



Elexar® EL-8712R

Teknor Apex Company - Thermoplastic Elastomer

General Information

Product Description

Elexar EL-8712R is a flame retardant thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperature range. Elexar EL-8712R is a medium durometer grade that is RoHS compliant and suitable for both injection molding and extrusion.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Flame Retardant • General Purpose • Good Colorability • Good Flexibility • Halogenated	• Heat Aging Resistant • High Density • High Elasticity • High Elongation • High Specific Gravity	• High Tensile Strength • Low Flow • Medium Hardness
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
RoHS Compliance	• RoHS Compliant		
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	1.08		ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	3.5	g/10 min	ASTM D1238
Elastomers	Nominal Value	Unit	Test Method
Tensile Stress ^{2, 3} (100% Strain, 0.0200 in)	360	psi	ASTM D412
Tensile Stress ^{2, 3} (300% Strain, 0.0200 in)	530	psi	ASTM D412
Tensile Strength ^{2, 3} (Break, 0.0200 in)	2000	psi	ASTM D412
Tensile Elongation ^{2, 3} (Break, 0.0200 in)	680	%	ASTM D412
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A)	71		ASTM D2240
Thermal	Nominal Value	Unit	Test Method
Continuous Use Temperature	221	°F	ASTM D794
Brittleness Temperature	-76.0	°F	ASTM D746
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (277°F, 168 hr)	9.0	%	ASTM D573
Change in Ultimate Elongation in Air (277°F, 168 hr)	-1.0	%	ASTM D573
Change in Tensile Strength 140°F, 168 hr, in IRM 902 Oil	-8.0	%	ASTM D471
Change in Ultimate Elongation 140°F, 168 hr, in IRM 902 Oil	3.0	%	ASTM D471

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Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (122°F)	6.6E+15	ohms·cm	ASTM D991
Dielectric Strength	660	V/mil	ASTM D149
Dielectric Constant			ASTM D150
1 kHz	2.10		
1 MHz	2.10		
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.12 in, ALL)	V-2		UL 94
Oxygen Index	20	%	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 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 Typical properties: these are not to be construed as specifications.

² Die C, 20 in/min

³ die cut from extruded tapes