

# Baydur® 646 (20 pcf)

Polyurethane (MDI)

Covestro - PUR

## Message:

Baydur 646 is a rigid polyurethane structural foam system used in the reaction injection molding (RIM) process. The system is supplied as two reactive liquid components: Component A is a polymeric diphenylmethane diisocyanate (PMDI), and Component B is a formulated polyol system containing no CFC- or HCFC-blowing additives.

The Baydur 646 system is used to produce foam cores for composite applications, such as water skis, wake boards, snow boards, and various components for the transportation and marine markets. As with any product, use of the Baydur 646 system in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

General Information			
Uses	Structural Foam		
	Ship application		
	Application in Automobile Field		
	Sporting goods		
Processing Method	Reaction Injection Molding (RIM)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.319	g/cm <sup>3</sup>	ASTM D792
Molding Shrinkage - Flow (6.35 mm)	0.30 - 0.50	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shaw D, 6.35mm	37		ASTM D2240
Shaw D, 12.7mm	39		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength			ASTM D638
Fracture, 6.35mm	6.07	MPa	ASTM D638
Fracture, 12.7mm	6.21	MPa	ASTM D638
Tensile Elongation			ASTM D638
Fracture, 6.35mm	7.0	%	ASTM D638
Fracture, 12.7mm	9.0	%	ASTM D638
Flexural Modulus			ASTM D790
6.35 mm	303	MPa	ASTM D790
12.7 mm	248	MPa	ASTM D790
Flexural Strength			ASTM D790
6.35 mm	8.27	MPa	ASTM D790
12.7 mm	8.96	MPa	ASTM D790
Compressive Strength			ASTM D695
6.35 mm	6.07	MPa	ASTM D695
12.7 mm	3.79	MPa	ASTM D695
Impact	Nominal Value	Unit	Test Method

Charpy Unnotched Impact Strength <sup>1</sup>	5.3	kJ/m <sup>2</sup>	Internal method
Thermoset	Nominal Value		
Thermoset Components			
Component a	Mixing ratio by weight: 110		
Component B	Mixing ratio by weight: 100		
Additional Information			
Part A			
Type: Isocyanate			
Appearance: Dark brown to black liquid			
Specific Gravity @ 25°C: 1.24			
Viscosity @25°C: 200 cps			
Flash Point PMCC: 199°C			
NCO: 31.5 wt%			
Part B			
Type: Polyol			
Appearance: Amber liquid			
Specific Gravity @ 25°C: 1.08			
Viscosity @25°C: 1200 cps			
Flash Point PMCC: 123°C			
Water: 1.05 wt%			
Hydroxyl Number: 370 KOH/g			
Material Temperatures: 29 to 38°C Mold Temperature: 50 to 60°C Hand Mix Reactivity at 25°C			
Cream Time: 30 to 40 sec			
Gel Time: 65 to 75 sec			
Tack Free Time: 77 to 85 sec			
Free-Rise Density: 5 to 7 lb/ft <sup>3</sup>			
Machine Reactivity at 30°C			
Cream Time: 10 to 20 sec			
Gel Time: 30 to 40 sec			
Tack Free Time: 50 to 60 sec			
Free-Rise Density: 5 to 7 lb/ft <sup>3</sup>			
Polyol Nucleation Specific Gravity: 0.8 to 0.9 0Typical cure Time, 0.500 in Thickness: 4 to 5 secMolded Density: 10 to 30 lb/ft <sup>3</sup>			
NOTE			

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