## Bayflex® MP-10000

Polyurethane (Polyether, MDI)

Covestro - PUR

## Message:

Bayflex MP-10,000 is a solid elastomer which has a flexural modulus of approximately 10,000 psi (69 MPa) at room temperature. It is processed on reaction injection molding (RIM) equipment and is used for rollers, gaskets, and encapsulated windows. This system combines rapid demold times, excellent integrity at demold, improved release characteristics, and outstanding physical properties. Bayflex MP-10,000 is a formulated RIM system supplied as two liquid components. Component A is a diphenylmethane diisocyanate (MDI) prepolymer, and Component B is a polyether polyol. As with any product, use of the Bayflex MP-10,000 system in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

Features         Good demoulding performance           Uses         Washer           Roller         Doors and Windows           Forms         Liquid           Processing Method         Reaction Injection Molding (RIM)           Physical         Nominal Value         Unit         Test Method           Specific Gravity          0.998         g/cm³         ASTM D792            0.998         g/cm³         ASTM D1622           Molding Shrinkage - Flow (3.00 mm)         1.4         %         Internal method           Water Absorption (24 hr, 3.00 mm)         3.3         %         Internal method           Water absorption rate-240 hr (3.00 mm)         5.0         %         Internal method           Low Temperature Britteness (-50°C, 3.00 mm)         No Cracking         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Durometer Hardness         Nominal Value         Unit         Test Method           Shaw A, 3.00mm         90         Shaw A, 3.00mm         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           <	General Information			
Forms I Liquid  Processing Method Reaction Injection Molding (RIM)  Physical Nominal Value Unit Test Method  Specific Gravity  0.998 g/cm² ASTM D792  1.000 g/cm² ASTM D792  1.000 g/cm² ASTM D792  1.000 g/cm² ASTM D1622  Molding Shrinkage - Flow (3.00 mm) 1.4 % (Internal method Internal	Features	Good demoulding performance		
Forms Liquid  Processing Method Reaction Injection Molding (RIM)  Physical Nominal Value Unit Test Method  Specific Gravity  0 0.998 g/cm³ ASTM D792  1 1.00 g/cm³ ASTM D792  Molding Shrinkage - Flow (3.00 mm) 1.4 % Internal method  Water Absorption (24 hr, 3.00 mm) 3.3 % Internal method  Water Absorption rate-240 hr (3.00 mm) 5.0 % Internal method  Low Temperature Brittleness (-50°C, 3.00 mm) No Cracking ASTM D746  Water Immersion, Length Increase 1.4 A	Uses	Washer		
Forms         Liquid           Processing Method         Reaction Injection Molding (RIM)           Physical         Nominal Value         Unit         Test Method           Specific Gravity         Forms         ASTM D792		Roller		
Processing Method         Reaction Injection Molding (RIM)         Unit         Test Method           Specific Gravity          0.998         g/cm³         ASTM D792            1.00         g/cm³         ASTM D792            1.00         g/cm³         ASTM D1622           Molding Shrinkage - Flow (3.00 mm)         1.4         %         Internal method           Water Absorption (24 hr, 3.00 mm)         3.3         %         Internal method           Water absorption rate-240 hr (3.00 mm)         5.0         %         Internal method           Water absorption rate-240 hr (3.00 mm)         1.4         %         Internal method           Low Temperature Brittleness (-50°C, 3.00 mm)         No Cracking         XSTM D746         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Shaw A, 3.00mm         90         XSTM D2240         ASTM D2240           Shaw D, 3.00mm         40         XSTM D2240         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Flexural Modulus         XSTM D790         ASTM D790		Doors and Windows		
Processing Method         Reaction Injection Molding (RIM)         Unit         Test Method           Specific Gravity          0.998         g/cm³         ASTM D792            1.00         g/cm³         ASTM D792            1.00         g/cm³         ASTM D1622           Molding Shrinkage - Flow (3.00 mm)         1.4         %         Internal method           Water Absorption (24 hr, 3.00 mm)         3.3         %         Internal method           Water absorption rate-240 hr (3.00 mm)         5.0         %         Internal method           Water absorption rate-240 hr (3.00 mm)         1.4         %         Internal method           Low Temperature Brittleness (-50°C, 3.00 mm)         No Cracking         XSTM D746         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Shaw A, 3.00mm         90         XSTM D2240         ASTM D2240           Shaw D, 3.00mm         40         XSTM D2240         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Flexural Modulus         XSTM D790         ASTM D790				
Physical         Nominal Value         Unit         Test Method           Specific Gravity          0.998         g/cm³         ASTM D792            1.00         g/cm³         ASTM D1622           Molding Shrinkage - Flow (3.00 mm)         1.4         %         Internal method           Water Absorption (24 hr, 3.00 mm)         3.3         %         Internal method           Water absorption rate-240 hr (3.00 mm)         5.0         %         Internal method           Low Temperature Brittleness (-50°C, 3.00*         No Cracking         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Shaw A, 3.00mm         9         STM D2240         ASTM D2240           Shaw D, 3.00mm         40         Unit         Test Method           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D234           Flexural Modulus         -30°C, 3.00 mm         163         MPa         ASTM D790           -30°C, 3.00 mm         68.9         MPa         ASTM D790           -6°C, 3.0	Forms	Liquid		
Specific Gravity         Company of the properties o	Processing Method	Reaction Injection Molding (RIM	)	
1.00   998   9/cm³   ASTM D792	Physical	Nominal Value	Unit	Test Method
Molding Shrinkage - Flow (3.00 mm)	Specific Gravity			
Molding Shrinkage - Flow (3.00 mm)         1.4         %         Internal method           Water Absorption (24 hr, 3.00 mm)         3.3         %         Internal method           Water absorption rate-240 hr (3.00 mm)         5.0         %         Internal method           Low Temperature Brittleness (-50°C, 3.00 mm)         No Cracking         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Durometer Hardness         ASTM D2240         ASTM D2240           Shaw A, 3.00mm         90         ASTM D2240           Shaw D, 3.00mm         40         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D638           Flexural Modulus         4STM D790         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         Nominal Value         Unit         Test Method		0.998	g/cm³	ASTM D792
Water Absorption (24 hr, 3.00 mm)         3.3         %         Internal method           Water absorption rate-240 hr (3.00 mm)         5.0         %         Internal method           Low Temperature Brittleness (-50°C, 3.00 mm)         No Cracking         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Durometer Hardness         ASTM D2240         Shaw A, 3.00mm         90         ASTM D2240           Shaw D, 3.00mm         40         Unit         Test Method           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D638           Flexural Modulus         ASTM D790         -30°C, 3.00 mm         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         XSTM D412         Test Method		1.00	g/cm³	ASTM D1622
Water absorption rate-240 hr (3.00 mm) 5.0 % Internal method Low Temperature Brittleness (-50°C, 3.00 mm) No Cracking ASTM D746  Water Immersion, Length Increase 1.4 % Internal method  Hardness Nominal Value Unit Test Method  Durometer Hardness 90 ASTM D2240  Shaw A, 3.00mm 90 ASTM D2240  Shaw D, 3.00mm 40 Unit Test Method  Mechanical Nominal Value Unit Test Method  Tensile Strength (Break, 3.00 mm) 15.2 MPa ASTM D638  Flexural Modulus	Molding Shrinkage - Flow (3.00 mm)	1.4	%	Internal method
Low Temperature Brittleness (-50°C, 3.00 mm)         No Cracking         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Durometer Hardness         ASTM D2240           Shaw A, 3.00mm         90         ASTM D2240           Shaw D, 3.00mm         40         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D2340           Flexural Modulus         MPa         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           65°C, 3.00 mm         54.5         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         ASTM D412	Water Absorption (24 hr, 3.00 mm)	3.3	%	Internal method
mm)         No Cracking         ASTM D746           Water Immersion, Length Increase         1.4         %         Internal method           Hardness         Nominal Value         Unit         Test Method           Durometer Hardness         ASTM D2240         ASTM D2240           Shaw A, 3.00mm         90         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D638           Flexural Modulus         4STM D790         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           65°C, 3.00 mm         54.5         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         ASTM D412	Water absorption rate-240 hr (3.00 mm)	5.0	%	Internal method
Hardness         Nominal Value         Unit         Test Method           Durometer Hardness         ASTM D2240           Shaw A, 3.00mm         90         ASTM D2240           Shaw D, 3.00mm         40         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D638           Flexural Modulus         ASTM D790         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           65°C, 3.00 mm         54.5         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         ASTM D412		No Cracking		ASTM D746
Durometer Hardness         ASTM D2240           Shaw A, 3.00mm         90         ASTM D2240           Shaw D, 3.00mm         40         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D638           Flexural Modulus         ASTM D790         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           65°C, 3.00 mm         54.5         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         ASTM D412	Water Immersion, Length Increase	1.4	%	Internal method
Shaw A, 3.00mm         90         ASTM D2240           Shaw D, 3.00mm         40         Interpretation of the properties of	Hardness	Nominal Value	Unit	Test Method
Shaw D, 3.00mm         40         ASTM D2240           Mechanical         Nominal Value         Unit         Test Method           Tensile Strength (Break, 3.00 mm)         15.2         MPa         ASTM D638           Flexural Modulus         ASTM D790         ASTM D790           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           65°C, 3.00 mm         54.5         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         ASTM D412	Durometer Hardness			ASTM D2240
MechanicalNominal ValueUnitTest MethodTensile Strength (Break, 3.00 mm)15.2MPaASTM D638Flexural ModulusASTM D790-30°C, 3.00 mm163MPaASTM D79023°C, 3.00 mm68.9MPaASTM D79065°C, 3.00 mm54.5MPaASTM D790ElastomersNominal ValueUnitTest MethodTensile StressASTM D412	Shaw A, 3.00mm	90		ASTM D2240
Tensile Strength (Break, 3.00 mm)       15.2       MPa       ASTM D638         Flexural Modulus       ASTM D790         -30°C, 3.00 mm       163       MPa       ASTM D790         23°C, 3.00 mm       68.9       MPa       ASTM D790         65°C, 3.00 mm       54.5       MPa       ASTM D790         Elastomers       Nominal Value       Unit       Test Method         Tensile Stress       ASTM D412	Shaw D, 3.00mm	40		ASTM D2240
Flexural Modulus           -30°C, 3.00 mm         163         MPa         ASTM D790           23°C, 3.00 mm         68.9         MPa         ASTM D790           65°C, 3.00 mm         54.5         MPa         ASTM D790           Elastomers         Nominal Value         Unit         Test Method           Tensile Stress         ASTM D412         ASTM D412	Mechanical	Nominal Value	Unit	Test Method
-30°C, 3.00 mm       163       MPa       ASTM D790         23°C, 3.00 mm       68.9       MPa       ASTM D790         65°C, 3.00 mm       54.5       MPa       ASTM D790         Elastomers       Nominal Value       Unit       Test Method         Tensile Stress       ASTM D412	Tensile Strength (Break, 3.00 mm)	15.2	MPa	ASTM D638
23°C, 3.00 mm       68.9       MPa       ASTM D790         65°C, 3.00 mm       54.5       MPa       ASTM D790         Elastomers       Nominal Value       Unit       Test Method         Tensile Stress       ASTM D412	Flexural Modulus			ASTM D790
65°C, 3.00 mm 54.5 MPa ASTM D790 Elastomers Nominal Value Unit Test Method Tensile Stress ASTM D412	-30°C, 3.00 mm	163	MPa	ASTM D790
Elastomers Nominal Value Unit Test Method Tensile Stress ASTM D412	23°C, 3.00 mm	68.9	MPa	ASTM D790
Tensile Stress ASTM D412	65°C, 3.00 mm	54.5	MPa	ASTM D790
	Elastomers	Nominal Value	Unit	Test Method
20% strain <sup>1</sup> 4.14 MPa ASTM D412	Tensile Stress			ASTM D412
	20% strain <sup>1</sup>	4.14	MPa	ASTM D412

50% strain, 3.00mm <sup>2</sup>	5.17	MPa	ASTM D412
100% strain, 3.00mm <sup>3</sup>	6.89	MPa	ASTM D412
Tensile Strength (Break, 3.00 mm)	15.2	MPa	ASTM D412
Tensile Elongation (Break, 3.00 mm)	300	%	ASTM D412
Tear Strength <sup>4</sup> (3.00 mm)	42.0	kN/m	ASTM D624
Thermal	Nominal Value	Unit	Test Method
CLTE - Flow (3.00 mm)	1.7E-4	cm/cm/°C	ASTM D696
Thermoset	Nominal Value	Unit	Test Method
Thermoset Components <sup>5</sup>			
Component a	Mixing ratio by weight: 38		
Component B	Mixing ratio by weight: 100		
- 11=			
Demold Time	0.50	min	

Part A

Type: Isocyanate

Specific Gravity @ 25°C: 1.21 Viscosity @25°C: 700 mPa-s Flash Point PMCC: 213 °C

Part B Type: Polyol

Specific Gravity @ 25°C: 1.03 Viscosity @25°C: 1350 mPa-s Flash Point PMCC: 185 °C Molding Parameters

Material Temperature: 32 to 42  $^{\circ}$ C Mold Temperature: 65 to 70  $^{\circ}$ C

NOTE	
1.	Die C, 510 mm/min
2.	C mold, 510mm/min
3.	Mouth die C, 510mm/min
4.	C mould
5.	105 Index

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