Telcar® TL-8431

Teknor Apex Company - Thermoplastic Elastomer

Saturday, September 14, 2024

General Information

Product Description

Telcar TL-8431 is a general purpose thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Telcar TL-8431 is a medium 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	• High Elasticity • High Elongation • High Tensile Strength • Low Flow • Low Temperature Flexibility	• Low Temperature Toughness • Ozone Resistant • Sunlight Resistant (720 hours) • UV Resistant
Uses	• Appliance Wire Insulation • Appliance Wire Jacketing • Cable Jacketing • Connectors	• Electrical/Electronic Applications • Flexible Cord Jacketing • Industrial Cable Insulation • Terminal Cable Jacketing	• Underground Power Cable • Wire & Cable Applications • Wire Jacketing
Wire Types	• SJEOW		
Agency Ratings	• UL 1581 [1]	• UL 94 HB [2]	• UL QMTT2
UL File Number	• QMTT2.E73402		
Appearance	• Colors Available	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

ASTM & ISO Properties [3]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.920	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	6.0	g/10 min	ASTM D1238
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress [4, 5] (100% Strain, 0.508 mm)	2.59	MPa	ASTM D412
Tensile Stress [4, 5] (300% Strain, 0.508 mm)	4.48	MPa	ASTM D412
Tensile Strength [4, 5] (Break, 0.508 mm)	17.6	MPa	ASTM D412
Tensile Elongation [4, 5] (Break, 0.508 mm)	700	%	ASTM D412
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore A)	69		ASTM D2240
Thermal	**Nominal Value**	**Unit**	**Test Method**
Continuous Use Temperature	105	°C	UL 1581
Brittleness Temperature	-100	°C	ASTM D746
RTI Elec	90.0	°C	UL 746B
RTI Str	90.0	°C	UL 746B
Aging	**Nominal Value**	**Unit**	**Test Method**
Change in Tensile Strength in Air (136°C, 168 hr)	6.0	%	ASTM D573
Change in Ultimate Elongation in Air (136°C, 168 hr)	-6.0	%	ASTM D573
Change in Tensile Strength			ASTM D471
60°C, 168 hr, in IRM 902 Oil	-20	%	
Change in Ultimate Elongation			ASTM D471
60°C, 168 hr, in IRM 902 Oil	-10	%	

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Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (50°C)	9.1E+16	ohms·cm	ASTM D257
Dielectric Strength	38	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	2.10		ASTM D150
Insulation Resistance	1.0E+12	ohms	IEC 60167

Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.8 mm, All Colors)	HB		UL 94
Oxygen Index	18	%	ASTM D2863

Additional Information

UL 1581: 720 Hour Sunlight Resistant

Legal Statement

Processing Information

Injection	Nominal Value	Unit
Rear Temperature	199 to 216	°C
Middle Temperature	213 to 221	°C
Front Temperature	221 to 227	°C
Nozzle Temperature	221 to 229	°C
Processing (Melt) Temp	221 to 229	°C
Mold Temperature	25 to 66	°C
Injection Pressure	1.38 to 6.89	MPa
Injection Rate	Moderate-Fast	
Back Pressure	0.172 to 0.345	MPa
Screw Speed	50 to 100	rpm
Cushion	3.81 to 25.4	mm

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)

Extrusion	Nominal Value	Unit
Cylinder Zone 1 Temp.	193 to 210	°C
Cylinder Zone 2 Temp.	199 to 216	°C
Cylinder Zone 3 Temp.	213 to 221	°C
Cylinder Zone 4 Temp.	213 to 221	°C
Cylinder Zone 5 Temp.	221 to 227	°C
Die Temperature	221 to 229	°C

Extrusion Notes

Screw Speed: 30 to 100 rpm

Notes

[1] 105°C

[2] minimum 1.5 mm thickness

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

[4] Die C, 510 mm/min

[5] die cut from extruded tapes

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