

Elexar® EL-8451

Thermoplastic Elastomer

Teknor Apex Company

Message:

Elexar EL-8451 is higher performance, halogen-free thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperture range. Elexar EL-8451 is a high durometer grade that is UV stablized and RoHS compliant. This grade is UL listed and is suitable for both injection molding and extrusion.

General Information		
UL YellowCard	E142591-100745024	E54709-245360
Features	High elasticity	
	High tensile strength	
	Good UV resistance	
	Good heat aging resistance	
	Good flexibility	
	Good coloring	
	Medium liquidity	
	Ozone resistance	
	Good weather resistance	
	Sunlight resistance, 720 hours	
	General	
	Halogen-free	
	Extended tensile rate	
Uses	Underground cable	
	Cable sheath	
	Electrical wire sheath material	
	Electrical conductor insulation material	
	Wire and cable applications	
	Wire sheath	
	Industrial cable insulation material	
	Connector	
	cord sheath	
Agency Ratings	UL 1581	
	UL 94	
RoHS Compliance	RoHS compliance	
UL File Number	QMTT2.73402	
	QMFZ2.E54709	

Appearance	Opacity
Forms	Particle
Processing Method	Extrusion Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.00	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	19	g/10 min	ASTM D1238
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A)	84		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus	103	MPa	ASTM D790
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress ¹			ASTM D412
100% strain, 0.508mm ²	4.52	MPa	ASTM D412
300% strain, 0.508mm ³	6.21	MPa	ASTM D412
Tensile Strength (Yield, 0.508 mm)	16.9	MPa	ASTM D412
Tensile Elongation (fracture, 0.508mm)	650	%	ASTM D412
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (136°C, 168 hr)	4.0	%	ASTM D573
Change in Ultimate Elongation in Air (136°C, 168 hr)	-8.0	%	ASTM D573
Change in Tensile Strength (60°C, 168 hr, in IRM 902 Oil)	-5.0	%	ASTM D471
Change in Ultimate Elongation (60°C, 168 hr, in IRM 902 Oil)	-7.0	%	ASTM D471
Thermal	Nominal Value	Unit	Test Method
Continuous Use Temperature	105	°C	UL 1581
Brittleness Temperature	< -60.0	°C	ASTM D746
RTI Elec	90.0	°C	UL 746
RTI	90.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (50°C)	9.6E+16	ohms · cm	ASTM D257
Dielectric Strength	38	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
1 kHz	2.36		ASTM D150
1 MHz	2.37		ASTM D150
Dissipation Factor			ASTM D150
1 kHz	1.0E-4		ASTM D150
1 MHz	1.2E-3		ASTM D150
Flammability	Nominal Value	Unit	Test Method

Flame Rating (0.810 mm, All Colors)	HB	UL 94
Oxygen Index	18	% ASTM D2863
Additional Information		
最高连续工作温度,UL-1581:105°C		
Injection	Nominal Value	Unit
Rear Temperature	199 - 216	°C
Middle Temperature	213 - 221	°C
Front Temperature	221 - 227	°C
Nozzle Temperature	221 - 229	°C
Processing (Melt) Temp	221 - 229	°C
Mold Temperature	25.0 - 65.6	°C
Injection Pressure	1.38 - 6.89	MPa
Injection Rate	Moderate-Fast	
Back Pressure	0.172 - 0.345	MPa
Screw Speed	50 - 100	rpm
Cushion	3.81 - 25.4	mm
Injection instructions		
无需干燥.但如果湿度过大,则将粒料在150°F (65°C)的温度下干燥2-4小时.		
Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	193 - 210	°C
Cylinder Zone 2 Temp.	199 - 216	°C
Cylinder Zone 3 Temp.	213 - 221	°C
Cylinder Zone 5 Temp.	221 - 227	°C
Die Temperature	221 - 229	°C
Extrusion instructions		
螺杆转速30 - 100 rpm		
NOTE		
1.	die cut from extruded tapes	
2.	Mouth die C, 510mm/min	
3.	C mold, 510mm/min	

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