



Telcar® TL-8451G

Teknor Apex Company - Thermoplastic Elastomer

General Information

Product Description

Telcar TL-8451G is a general purpose thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Telcar TL-8451G is a medium durometer grade that is UV stablized and RoHS compliant. This grade 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 • Halogen Free	• High Elasticity • High Elongation • High Tensile Strength • Medium Flow	• Ozone Resistant • Sunlight Resistant (720 hours) • UV Resistant • Weather Resistant
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
RoHS Compliance	• RoHS Compliant		
Appearance	• Opaque		
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.00		ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	20	g/10 min	ASTM D1238
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress ^{2, 3} (100% Strain, 0.0200 in)	655	psi	ASTM D412
Tensile Stress ^{2, 3} (300% Strain, 0.0200 in)	900	psi	ASTM D412
Tensile Strength ^{2, 3} (Break, 0.0200 in)	2400	psi	ASTM D412
Tensile Elongation ^{2, 3} (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	ASTM D794
Brittleness Temperature	-76.0	°F	ASTM D746
RTI Elec	122	°F	UL 746
RTI Str	122	°F	UL 746
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 140°F, 168 hr, in IRM 902 Oil	-14	%	ASTM D471
Change in Ultimate Elongation 140°F, 168 hr, in IRM 902 Oil	-7.0	%	ASTM D471
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	9.6E+16	ohms·cm	ASTM D257
Dielectric Strength	970	V/mil	ASTM D149

Telcar® TL-8451G

Teknor Apex Company - Thermoplastic Elastomer

Electrical	Nominal Value	Unit	Test Method
Dielectric Constant (1 kHz)	2.10		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.03 in, ALL)	HB		UL 94
Oxygen Index	18	%	ASTM D2863

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)

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 5 Temp.	430 to 440	°F
Die Temperature	430 to 445	°F

Extrusion Notes

Screw Speed: 30 to 100 rpm

Notes

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

² Die C, 20 in/min

³ die cut from extruded tapes