

**BAYTEC® ME-230***MDI Polyether Prepolymer*

Product Information

Description

Baytec ME-230 is a modified diphenylmethane diisocyanate (MDI)-terminated polyether prepolymer based on polytetramethylene ether glycol (PTMEG).

Application

This prepolymer can be processed at room temperature with a variety of polyols and chain extender blends. It is used in the formulation of high-performance one-shot cast elastomers. As with any product, use of Baytec ME-230 prepolymer in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Product Specifications

Property	Value
NCO, Wt.%	22.7 - 23.3

Typical Properties*

Property	Value
Appearance at 25°C	Colorless to pale yellow liquid
Viscosity at 25°C, mPa·s	300
Specific Gravity at 25°C	1.14
Flash Point, PMCC	>93°C
Density at 25°C, lb/gal	9.5
Melt Point	5 – 10°C

Typical Properties* of Cast Elastomer

Property	ASTM Test Method	Values at Specified Mix Ratio					
		31	40	50	100	137	177
Polyol Formulation and Mix Ratio							
Baytec ME-230 Isocyanate		31	40	50	100	137	177
Polytetramethylene Ether Glycol-2000		97	95	92.5	80	70	60
1,4-Butanediol		3	5	7.5	20	30	40
Shore Hardness	D 2240	67A	74A	85A	97A/55D	57D	65D
Bayshore Resilience, %	D 2632	68	68	66	65	63	59
Tensile Strength at Break, lb/in ²	D 412	2360	3080	3030	4170	5080	4310
Tensile Stress, lb/in ² :	D 412						
100% Elongation		300	410	730	1650	2360	3120
200% Elongation		390	580	950	2080	2960	3380
300% Elongation		510	830	1230	2650	2520	3750
Tensile Elongation at Break, %	D 412	590	530	540	470	410	430
Tear Strength, lbf/in							
Split Tear	D 1938	110	110	80	300	400	580
Die C	D 624	300	380	410	570	700	930
Taber Abrasion:							
mg Loss/1,000 Cycles	D 3489	N/A	14	7	34	51	53
Compression Set, %	D 395-B						
22 hours at 70°C		34	19	23	25	31	36

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

Storage and Handling

Baytec ME-230 prepolymer must be stored in tightly closed containers and protected from contamination with moisture and other foreign substances, which can adversely affect processing. The prepolymer is most stable if kept in the liquid state at all times. It will react slowly with water to form ureas and carbon dioxide gas, which may cause sealed containers to expand and rupture. The headspace of partially filled containers should be blanketed with dry nitrogen.

Storage temperatures should be maintained between 15 and 30°C (59 and 86°F). Under these conditions, Baytec ME-230 prepolymer will remain clear for periods of up to six months. Within this range, lower storage temperatures will maximize the storage life of the product.

Baytec ME-230 prepolymer must not be allowed to freeze. Exposure to temperatures less than 15°C (59°F), even for short periods of time, can result in the formation of solid material. During the winter months, appropriate precautions must be taken during shipment and storage.

Prolonged storage of solid or partially solid Baytec ME-230 prepolymer may result in the formation of MDI dimer in amounts which exceed its solubility in the prepolymer at normal storage temperatures. This can make the product unusable.

If solids should form because of exposure of Baytec ME-230 prepolymer to lower temperatures, it may be possible to reliquify the product by reheating. Use a well-ventilated oven for the minimum time necessary to render it clear. The temperature of the product should not exceed 60°C (140°F). Agitation or drum rollers are recommended to avoid excessive local heating, which will degrade the prepolymer.

Significant amounts of MDI dimer may form during the heating process. As a result, the remelted prepolymer may be cloudy, and the processing behavior and properties of the final product may be affected.

It is recommended that remelted Baytec ME-230 prepolymer be processed through a filter, such as a cuno-type filter using cotton cartridges, before use. In no case should partially melted material be decanted and used.

Warning

Prolonged exposure of Baytec ME-230 prepolymer to temperatures of 70°C or higher may cause dangerous pressure build-up, resulting in deformation and/or rupture of sealed containers. To prevent excessive local over-heating, avoid the use of electrical heat tape and open flames when heating this product.

Health And Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling Baytec ME-230 prepolymer. 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 December 2011, please contact Bayer MaterialScience to determine whether this publication has been revised.

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