www.zlplastics.com

TECHNICAL PROPERTIES OF ZL™ 1400 HI (PET-HI, high impact)

02/2012

Property		Units	Test Method	Condition of Specimen	Value
MECHANICAL PROPERTIES					
Tensile Strength at Break		psi	ASTM D 638	dry	12,330
		psi		moist	
Elongation at Break		%	ASTM D 638	dry	23
		%		moist	
Modulus of Elasticity in Tension		kpsi	ASTM D 638	dry	471
		kpsi		moist	
Charpy Impact Strength	+23 °C	kJ/m²	ISO 179/1 ep	dry	59
	-40 °C	kJ/m²		dry	
Charpy Notched Impact Strength		kJ/m²	ISO 179/1 epA	dry	3.9
		kJ/m²		moist	
Hardness Shore Scale D				dry	84
Time Yield Limit $\sigma_{1/1000}$	23°C/50% RH	psi	ISO 899	moist	
	100 °C	psi	ISO 899	dry	
Apparent Modulus $E_{C/1000\,2O}$	23°C/50% RH	psi	ISO 899	moist	
THERMAL PROPERTIES					
Heat Distortion Temperature	66 psi	°F	ASTM D 648	dry	
	264 psi	°F	ASTM D 648	dry	175
Melting Point	Method A	°F	ASTM D 3418	-	490
Maximum Service Temperature for few Hours Operation		°F	-	-	320
TEP 5,000 Hours (50% of Tensile Strength) [1]		°F	IEC 216	-	239
TEP 20,000 Hours (50% of Tensile Strength) [1]		°F	IEC 216	-	212
Thermal Coefficient of Linear Expansion		in/in/°F	ASTM D 696	dry	3.9×10^{-5}
Thermal Conductivity	Method A	Btu-in/hr-ft2-°F	ASTM C 177	dry	2
Specific Heat Capacity		J/(g.K)	IEC 1006	dry	
DIELECTRIC PROPERTIES					
Dielectric Constant	1 kHz	-	ASTM D 150	dry	3.4
		-	ASTM D 150	moist	
Dissipation Factor tan δ	1 kHz	-	ASTM D 150	dry	0.002
		-	ASTM D 150	moist	
Dielectric Strength		V/mil	ASTM D 149	dry	400
		V/mil	ASTM D 149	moist	
Volume Resistivity		Ω.cm	ASTM D 257	dry	
		Ω.cm	ASTM D 257	moist	
Surface Resistivity R_{OA}		Ω	ASTM D 257	dry	$> 10^{13}$
		Ω	ASTM D 257	moist	
Resistance to Tracking	KA/KB method	-		dry/moist	
	KC method	-		dry/moist	
MISCELLANEOUS PROPERTIES					
Mass Density	Method D, E	g/cm³	ISO 1183	dry	1.4
Water Absorption at 73 °F	24 hours	%	ASTM D 570	-	0.1
	Saturation	%	ASTM D 570	-	0.9
Fire Performance	Flammability Acc. VDE		VDE 0304	dry	
	Flammability of interior materials in passenger cars h>1mm	mm/min	FMVSS 302	moist	
	Flammability acc. UL (thickness of specimen 1.6 mm)	-	UL 94	-	HB
Resistance to Wear [2]		µm/km	ISO 7148-2	dry	1.9
Coefficient of Friction [2]	static		ISO 7148-2	dry	0.18 - 0.25
	dynamic		ISO 7148-2	dry	0.23 - 0.29
Compressive Stress at 2%/5%	normal strain	psi	ASTM D 695	dry	7,687 / 14,750
Compressive Stress at Maximum Strain		psi	ASTM D 695	dry	15,450
Creep Test 1,000 Hours		psi	ISO 899/1	dry	92,850

[1] Data of resin only

[2] Made by a pin / rotating disc test according DIN-ISO 7148-2 under following conditions
R_a = 0.35 - 0.45 µm (steel disc), v = 0.3 m/s, p = 3 N/mm², time T > 16 h

10908 Strang Line Rd* Lenexa, KS 66215 * Phone: 913-327-0300 * Fax: 913-327-0302
8485 Artesia Blvd, Unit D * Buena Park, CA 90621 * Phone: 714-523-0555 * Fax: 714-523-4555

Toll Free (866)-957-5278 email: info@zlplastics.com