

# Elasthane™ 55D MR

Thermoplastic Polyurethane Elastomer (Polyether)

DSM Biomedical Inc.

Message:

Elasthane™ 55D MR is a Thermoplastic Polyurethane Elastomer (Polyether) (TPU-Polyether) product. It can be processed by extrusion and is available in North America. Applications of Elasthane™ 55D MR include medical/healthcare and food contact applications.

Characteristics include:

- Biocompatible
- High Strength
- Hydrolytically Stable

General Information			
Features	Aromatic		
	Biocompatible		
	High Strength		
	Hydrolytically Stable		
Uses	Medical/Healthcare Applications		
Agency Ratings	DMF Unspecified Rating		
	FDA Unspecified Rating		
Appearance	Clear Amber		
Forms	Pellets		
Processing Method	Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.16	g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) (224°C/1.2 kg)	13	g/10 min	ASTM D1238
Molding Shrinkage - Flow			ASTM D955
-- <sup>1</sup>	1.4	%	
-- <sup>2</sup>	0.50 to 1.0	%	
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	55		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Ultimate)	54.1	MPa	ASTM D1708
Tensile Stress			ASTM D1708
50% Strain	11.9	MPa	
100% Strain	15.0	MPa	
300% Strain	33.7	MPa	
Tensile Elongation (Break)	380	%	ASTM D1708
Flexural Modulus - 1% Secant	149	MPa	ASTM D790
Flexural Strength (5.0% Strain)	6.20	MPa	ASTM D790

Taber Abrasion Resistance (1000 Cycles, 1000 g, H-18 Wheel)	48.0	mg	ASTM D1044
Elastomers	Nominal Value	Unit	Test Method
Tear Strength <sup>3</sup>	137	kN/m	ASTM D624
Compression Set (25°C, 22 hr)	40	%	ASTM D395
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	129	°C	ASTM D1525
CLTE - Flow	1.5E-4	cm/cm/°C	ASTM E831
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength	15	kV/mm	ASTM D149
Dielectric Constant (60 Hz)	5.20		ASTM D150
Extrusion	Nominal Value	Unit	
Melt Temperature	193 to 210	°C	
NOTE			
1.	4 in disk		
2.	Flame bar		
3.	Die C		

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