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TEKNOR APEX

Medalist® MD-84383 AP NAT(PRELIMINARY DATA)

Teknor Apex Company - Thermoplastic Elastomer

General Information

Product Description

Medalist MD-84300 AP NAT series are high performance thermoplastic elastomers designed specifically for extrusion and injection molded electrical applications in the medical and healthcare industry. The Medalist MD-84300 AP NAT series are a better alternative to traditional TPVs used in such applications. Medalist MD-84383 AP NAT is a higher hardness, low density grade with good electrical properties and can be sterilized by autoclave, ETO, or gamma radiation. Please contact your Teknor Apex rep for a regulatory compliance letter as required.

General			
Material Status	• Preliminary Data		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	
Features	• Autoclave Sterilizable • Electrically Insulating • Ethylene Oxide Sterilizable • Good Color Stability • Good Colorability	• Good Sterilizability • Halogen Free • High Tensile Strength • Low Density • Low Specific Gravity	• Medium Flow • Medium Hardness • Radiation Sterilizable • Slip
Uses	• Medical/Healthcare Applications • Pharmaceuticals	• Safety Equipment • Wire & Cable Applications	
Agency Ratings	• ISO 13485		
RoHS Compliance	• RoHS Compliant		
Appearance	• Opaque		
Forms	• Pellets		
Processing Method	• Extrusion	• Injection Molding	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.00		ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	19	g/10 min	ASTM D1238
Elastomers	**Nominal Value**	**Unit**	**Test Method**
Tensile Stress (100% Strain)	590	psi	ASTM D412
Tensile Stress (300% Strain)	820	psi	ASTM D412
Tensile Strength (Break)	2200	psi	ASTM D412
Tensile Elongation (Break)	680	%	ASTM D412
Compression Set			ASTM D395B
70°F, 22 hr	34	%	
158°F, 22 hr	62	%	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness			ASTM D2240
Shore A, 1 sec	85		
Shore A, 5 sec	83		
Thermal	**Nominal Value**	**Unit**	**Test Method**
Brittleness Temperature	< -76.0	°F	ASTM D746

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Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (277°F, 168 hr)	24	%	ASTM D573
Change in Ultimate Elongation in Air (277°F, 168 hr)	-6.0	%	ASTM D573
Change in Tensile Strength			ASTM D471
140°F, 168 hr, in IRM 902 Oil	-6.0	%	
Change in Ultimate Elongation			ASTM D471
140°F, 168 hr, in IRM 902 Oil	-5.0	%	

Electrical	Nominal Value	Unit	Test Method
Volume Resistivity			ASTM D257
73°F	2.0E+16	ohms·cm	
122°F	7.2E+14	ohms·cm	
Dielectric Strength	1200	V/mil	ASTM D149
Dielectric Constant (1 kHz)	2.28		ASTM D150
Dissipation Factor (1 kHz)	6.7E-3		ASTM D150

Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.06 in, NT)	HB		UL 94
Oxygen Index	19	%	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
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