Telcar® TL-8451

Teknor Apex Company - Thermoplastic Elastomer

Tuesday, April 7, 2026

General Information

Product Description

Telcar TL-8451 is a high performance, halogen-free thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Telcar TL-8451 is a high durometer grade that is UV stabilized. This grade is UL listed and is suitable for both injection molding and extrusion.

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• General Purpose • Good Colorability • Good Flexibility • Good Weather Resistance • Halogen Free	• Heat Aging Resistant • High Elasticity • High Elongation • High Hardness • High Tensile Strength	• Medium Density • Medium Flow • Ozone Resistant • Sunlight Resistant (720 hours) • UV Resistant
Uses	• Appliance Wire Insulation • Appliance Wire Jacketing • Cable Jacketing • Connectors	• Flexible Cord Jacketing • Industrial Cable Insulation • Rubber Replacement • Terminal Cable Jacketing	• Underground Power Cable • Wire & Cable Applications • Wire Jacketing
Wire Types	• SJEOW		
Agency Ratings	• UL 1581 [1]	• UL 94	
UL File Number	• QMTT2.E73402	• QMFZ2.E54709	
Appearance	• Black	• Opaque	
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

Properties [2]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.00		ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	20	g/10 min	ASTM D1238
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Deformation Under Load [3] (302°F)	6.00	%	ASTM D621
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress [4, 5] (100% Strain, 0.0200 in)	655	psi	ASTM D412
Tensile Stress [4, 5] (300% Strain, 0.0200 in)	900	psi	ASTM D412
Tensile Strength [4, 5] (Break, 0.0200 in)	2400	psi	ASTM D412
Tensile Elongation [4, 5] (Break, 0.0200 in)	660	%	ASTM D412
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore A)	84		ASTM D2240
Thermal	**Nominal Value**	**Unit**	**Test Method**
Continuous Use Temperature	221	°F	UL 1581
Brittleness Temperature	< -76.0	°F	ASTM D746
RTI Elec	194	°F	UL 746B
RTI Str	194	°F	UL 746B

Revision Date: 3/28/2019

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Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (277°F, 168 hr)	4.0	%	ASTM D573
Change in Ultimate Elongation in Air (277°F, 168 hr)	-8.0	%	ASTM D573
Change in Tensile Strength			ASTM D471
140°F, 168 hr, in IRM 902 Oil	-14	%	
Change in Ultimate Elongation			ASTM D471
140°F, 168 hr, in IRM 902 Oil	-7.0	%	

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (122°F)	9.6E+16	ohms·cm	ASTM D257
Dielectric Strength	970	V/mil	ASTM D149
Dielectric Constant			ASTM D150
1 kHz	2.10		
1 MHz	2.33		
Dissipation Factor			ASTM D150
1 kHz	2.0E-4		
1 MHz	1.0E-4		

Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.03 in, All Colors)	HB		UL 94
Oxygen Index	18	%	ASTM D2863

Additional Information

Maximum Continuous Operating Temperature, UL-1581: 105°C

Legal Statement

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Processing Information

Injection	Nominal Value	Unit
Rear Temperature	390 to 420	°F
Middle Temperature	415 to 430	°F
Front Temperature	430 to 440	°F
Nozzle Temperature	430 to 445	°F
Processing (Melt) Temp	430 to 445	°F
Mold Temperature	77 to 150	°F
Injection Pressure	200 to 1000	psi
Injection Rate	Moderate-Fast	
Back Pressure	25.0 to 50.0	psi
Screw Speed	50 to 100	rpm
Cushion	0.150 to 1.00	in

Injection Notes

Drying is not necessary. However, if moisture is a problem, dry the pellets for 2 to 4 hours at 150°F (65°C)

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Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	380 to 410	°F
Cylinder Zone 2 Temp.	390 to 420	°F
Cylinder Zone 3 Temp.	415 to 430	°F
Cylinder Zone 4 Temp.	415 to 430	°F
Cylinder Zone 5 Temp.	430 to 440	°F
Die Temperature	430 to 445	°F

Extrusion Notes

Screw Speed: 30 to 100 rpm

Notes

[1] 105°C

[2] Typical properties: these are not to be construed as specifications.

[3] 2000g weight

[4] Die C, 20 in/min

[5] die cut from extruded tapes

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