## Elastollan® 1190A16

## Thermoplastic Polyurethane Elastomer (Polyether)

BASF Corp. Thermoplastic Polyurethanes

## Message:

Elastollan <sup>®</sup> 1190A is specifically formulated for extruded profile, tubing, sheet and film applications. It exhibits excellent abrasion resistance, toughness, transparency, very good low temperature flexibility, hydrolytic stability and fungus resistance. It has excellent damping characteristics and outstanding resistance to tear propagation. Elastollan <sup>®</sup> 1190A conforms to the FDA food contact section, book 21, section 177.2600. Elastollan <sup>®</sup> 1190A also has NSF Standard 61 "Water Contact Material" certification.. Elastollan <sup>®</sup> 1190A is supplied uncolored in diced or pelletized form.

General Information			
Features	Food Contact Acceptable		
	Fungus Resistant		
	Good Abrasion Resistance		
	Good Tear Strength		
	Good Toughness		
	Hydrolytically Stable		
	Low Temperature Flexibility		
Agency Ratings	FDA 21 CFR 177.2600		
	NSF 61		
Appearance	Clear/Transparent		
Processing Method	Extrusion		
	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Physical Specific Gravity	Nominal Value	Unit g/cm³	Test Method ASTM D792
Physical Specific Gravity Melt Mass-Flow Rate (MFR)	Nominal Value 1.13	Unit g/cm³	Test Method ASTM D792 ASTM D1238
Physical         Specific Gravity         Melt Mass-Flow Rate (MFR)         190°C/10.0 kg	Nominal Value 1.13 20 to 30	Unit g/cm <sup>3</sup> g/10 min	Test Method ASTM D792 ASTM D1238
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kg	Nominal Value           1.13           20 to 30           30 to 60	Unit g/cm <sup>3</sup> g/10 min g/10 min	Test Method ASTM D792 ASTM D1238
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardness	Nominal Value1.1320 to 3030 to 60Nominal Value	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit	Test Method ASTM D792 ASTM D1238 Test Method
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90	Unit g/cm³ g/10 min g/10 min Unit	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)Mechanical	Nominal Value1.1320 to 3030 to 60Nominal Value90Nominal Value	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90           Nominal Value           31.0	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit MPa	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D412
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90           Nominal Value           31.0           29.0	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit Unit MPa MPa	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D412 ASTM D790
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)Taber Abrasion Resistance	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90           Nominal Value           31.0           29.0           45.0	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit Unit MPa MPa mg	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D412 ASTM D412 ASTM D790 ASTM D1044
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)Taber Abrasion ResistanceAbrasion - DIN	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90           Nominal Value           31.0           29.0           45.0           25	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit Unit MPa MPa mg mm <sup>3</sup>	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D412 ASTM D412 ASTM D790 ASTM D1044 DIN 53516
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)Flexural Modulus (Injection Molded)Taber Abrasion ResistanceAbrasion - DINSoftening Point - DMA	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90           Nominal Value           31.0           29.0           45.0           25           100	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit Unit MPa MPa MPa mg mm <sup>3</sup> °C	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D412 ASTM D412 ASTM D790 ASTM D1044 DIN 53516 Internal Method
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)Flexural Modulus (Injection Molded)Taber Abrasion ResistanceAbrasion - DINSoftening Point - DMAElastomers	Nominal Value           1.13           20 to 30           30 to 60           Nominal Value           90           Nominal Value           31.0           29.0           45.0           25           100           Nominal Value	Unit g/cm <sup>3</sup> g/10 min g/10 min g/10 min Unit Unit MPa MPa MPa mg mm <sup>3</sup> °C Unit Unit	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D2240 ASTM D412 ASTM D412 ASTM D790 ASTM D1044 DIN 53516 Internal Method Test Method
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)Taber Abrasion ResistanceAbrasion - DINSoftening Point - DMAElastomersTensile Stress	Nominal Value         1.13         20 to 30         30 to 60         Nominal Value         90         Nominal Value         31.0         29.0         45.0         25         100         Nominal Value	Unit g/cm <sup>3</sup> g/10 min g/10 min g/10 min Unit Unit Unit MPa MPa MPa mg mm <sup>3</sup> °C	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D2240 ASTM D412 ASTM D412 ASTM D1044 DIN 53516 Internal Method Test Method ASTM D412
PhysicalSpecific GravityMelt Mass-Flow Rate (MFR)190°C/10.0 kg200°C/10.0 kgHardnessDurometer Hardness (Shore A)MechanicalTensile Modulus (Injection Molded)Flexural Modulus (Injection Molded)Taber Abrasion ResistanceAbrasion - DINSoftening Point - DMAElastomersTensile Stress100% Strain	Nominal Value         1.13         20 to 30         30 to 60         Nominal Value         90         Nominal Value         31.0         29.0         45.0         25         100         Nominal Value         12.4	Unit g/cm <sup>3</sup> g/10 min g/10 min Unit Unit Unit MPa MPa MPa mg mm <sup>3</sup> °C Unit Unit	Test Method ASTM D792 ASTM D1238 Test Method ASTM D2240 Test Method ASTM D2240 ASTM D412 ASTM D412 ASTM D1044 DIN 53516 Internal Method Test Method ASTM D412

300% Strain	27.6	MPa	
Tensile Strength	37.2	MPa	ASTM D412
Tensile Elongation (Break)	460	%	ASTM D412
Tear Strength <sup>1</sup>	128	kN/m	ASTM D624
Compression Set			ASTM D395B
23°C, 22 hr	25	%	
70°C, 22 hr	45	%	
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	-35.0	°C	Internal Method
Vicat Softening Temperature	120	°C	ASTM D1525
Injection	Nominal Value	Unit	
Drying Temperature	100 to 110	°C	
Drying Time	2.0 to 3.0	hr	
Suggested Max Moisture	0.030	%	
Rear Temperature	190 to 220	°C	
Middle Temperature	190 to 220	°C	
Front Temperature	190 to 220	°C	
Nozzle Temperature	210 to 225	°C	
Extrusion	Nominal Value	Unit	
Drying Temperature	100 to 110	°C	
Drying Time	2.0 to 3.0	hr	
Cylinder Zone 1 Temp.	170 to 210	°C	
Cylinder Zone 3 Temp.	170 to 210	°C	
Cylinder Zone 5 Temp.	170 to 210	°C	
Adapter Temperature	200 to 220	°C	
Die Temperature	195 to 215	°C	
NOTE			
1.	Die C		

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