



Medalist

Medical Elastomers for Films



For medical films requiring crystal clarity and high flexibility, Medalist thermoplastic elastomers (TPEs) are the premier choice. The Medalist MD-53200 Series of products are formulated specifically to meet the stringent demands of the healthcare industry while balancing price and performance. Available from 65 to 90 Shore A, these TPEs can be converted into blown and calendered film or extruded sheets for medical films, bags, and bottles. The MD-53200 series is suitable for single and multi-layer films that can be heat sealed and sterilized without compromising performance.

Why Medalist for Clear & Flexible Film?

- » High clarity
- » Low level of extractables
- » Wide service temperature range
- » Plasticizer-free
- » Can be heat sealed and sterilized
- » Versatile grades for blown or calendered film and sheet extrusion
- » Ease of processing with excellent throughput rates

Regulatory Compliance

- » Made with FDA food grade compliant ingredients
- » Biocompatible recipes; ISO 10993-5 compliant
- » REACH SVHC Compliant
- » Free of DEHP, phthalates, BPA, and latex
- » Standard grades are ADM-free

Medalist MD-53200 Series vs. PVC

- » Broad processing window
- » Great low temperature flexibility and impact strength
- » Light weight: low density and reduced wall thickness
- » Exhibits superior elasticity and tear strength
- » Colorfast - exhibits 25% less color change upon exposure to gamma irradiation than standard (i.e., non-gamma stable) grades of flexible PVC

Medalist

Table 1: Medical Film Property Comparison: Medalist vs. PVC

A typical 15 mil thick PVC film has the equivalent performance of 7 mil thick Medalist TPE film. The ability to down-gauge using Medalist TPES or even replacing a multi-layer construction with a single TPE layer of equivalent strength, presents major cost savings for converters and OEMs alike.

Calendered Film	Direction	Tensile Strength	Tear C	Hardness (15 sec)	-40°C Cold Impact (Masland)	Moisture Vapor Transmission Rate	Oxygen Permeability
---	---	ASTM D882	ASTM D1004	ASTM D2240	ASTM D1790	ASTM E96	ASTM D1434(V)
TPE (7 mil)	MD	2900 psi	450 ppl	88A	10 of 10 pass	0.05 g/h·m ²	2.30E-07 P(cm ² /sec·atm)
	CD	2200 psi	440 ppl				
PVC (15 mil)	MD	2800 psi	280 ppl	80A	0 of 10 pass	0.16 g/h·m ²	2.25E-09 P(cm ² /sec·atm)
	CD	2400 psi	290 ppl				

Table 2: Medalist MD-53200 Series - Medical Elastomers for Clear & Flexible Films

Typical Properties	ASTM Test Method	Units	MD-53263	MD-53273	MD-53283	MD-53288	MD-53293	MD-50260D
Specific Gravity	ASTM D792	---	0.89	0.89	0.89	0.89	0.89	0.89
Hardness (5 sec del)	ASTM D2240	Shore A	63	73	83	89	93	62D
Tensile Stress at 100%	ASTM D412	psi	385	610	855	1065	1260	2050
Tensile Stress at 300%	ASTM D412	psi	615	880	1130	1260	1365	2000
Tensile Strength at Break	ASTM D412	psi	1720	2085	2370	2265	2450	2600
Elongation at Break	ASTM D412	%	625	625	630	605	560	600
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	ASTM D1238	g/10 min	5	6	8	8	10	7.5
Tear Strength	ASTM D624	lbf/in	247	320	410	460	500	700
Brittle Point	ASTM D746	°C	-53	-53	-47	-45	-38	---
MVTR @ 38°C 100% RH- 1 mil	ASTM F1249	g/(100. in ² . day)	3.32	2.71	2.44	1.98	1.72	---
Average Oxygen Permeability (40 mils)	ASTM F1927	(cm ³ -mm)/[m ² -day-atm]	504	424	381	333	254	---
Average Oxygen Transmission, 90% Humidity (40 mils)	ASTM F1927	(cm ³ / [m ² -day])	490	458	380	345	264	---

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 purchaser assumes 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. For detailed Product Stewardship information, please contact us. Any product of Teknor Apex, including product names, shall not be used or tested in any medical or food contact application without the prior written acknowledgment of Teknor Apex as to the intended use. Please note that some products may not be available in one or more countries.



AMERICAS
505 Central Avenue
Pawtucket, RI 02861
401-725-8000
800-556-3864

EUROPE
Mijnweg 1
6167AC Geleen
Netherlands
31(0) 46 7020950

ASIA
41 Shipyard Road
Singapore 628134
(011) 65-6265-2544