

Medalist® MD-84383 (PRELIMINARY DATA)

Teknor Apex Company - Thermoplastic Elastomer

Saturday, September 14, 2024

General Information

Product Description

Medalist MD-84300 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 series are a better alternative to traditional TPVs used in such applications. Medalist MD-84383 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	• North 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	0.998	g/cm ³	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)	4.07	MPa	ASTM D412
Tensile Stress (300% Strain)	5.65	MPa	ASTM D412
Tensile Strength (Break)	15.2	MPa	ASTM D412
Tensile Elongation (Break)	680	%	ASTM D412
Compression Set			ASTM D395B
21°C, 22 hr	34	%	
70°C, 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	< -60.0	°C	ASTM D746

Revision Date: 10/15/2019

The information and recommendations contained in this bulletin are, to the best of our knowledge, accurate and reliable but no guarantee of their accuracy is made. All products are sold upon condition that purchasers shall make their own tests to determine the suitability of such products for their particular purposes and uses and purchasers assume all risks and liability for the results of use of the products, including use in accordance with seller's recommendations. Nothing in this bulletin constitutes permission or a recommendation to practice or use any invention covered by any patent owned by this company or by others. There is no warranty of merchantability and there are no other warranties for the products described.

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Aging	Nominal Value	Unit	Test Method
Change in Tensile Strength in Air (136°C, 168 hr)	24	%	ASTM D573
Change in Ultimate Elongation in Air (136°C, 168 hr)	-6.0	%	ASTM D573
Change in Tensile Strength 60°C, 168 hr, in IRM 902 Oil	-6.0	%	ASTM D471
Change in Ultimate Elongation 60°C, 168 hr, in IRM 902 Oil	-5.0	%	ASTM D471
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity 23°C	2.0E+16	ohms·cm	ASTM D257
50°C	7.2E+14	ohms·cm	
Dielectric Strength	48	kV/mm	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 (1.5 mm, NT)	HB		UL 94
Oxygen Index	19	%	ASTM D2863

Legal Statement

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

Extrusion Notes

Screw Speed: 30 to 100 rpm

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Notes

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

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