	86	Mpa	ASTM D790
Flexural Modulus	340000	psi	2346	Mpa	ASTM D790

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Impact	Nominal Value Unit	Nominal Value Unit	Test Method
Notched Izod Impact at .125"	18 ft-lb/inch	961 J/m	ASTM D256
Hardness	Nominal Value Unit	Nominal Value Unit	Test Method
Rockwell Hardness	112 R scale	112 R scale	ASTM D785
	70 M scale	70 M scale	ASTM D785
Thermal	Nominal Value Unit	Nominal Value Unit	Test Method
Deflection Temperature 66 psi	288 °F	142 °C	ASTM D648
Deflection Temperature 264 psi	270 °F	132 °C	ASTM D648
Coefficient of Linear Thermal Expansion	3.34 E-05 in/in/°F	6.0 E-05 mm/mm/°C	ASTM D696
Thermal Conductivity	1.39 Btu•in/(h•ft ² •°F)	0.20 W/(m•K)	ASTM C177
Relative Temperature Index: 0.059-in (1.5-mm) Thickness			(UL746B)
Mechanical without Impact	257 °F	125 °C	
Electrical	239 °F	115 °C	
Mechanical with Impact	257 °F	125 °C	
Specific Heat	0.28 Btu/lb•°F	1,172 J/(kg•K)	ASTM D2766
Vicat Softening Temperature	295 °F	146.23 °C	ASTM D1525
Electrical	Nominal Value Unit	Nominal Value Unit	Test Method
Surface Resistivity	1.0E+16 ohms-cm	1.0E+16 ohms-cm	IEC 60093
Volume Resistivity	1.0E+16 ohms-cm	1.0E+16 ohms-cm	IEC 60093
Electrical Strength	860.000 V/mil	34.000 kV/mm	IEC 60243-1
Flammability	Nominal Value Unit	Nominal Value Unit	Test Method
Flammability Rating	V0 @ .236	V0 @ .236	UL94
Flash Ignition Temperature	896 °F	480.38 °C	ASTM D1929

Chemical Resistance

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Acetone	Not resistant	Hydrochloric acid, aqueous solution 36'	Limited Resistance
Ammonia solution 10%	Not resistant	Hydrofluoric acid, 10%	Resistant
Benzene	Not resistant	Isopropanol	Resistant
Boric acid, aqueous solution 10%	Resistant	Methanol	Not resistant
Diesel oil	Resistant	Nitric acid, aqueous solution 10%	Resistant
Ethanol, 96%	Limited Resistance	Silicone Oil	Resistant
Ethylene chloride	Not resistant	Sulphuric acid, aqueous solution 2%	Resistant
Formaldehyde, aqueous solution 30%	Resistant	Sulphuric acid, concentrated 98%	Not resistant
Glycerin	Resistant	Triethanolomine	Not resistant
Glycol	Resistant	Trichloroethylene	Not resistant

* This information is based on average resin value specifications and is only to assist and advise you on the current technical knowledge, it is given without obligations or liability.

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Standard sizes and approximate weight (lbs) per sheet

Thickness	Lbs / Sq Ft	24 x 48	48 x 48	48 x 72	48 x 96	Thickness Range
.250"	1.69	14	27	41	54	.250" - .275"
.312"	2.13	17	34	51	68	.299" - .330"
.375"	2.53	20	41	61	81	.375" - .420"
.500"	3.38	27	54	81	108	.500" - .550"
.625"	4.22	34	68	101	135	.625" - .700"
.708"	4.78	38	76	115	153	.708" - .750"
.750"	5.06	41	81	122	162	.750" - .825"
.875"	5.91	47	95	142	189	.875" - .944"
1.00"	6.75	54	108	162	216	1.00" - 1.100"
1.125"	7.59	61	122	182	243	1.125" - 1.180"
1.25"	8.44	68	135	203	270	1.250" - 1.370"
1.50"	10.13	81	162	243	324	1.500" - 1.640"
1.75"	11.81	95	189	284	378	1.750" - 1.880"
2.00"	13.50	108	216	324	432	2.00" - 2.180"
2.250"	15.19	122	243	365	486	2.21" - 2.340"
2.500"	16.88	135	270	405	540	2.450" - 2.590"