

Elexar® EL-1943A BLK 111

Thermoplastic Elastomer

Teknor Apex Company

Message:

Elexar EL-1943A BLK 111 is a halogen-free thermoplastic elastomer designed for electrical applications requiring flexibility over a wide temperture range. Elexar EL-1943A BLK 111 is a high durometer grade that is UV stablized and is suitable for both injection molding and extrusion.

General Information			
Features	Sunlight Resistant		
	Flexibility at low temperatures		
	High tensile strength		
	Good UV resistance		
	Good heat aging resistance		
	Good flexibility		
	Medium liquidity		
	Good weather resistance		
	Halogen-free		
	Extended tensile rate		
Uses	Underground cable		
	Cable sheath		
	Electrical wire sheath material		
	Electrical conductor insulation material		
	Wire and cable applications		
	Wire sheath		
	Industrial cable insulation material		
	Connector		
	cord sheath		
	Terminal cable sheath material		
Appearance	Black		
Forms	Particle		
Processing Method	Extrusion		
	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.998	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	15	g/10 min	ASTM D1238
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore A)	83		ASTM D2240

Elastomers	Nominal Value	Unit	Test Method
Tensile Stress ¹			ASTM D412
100% strain, 0.508mm ²	4.27	MPa	ASTM D412
300% strain, 0.508mm ³	5.86	MPa	ASTM D412
Tensile Strength (fracture, 0.508mm)	15.2	MPa	ASTM D412
Tensile Elongation (fracture, 0.508mm)	600	%	ASTM D412
Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (136°C, 168 hr)	4.0	%	ASTM D573
Change in Ultimate Elongation in Air (136°C, 168 hr)	-8.0	%	ASTM D573
Change in Tensile Strength (60°C, 168 hr, in IRM 902 Oil)	-5.0	%	ASTM D471
Change in Ultimate Elongation (60°C, 168 hr, in IRM 902 Oil)	-7.0	%	ASTM D471
Thermal	Nominal Value	Unit	Test Method
Continuous Use Temperature	105	°C	ASTM D794
Brittleness Temperature	-60.0	°C	ASTM D746
RTI Elec	50.0	°C	UL 746
RTI	50.0	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (50°C)	9.6E+16	ohms · cm	ASTM D257
Dielectric Strength	38	kV/mm	ASTM D149
Dielectric Constant (1 kHz)	2.36		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.810 mm, BK)	HB		UL 94
Oxygen Index	18	%	ASTM D2863
Injection	Nominal Value	Unit	
Rear Temperature	199 - 216	°C	
Middle Temperature	213 - 221	°C	
Front Temperature	221 - 227	°C	
Nozzle Temperature	221 - 229	°C	
Processing (Melt) Temp	221 - 229	°C	
Mold Temperature	25.0 - 65.6	°C	
Injection Pressure	1.38 - 6.89	MPa	
Injection Rate	Moderate-Fast		
Back Pressure	0.172 - 0.345	MPa	
Screw Speed	50 - 100	rpm	
Cushion	3.81 - 25.4	mm	
Injection instructions			
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 - 210	°C	

Cylinder Zone 2 Temp.	199 - 216	°C
Cylinder Zone 3 Temp.	213 - 221	°C
Cylinder Zone 5 Temp.	221 - 227	°C
Die Temperature	221 - 229	°C

Extrusion instructions

Screw Speed: 30 to 100 rpm

NOTE

1. die cut from extruded tapes
2. Mouth die C, 510mm/min
3. C mold, 510mm/min

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