Telcar® TL-8421

Teknor Apex Company - Thermoplastic Elastomer

Saturday, September 14, 2024

General Information

Product Description

Telcar TL-8421 is a high performance thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Telcar TL-8421 is a high hardness, medium density, RoHS compliant grade suitable for both injection molding and extrusion.

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Good Colorability • Halogen Free • Heat Aging Resistant	• High Hardness • High Tensile Strength • Medium Density	• Medium Flow
Uses	• Appliance Wire Insulation • Appliance Wire Jacketing • Cable Jacketing • Connectors	• Flexible Cord Jacketing • Industrial Cable Insulation • Terminal Cable Jacketing • Underground Power Cable	• Wire & Cable Applications • Wire Jacketing
Agency Ratings	• UL 94		
RoHS Compliance	• RoHS Compliant		
UL File Number	• QMFZ2.E54709		
Appearance	• Colors Available	• Natural Color	• Opaque
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.978	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	16	g/10 min	ASTM D1238
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress [2, 3] (100% Strain, 0.508 mm)	6.59	MPa	ASTM D412
Tensile Stress [2, 3] (300% Strain, 0.508 mm)	8.62	MPa	ASTM D412
Tensile Strength [2, 3] (Break, 0.508 mm)	20.0	MPa	ASTM D412
Tensile Elongation [2, 3] (Break, 0.508 mm)	620	%	ASTM D412
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness (Shore A)	91		ASTM D2240
Thermal	**Nominal Value**	**Unit**	**Test Method**
Continuous Use Temperature	105	°C	ASTM D794
Brittleness Temperature	< -60.0	°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)	0.0	%	ASTM D573
Change in Ultimate Elongation in Air (136°C, 168 hr)	-9.0	%	ASTM D573
Change in Tensile Strength			ASTM D471
60°C, 168 hr, in IRM 902 Oil	10	%	
121°C, 18 hr, in Animal Fat	-30	%	
121°C, 18 hr, in Vegetable Oil	-40	%	

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Aging	Nominal Value	Unit	Test Method
Change in Ultimate Elongation			ASTM D471
60°C, 168 hr, in IRM 902 Oil	6.0	%	
121°C, 18 hr, in Animal Fat	-25	%	
121°C, 18 hr, in Vegetable Oil	-30	%	
Change in Volume			ASTM D471
121°C, 18 hr, in Animal Fat	1.0	%	
121°C, 18 hr, in Vegetable Oil	1.0	%	

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (50°C)	3.5E+16	ohms·cm	ASTM D257
Dielectric Strength	38	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	2.40		ASTM D150
Insulation Resistance	9.0E+10	ohms	IEC 60167

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

Additional Information

This material is formulated to be halogen free

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.	221 to 227	°C
Cylinder Zone 5 Temp.	221 to 227	°C
Die Temperature	221 to 229	°C

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Extrusion Notes
Screw Speed: 30 to 100 rpm

Notes

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

[2] Die C, 510 mm/min

[3] die cut from extruded tapes

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