Bayer MaterialScience

Product Information

BAYDUR® 730 IBS

Structural Foam RIM System

Description

Baydur 730 IBS is a rigid polyurethane structural foam system used in the reaction injection molding (RIM) process. This system incorporates a specially engineered interactive blowing system (IBS) and is supplied as two reactive liquid components. Component A is a modified polymeric diphenylmethane diisocyanate (PMDI) prepolymer blend, and Component B is a formulated polyol system containing no CFC- or HCFC-blowing additives.

The Baydur 730 IBS system was designed for general-purpose applications and is used in the construction, agricultural, consumer products, industrial and specialty automotive markets. The applications typically take advantage of the material's strength, as well as its excellent surface finish, large part capability and good flowability. As with any product, use of the Baydur 730 IBS system in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

Typical Properties of System*

Property	ASTM Test Method (Other)	Unit	Density 25 pcf	35 pcf	40 pcf	48 pcf
0.250-in Thickness						
Specific Gravity	D 792		0.40	0.56	0.64	0.48
Shore Hardness	D 2240	Shore Scale	50D	60D	65D	75D
Mold Shrinkage	(Bayer)	%	0.70 - 0.90	0.70 - 0.90	0.70 - 0.90	0.70 - 0.90
Tensile Strength at Break	D 638	lb/in^2	1,200	2,100	2,700	3,400
Tensile Elongation at Break	D 638	%	10	10	10	10
Flexural Modulus	D 790	lb/in^2	58,000	110,000	140,000	179,000
Flexural Strength	D 790	lb/in^2	2,000	4,000	5,000	7,000
Charpy Impact	(Bayer)	ft·lb/in^2	5.8	10	13	16
Deflection Temperature Under Load: 66 psi	D 648	°C (°F	70 (158)	85 (185)	94 (201)	100 (212)
0.500-in Thickness						
Specific Gravity	D 792		0.40	0.56	0.64	0.77
Shore Hardness	D 2240	Shore Scale	50D	60D	65D	75D
Mold Shrinkage	(Bayer)	%	0.70 - 0.90	0.70 - 0.90	0.70 - 0.90	0.70 - 0.90
Tensile Strength at Break	D 638	lb/in^2	1,300	1,900	2,500	3,500
Tensile Elongation at Break	D 638	%	12	12	12	12
Flexural Modulus	D 790	lb/in^2	52,000	100,000	130,000	170,000
Flexural Strength	D 790	lb/in^2	2,500	4,000	5,500	7,200
Charpy Impact	(Bayer)	ft·lb/in^2	5.5	8	10	12.5
Deflection Temperature Under Load: 66 psi	D 648	°C (°F)	70 (158)	80 (176)	90 (194)	100 (212)

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

Typical Properties* of Components

Property	Isocyanate (Component A)	Polyol (Component B)
Appearance	Dark brown liquid	Colorless liquid
Specific Gravity at 25°C	1.24	1.05
Viscosity at 25°C, mPa•s	320	1,400
Flash Point, PMCC, °C	213	191
NCO, Wt. %	27.3	-
Water, Wt. %	-	0.54 - 0.66
Hydroxyl Number, mg KOH/g	-	502 - 542

Processing Conditions

Molding Parameters*	
Material Temperature,°C (°F)	
Isocyanate (Component A)	30 - 32 (86 - 90)
Polyol (Component B)	35 - 38 (95 - 100)
Mold Temperature,°C (°F)	66 - 76 (150 - 170)
Hand Mix Reactivity @ 25°C:	
Cream Time, sec	18 - 28
Gel Time, sec	36 - 46
Tack-Free Time, sec	44 - 55
Free-Rise Density, lb/ft^3	7.5 - 10.0
Polyol Nucleation; Specific Gravity	0.80 - 0.85
Recommended Shot Time, sec	7
Recommended Demold Time, min:	
0.250-in Thickness	3 - 4
Mixing Ratio, Isocyanate/Polyol, 110 Index:	
By Weight	165/100
By Volume	140/100

Storage and Handling

Isocyanate Component -Component A (PMDI isocyanate blend) must be stored in tightly closed containers to prevent contamination with moisture and other foreign materials, which can adversely affect processing. It will react slowly with water to form polyureas and liberate carbon dioxide gas, which may cause sealed containers to expand and rupture. Storage temperatures should be maintained between 18° and 30°C (64° and 86°F).

Polyol Component - Component B (polyether polyol system) is slightly hygroscopic and may absorb water. Containers must be kept tightly closed and protected from contamination with moisture and foreign materials. Storage should be maintained at ambient temperature. Note: Component B phase-separates upon standing and must be mixed thoroughly via mechanical means prior to use.

Health And Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Baydur 730 IBS components. 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.

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

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 May 2012, please contact Bayer MaterialScience to determine whether this publication has been revised.

Bayer MaterialScience LLC

100 Bayer Road • Pittsburgh, PA 15205-9741 • Phone: 1-800-662-2927 • www.bayermaterialsciencenafta.com

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.

5/12