Bayer MaterialScience

Product Information

PRISM® CM-200

Solid Polyurethane RIM System

Description

Prism CM-200 solid polyurethane system is used in the reaction injection molding (RIM) process. The system incorporates an internal mold release (IMR) and is supplied as two reactive components: Component A is a polymeric diphenylmethane diisocyanate (MDI), and Component B is a polyol blend. The Prism CM-200 system has a UL94 flammability rating of V-0/5VA and is used for applications in the electronic, equipment housing and appliance markets. The applications typically take advantage of the material's strength, excellent surface finish, and large-part capability. As with any product, use of the Prism CM-200 system in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

Processing Conditions

Molding Parameters	
Material Temperature,°C(°F)	32-38 (90-100)
Mold Temperature,°C(°F)	65-75 (150-167)
Reactivity(Machine Mix) at 35°C (95°F):	
Cream Time, sec.	4
Gel Time, sec.	6
Tack-Free Time, sec.	7
Typical Cure Time, min	
0.125-in Thickness	2-3
Typical Mold Density, lb/ft^3	68
Polyol Nucleation	
Specific Gravity	0.80-0.85
Mixing Ratio, Iso/Poly, 110 Index	
By Weight	132/100
By Volume	113/100

Typical Properties of Components*

Property	Isocyanate (Component A)	Polyol (Component B)
Appearance	Dark brown liquid	Yellow to dark brown viscous liquid
Specific Gravity at 25°C	1.24	1.07
Viscosity at 25°C, mPa·s	72	1,800
Flash Point, PMCC,°C	203	206
NCO, Wt. %	31.8 min	-
Water, Wt. %	-	< 0.10

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*

Typical Physical Properties* of System

Property	ASTM Test Method (Other)	Unit	Value
General			
Specific Gravity	D 792		1.09
Density	D 1622	lb/ft^3	68
Thickness		in	0.125
Shore Hardness	D 2240	D Scale	75
Mold Shrinkage	(Bayer)	%	0.7-0.9
Mechanical			
Tensile Strength at Break	D 638	lb/in^2	7,000
Tensile Elongation at Break	D 638	%	9
Flexural Modulus	D 790	lb/in^2	290,000
Flexural Strength	D 790	lb/in^2	11,000
Unnotched Impact Strength	D 256	ft·lb/in	8
Thermal			
Deflection Temperature Under Load, 66 psi	D 648	°F	221
Heat Sag, 4-in Overhang	D 3759	(mm)	0.16 (4)
(1 hr. at 250°F)			
Relative Temperature Index	(UL746B)	°C	
Electrical			
0.125-in Thickness			90**
0.250-in Thickness			85**
Mechanical with Impact			
0.125-in Thickness			80**
0.250-in Thickness			75**
Mechanical without Impact			
0.125-in Thickness			90**
0.250-in Thickness			85**
Flammability* **			
UL94 Flame Class	(UL94)	Rating	
0.125-in Thickness			V-0/5VA
Electrical			
Volume Resistivity	D 257	ohm·cm	5.2 E+14
Surface Resistivity	D 257	ohm	7.9 E+14
Dielectric Strength	D 149	kV/mm	19.2
Dielectric Constant at 1 MHz	D 150		3.06

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*** Bayer provisional value.*
**** Flammability resultsare based on small-scall laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented bt this or any other material under actual fire conditions.*

Storage and Handling

Isocyanate Component – Component A (MDI isocyanate) must be stored in tightly closed containers and protected from contamination with moisture and foreign materials, which can adversely affect processing. It will react slowly with water to form ureas and liberate carbon dioxide gas, which may cause sealed containers to expand and rupture. Storage temperature should be maintained between 24° and 30°C (75° and 86°F).

Polyol Component – Component B (polyol) is hygroscopic and must be kept in tightly closed containers to prevent contamination with moisture and foreign materials, which can adversely affect processing. Storage temperatures should be maintained between 5° and 37°C(40° and 100°F). This polyol system will separate into phases without agitation. Therefore, it is important to mix it thoroughly prior to and during its use.

Some of the end-uses of the products described in this bulletin must comply with applicable regulations, such as FDA, NSF, USDA and CPSC. If you have questions on the regulatory status of this product, contact your Bayer MaterialScience representative or Bayer's Regulatory Manager in Pittsburgh, PA.

Health And Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Prism CM-200 system. Before working with these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets and product labels. Consult your local Bayer MaterialScience representative or contact Bayer's Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

This product is not designated as "Medical Grade" and therefore shall not be considered a candidate for the manufacture of a medical device or of intermediate products for medical devices, which are intended under normal use to be brought into direct contact with the patient's body (e.g., skin, body fluids or tissues, including Indirect contact to blood). If the intended use of the product is for the manufacture of a medical device or of intermediate products for medical devices, Bayer MaterialScience LLC must be contacted in advance to provide its agreement to sell such product for such purpose. Nonetheless, any determination as to whether a product is appropriate for use in a medical device or intermediate products for medical devices must be made solely by the purchaser of the product without relying upon any representations by Bayer MaterialScience LLC. For further information, please contact bmsmedicalapplication@bayer.com.*

**Please see the "Guidance on Use of Bayer MaterialScience Products in a Medical Application" document which can be located at baycareonline.com.*

Note: The information contained in this bulletin is current as of March 2012, please contact Bayer MaterialScience to determine whether this publication has been revised.

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