

Evonik Corporation Plexiglas® XT 0A000 (20070) Extruded Acrylic

Category : Polymer , Thermoplastic , Acrylic (PMMA) , Acrylic, Extruded

Material Notes:

Description: PLEXIGLAS® XT extruded acrylic has the following properties:absolutely colorless and clearbreak-resistant to impact-resistant (PLEXIGLAS RESIST®)unequalled resistance to weathering and ageingvery good surface; brilliant, textured or satin (PLEXIGLAS SATINICE®)sheets, tubes, round rods, multi-skin sheets, corrugated sheets, mirror sheets1.5 to 25 mm solid sheet thickness, multi-skin sheets 16 mm and 32 mm thickstandard size up to 4050 x 2050 mm (+ extra lengths)more than 25 standard colorsgood resistance to dilute acidslimited resistance to organic solventsgood resistance to alkaliseasy to work, similar to hardwoodeasy to thermoform under optimal constant conditionseasily bonded also with solvent adhesives (e.g. ACRIFIX® 116, 117)burns more or less like hardwood; very little smoke generationmax. service temperature approx. 70 °CSpecific Notes for this Material: Standard grade for solid sheets; largely UV-absorbing.Information provided by degussa.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Evonik-Corporation-Plexiglas-XT-0A000-20070-Extruded-Acrylic.php

Physical Properties	Metric	English	Comments
Density	1.19 g/cc	0.0430 lb/in ³	ISO 1183
Water Absorption	0.44 %	0.44 %	24 hrs, 23°C from dry state; ISO 62, Method 1
Water Absorption at Saturation	2.1 %	2.1 %	Max. Weight Gain During Immersion; ISO 62, Method 1
Moisture Expansion	0.50 %	0.50 %	Possible Expansion due to heat and moisture
Moisture Vapor Transmission	55.0 cc-mm/m ² -24hr-atm	140 cc-mil/100 in ² -24hr-atm	

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	175 MPa	25400 psi	H_{961/30}; ISO 2039-1
Tensile Strength at Break	72.0 MPa	10400 psi	ISO 527-2/1B/5
	100 MPa	14500 psi	ISO 527-2/1B/5
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Tensile Strength, Ultimate	35.0 MPa	5080 psi	ISO 527-2/1B/5
	@Temperature 70.0 °C	@Temperature 158 °F	
Elongation at Break	4.5 %	4.5 %	ISO 527-2 1B/5
Modulus of Elasticity	3.30 GPa	479 ksi	Short Time Value; ISO 527-2/1B/1
Flexural Strength	105 MPa	15200 psi	5 mm/min (80x10x4 mm); ISO 178
Compressive Yield Strength			ISO 604

Mechanical Properties	103 MPa Metric	14900 psi English	Comments
Poissons Ratio	0.37 @Temperature 23.0 °C	0.37 @Temperature 73.4 °F	dilation speed of 5% per min; up to 2% dilation; ISO 527-1
Shear Modulus	1.70 GPa	247 ksi	Dynamic Shear Modulus at 10 Hz; ISO 537
Izod Impact, Notched (ISO)	1.60 kJ/m ²	0.761 ft-lb/in ²	ISO 180/1A
Charpy Impact Unnotched	1.50 J/cm ²	7.14 ft-lb/in ²	ISO 179/1fU
Impact	12	12	mm, Resistance to puck impact from thickness, Test Certificate No. From FMPA Stuttgart - 46/900 550; Similar to DIN 18032, part 3
Coefficient of Friction	0.45	0.45	steel/plastic
	0.50	0.50	plastic/steel
	0.80	0.80	plastic/plastic
Abrasion	20 - 30	20 - 30	% Haze, Abrasion resistance in Taber abrader test (100 rev.;5.4 N; CS-10F); ISO 9352

Thermal Properties	Metric	English	Comments
CTE, linear	70.0 µm/m-°C	38.9 µin/in-°F	DIN 53752A
	@Temperature 0.000 - 50.0 °C	@Temperature 32.0 - 122 °F	
Specific Heat Capacity	1.47 J/g-°C	0.351 BTU/lb-°F	
Thermal Conductivity	0.190 W/m-K	1.32 BTU-in/hr-ft ² -°F	DIN 52612
Maximum Service Temperature, Air	70.0 °C	158 °F	Permanent
	180 °C	356 °F	IR Radiator
Deflection Temperature at 0.46 MPa (66 psi)	100 °C	212 °F	ISO 75
Deflection Temperature at 1.8 MPa (264 psi)	95.0 °C	203 °F	ISO 75
Vicat Softening Point	103 °C	217 °F	ISO 306, Method B 50
Flash Point	430 °C	806 °F	Ignition Temperature; DIN 51794

Optical Properties	Metric	English	Comments
Refractive Index	1.491	1.491	clear grade; ISO 489
	@Thickness 3.00 mm	@Thickness 0.118 in	

Optical Properties	Metric	English	Comments
Transmission, Visible	@Thickness 3.00 mm	@Thickness 0.118 in	clear grade, DIN 9036, Part 3
UV Transmittance	0.00 % @Thickness 3.00 mm	0.00 % @Thickness 0.118 in	clear grade
Reflection Coefficient, Visible (0-1)	0.040 @Thickness 3.00 mm	0.040 @Thickness 0.118 in	clear grade, Reflection loss in the visible range (for each surface)

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	DIN VDE 0303, Part 3
Surface Resistance	5.00e+13 ohm	5.00e+13 ohm	DIN VDE 0303, Part 3
Shielding Effectiveness	26 dB	26 dB	Weighted Sound Reduction Index at 4 mm
	30 dB	30 dB	Weighted Sound Reduction Index at 6 mm
	32 dB	32 dB	Weighted Sound Reduction Index at 10 mm
Dielectric Constant	2.8 @Frequency 100000 Hz	2.8 @Frequency 100000 Hz	DIN VDE 0303, Part 4
	3.7 @Frequency 50 Hz	3.7 @Frequency 50 Hz	DIN VDE 0303, Part 4
Dielectric Strength	30.0 kV/mm	762 kV/in	DIN VDE 0303, Part 2
Dissipation Factor	0.030 @Frequency 100000 Hz	0.030 @Frequency 100000 Hz	DIN VDE 0303, Part 4
	0.060 @Frequency 50 Hz	0.060 @Frequency 50 Hz	DIN VDE 0303, Part 4
Comparative Tracking Index	600 V	600 V	DIN VDE 0303, Part 1

Processing Properties	Metric	English	Comments
Processing Temperature	>= 80.0 °C	>= 176 °F	Reverse Forming Temperature
	150 - 160 °C	302 - 320 °F	Forming Temperature

Descriptive Properties	Value	Comments
Adsorption in the Visible Range	Max 0.05%	clear grade, 3 mm

Fire Rating Descriptive Properties	B 2, Normally Flammable Value	DIN 4102 Comments
	Class 3	BS 476 Part 7 + 6
	M 4	NF P 92 501 + 92 505
	TP(b)	BS 2782, Method 508A
Min Cold Bending Radius	330 x thickness	
Permeability to Air	8.3×10^{-15} g cm/cm ² h Pa	
Permeability to CO2	1.1×10^{-13} g cm/cm ² h Pa	
Permeability to N2	4.5×10^{-15} g cm/cm ² h Pa	
Permeability to O2	2×10^{-14} g cm/cm ² h Pa	
Sound Velocity	2700-2800 m/s	at room temperature
Total Energy Transmittance g	85%	clear grade, 3 mm, DIN EN 410
U Value for 10mm	4.4 W/m ² K	DIN 4701
U Value for 1mm	5.8 W/m ² K	DIN 4701
U Value for 3mm	5.6 W/m ² K	DIN 4701
U Value for 5mm	5.3 W/m ² K	DIN 4701

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