

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

02/2012

Property	Units	Test Method	Condition of Specimen	Value
<b>MECHANICAL PROPERTIES</b>				
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	ISO 179/1 ep	dry	59
	-40 °C		dry	
Charpy Notched Impact Strength		ISO 179/1 epA	dry	3.9
			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 $E_{C/1000\ 20}$	23°C/50% RH	psi	ISO 899	moist
<b>THERMAL PROPERTIES</b>				
Heat Distortion Temperature	66 psi	°F	ASTM D 648	dry
	264 psi	°F	ASTM D 648	dry
Melting Point	Method A	°F	ASTM D 3418	-
Maximum Service Temperature for few Hours Operation		°F	-	-
TEP 5,000 Hours (50% of Tensile Strength) <sup>1)</sup>		°F	IEC 216	-
TEP 20,000 Hours (50% of Tensile Strength) <sup>1)</sup>		°F	IEC 216	-
Thermal Coefficient of Linear Expansion		in/in/°F	ASTM D 696	dry
Thermal Conductivity	Method A	Btu-in/hr-ft <sup>2</sup> -°F	ASTM C 177	dry
Specific Heat Capacity		J/(g.K)	IEC 1006	dry
<b>DIELECTRIC PROPERTIES</b>				
Dielectric Constant	1 kHz	-	ASTM D 150	dry
		-	ASTM D 150	moist
Dissipation Factor tan $\delta$	1 kHz	-	ASTM D 150	dry
		-	ASTM D 150	moist
Dielectric Strength		V/mil	ASTM D 149	dry
		V/mil	ASTM D 149	moist
Volume Resistivity		$\Omega$ .cm	ASTM D 257	dry
		$\Omega$ .cm	ASTM D 257	moist
Surface Resistivity $R_{OA}$		$\Omega$	ASTM D 257	dry
		$\Omega$	ASTM D 257	moist
Resistance to Tracking	KA/KB method	-		dry/moist
	KC method	-		dry/moist
<b>MISCELLANEOUS PROPERTIES</b>				
Mass Density	Method D, E	g/cm <sup>3</sup>	ISO 1183	dry
Water Absorption at 73 °F	24 hours	%	ASTM D 570	-
	Saturation	%	ASTM D 570	-
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	-
Resistance to Wear <sup>2)</sup>		$\mu$ m/km	ISO 7148-2	dry
Coefficient of Friction <sup>2)</sup>	static		ISO 7148-2	dry
	dynamic		ISO 7148-2	dry
Compressive Stress at 2%/5% normal strain		psi	ASTM D 695	dry
Compressive Stress at Maximum Strain		psi	ASTM D 695	dry
Creep Test 1,000 Hours		psi	ISO 899/1	dry

<sup>1)</sup> Data of resin only

<sup>2)</sup> Made by a pin / rotating disc test according DIN-ISO 7148-2 under following conditions

$R_a = 0.35 - 0.45 \mu\text{m}$  (steel disc),  $v = 0.3 \text{ m/s}$ ,  $p = 3 \text{ N/mm}^2$ , time  $T > 16 \text{ h}$

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