BaySystems

Product Information

BAYTEC® TE 42

TDI Polyether Prepolymer

Description

Baytec TE 42 is a Toluene diisocyanate (TDI)-terminated polyether prepolymer with a very low free TDI content. It is a solid at ambient temperature and should be melted prior to use. When extended with substituted diamine chain extenders, it produces elastomers with superior physical properties. As with any product, use of Baytec TE 42 in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

Product Specifications of Prepolymer

Property	Value
NCO, %	3.95 - 4.45
Viscosity @ 70°C, mPa.s	700 - 1700

Typical Properties* of Prepolymer

Property	Value
Appearance	White solid
Specific Gravity @ 70°C	1.005
Flash Point, PMCC, °C	> 200
Density @ 70°C, lb/gal	8.375
Free TDI monomer, wt. %	< 0.1

Storage and Handling

Baytec TE 42 prepolymer must be stored in tightly closed containers and protected from contamination with moisture and other foreign substances, which can adversely affect processing. It will react slowly with water to form ureas and CO_2 gas, which may cause sealed containers to expand and rupture. Partially filled containers should be blanketed with dry nitrogen.

Storage temperatures should be maintained below 30°C (86°F). Under these conditions, Baytec TE 42 prepolymer will remain stable for periods of up to six months from date of receipt. Storage temperatures higher than 40°C (104°F) should also be avoided since this will result in deterioration of product.

Baytec TE 42 prepolymer may be reliquified by heating in a convection oven at 60°C (140°F). 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.

Maintaining Baytec TE 42 prepolymer for extended periods of time at the processing temperature of 100°C can lead to an increase in the free TDI monomer content. It is estimated that after 24 hours at 100°C, the free TDI monomer content is increased by 0.26%.

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

Processing Conditions

For detailed information on processing procedures and equipment, please consult Bayer's Baytec Prepolymers and Quasi-Prepolymers for Polyurethane Cast Elastomers - *Processing Guide.*

Molding Parameters*	MbOCA
NCO/OH Ratio	1.05
Stoichiometry, % Theory	95
Prepolymer Temperature	90 -100°C (194 - 212°F)
Extender Temperature	110 -120°C (230 - 250°F)
Mold Temperature	110 -115°C (230 - 240°F)
Pot Life, min.	9 - 10
Demold Time, min.	30 - 40
Postcure Temperature	110°C (230°F)
Postcure Time, hr.	24

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 TE 42 prepolymer. Before working with this system, you must read and become familiar with the available information on its 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 Bayer MaterialScience representative or contact Bayer's Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

Typical Properties of Cast Elastomer*

Property	ASTM Test Method	Unit	MbOCA Extender
Durometer Hardness	D 2240	Shore Scale	90A/36D
Bayshore Resilience	D 2632	%	52
Tensile Strength	D 412	psi	2044
Tensile Stress	D 412	psi	
100% Elongation			1078
200% Elongation			1460
300% Elongation			2076
Ultimate Elongation	D 412	%	292
Die C Tear	D 624	psi	352
Split Tear	D 1938	psi	96
Compression Set, 22 hrs @ 70°C	D 395B	%	20
Compression Deflection	D 575	psi	
2%			162
5%			361
10%			602
15%			783
20%			960
25%			1158
50%			2774

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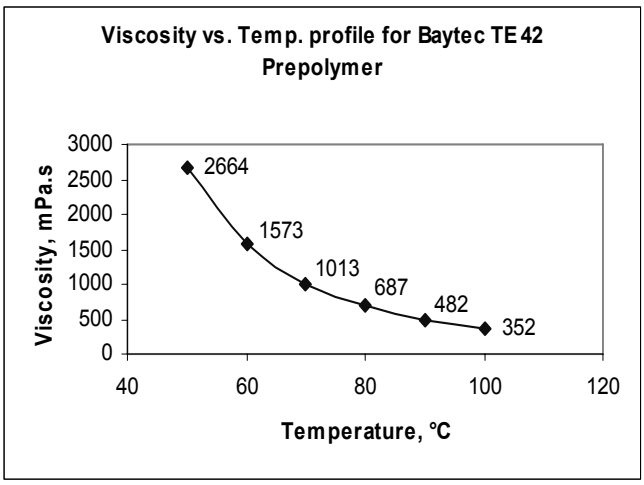

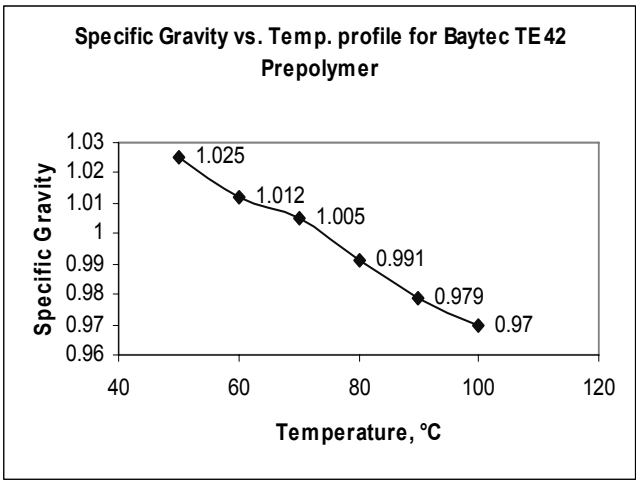

Note: The information contained in this bulletin is current as of February 2008. Please contact Bayer MaterialScience to determine whether this publication has been revised.

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