

BAYDUR[®] VP.PU 60BD33

General Properties and Applications Baydur VP.PU 60BD33 is a polyol formulation which is reacted with Desmodur[®] VP.PU 26IK01, Desmodur 44P01 or Desmodur VP.PU 26BD14 by the RIM method to produce moldings in the 500 to 700 kg/m³ density range.

The mold-foamed, microcellular products of this reaction are Baydur 60 or with suitable flame retardants Baydur 67 FR, Baydur 67 FR-1, and Baydur 67 FR-2.

The ready-to-use polyol formulation contains neither fillers nor CFCs.

Stored material must be thoroughly homogenized before processing.

Sampling

Moisture access should be prevented during sampling.

The product should be homogenized before processing.

Specification Property	Value	Unit of measurement	Method
Hydroxyl number	498 ± 25	mg KOH/g	PET-11-01
Water content	0.83 ± 0.07	% by wt.	PET-19-01
Viscosity at 25 °C	2,500 ± 250	mPa·s	PET-10-01

Other Data* Property	Value	Unit of measurement	Method
Density at 25 °C	approx. 1.03	g/ml	PET-07-01
pH value	approx. 8.8		PET-13-01

* These values provide general information and are not part of the product specification

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Storage

Drums should be protected against strong sunlight and always kept sealed to protect the contents from moisture or damp air.

Shelf life from date of delivery: 6 months

Storage temperature: 15 - 35 °C

Labeling and REACH applications

This product data sheet is only valid in conjunction with the latest edition of the corresponding Safety Data Sheet. Any updating of safety-relevant information – in accordance with statutory requirements – will only be reflected in the Safety Data Sheet, copies of which will be revised and distributed. Information relating to the current classification and labeling, applications and processing methods and further data relevant to safety can be found in the currently valid Safety Data Sheet.

Directions for Processing

Foaming formulation for Baydur 60:

Baydur VP.PU 60BD33	100 pbw
Desmodur VP.PU 26IK01 or Desmodur 44P01 or Desmodur VP.PU 26BD14	145 pbw or 145 pbw or 150 pbw

Foaming formulation for Baydur 67 FR:

Baydur VP.PU 60BD33	100 pbw.
Exolit [®] AP 422 ²⁾ , Supplier Clariant AG or FR CROS 484 ²⁾ , Supplier Budenheim	15 pbw
Desmodur VP.PU 26IK01	145 pbw

²⁾ Ammonium polyphosphate

If flame retardants with the same chemical description but different trade names are used, it is the responsibility of the producer of the finished parts to ensure that the resultant polyurethane has the necessary fire safety classification in accordance with the relevant fire test standard.

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Directions for Processing

Foaming formulation for Baydur 67 FR-1:

Baydur VP.PU 60BD33	100 pbw
Exolit [®] AP 422 ²⁾ , Supplier Clariant AG or FR CROS 484 ²⁾ , Supplier Budenheim	15 pbw
Desmodur 44P01	145 pbw

Foaming formulation for Baydur 67 FR-2:

Baydur VP.PU 60BD33	100 pbw
Exolit [®] AP 422 ²⁾ , Supplier Clariant AG or FR CROS 484 ²⁾ , Supplier Budenheim	15 pbw
Desmodur VP.PU 26BD14	150 pbw

²⁾ Ammonium polyphosphate

If flame retardants with the same chemical description but different trade names are used, it is the responsibility of the producer of the finished parts to ensure that the resultant polyurethane has the necessary fire safety classification in accordance with the relevant fire test standard.

Processing data

Recommended processing temperature: 28 - 35 °C

Density for moldings: 500 - 700 kg/m³

Mold temperature: 55 - 65 °C

Laboratory processing data

The processing data were obtained from laboratory trials with Desmodur VP.PU 26IK01. The raw materials were at a temperature of approx. 23 °C.

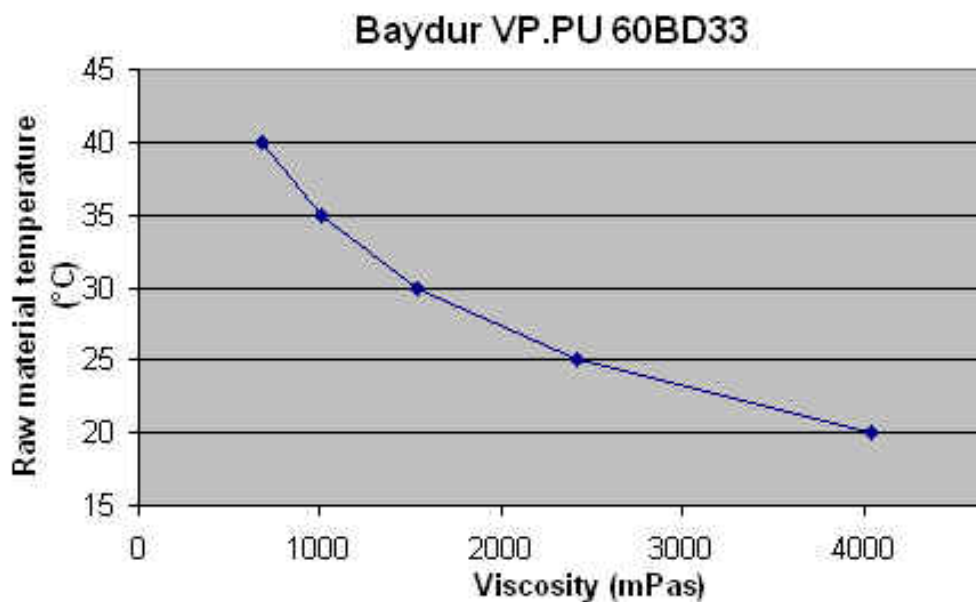
Baydur VP.PU 60BD33 was aerated for 30 s at 3,000 rpm and then stirred together with the Desmodur for 10 s.

Cream time	approx. 18 s
Curing time	approx. 33 s
Density of free-rise foam	approx. 145 kg/m ³

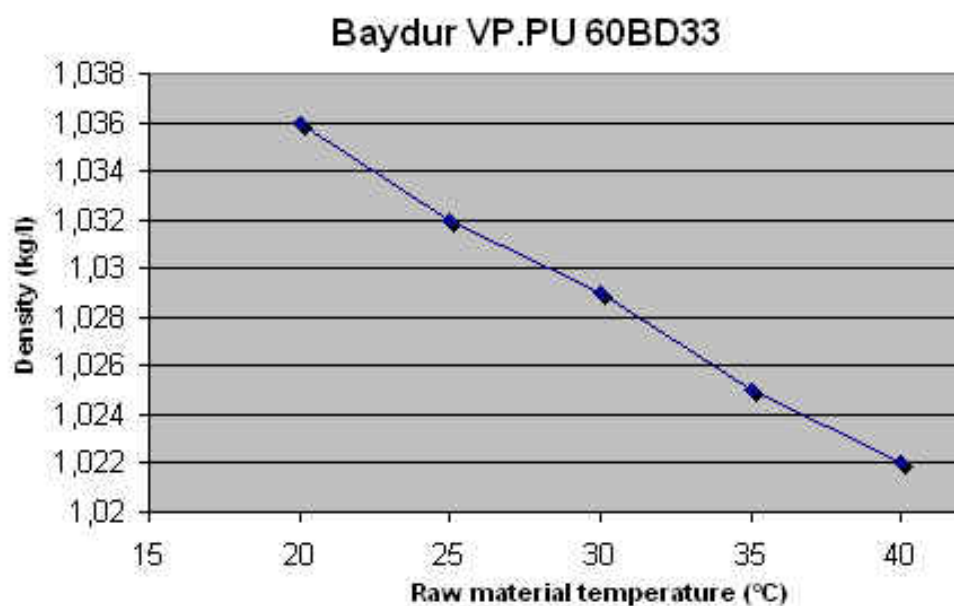
Control pours produced by free-rise foaming for the purpose of checking the processing characteristics of the product must be removed from the production area immediately after evaluation because of the risk of spontaneous combustion. They should be taken to a specially designated fire-protected area in the open and left there until they have cooled down completely.

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Viscosity of Baydur VP.PU 60BD33 vs. raw material temperature



Density of Baydur VP.PU 60BD33 vs. raw material temperature



Release properties

Baydur VP.PU 60BD33 / Desmodur VP.PU 26IK01, Desmodur 44P01 or Desmodur VP.PU 26BD14 moldings of suitable geometry produced in heated metal molds require very little, if any external release agent.

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Mechanical properties

Mechanical, thermal, and other properties were measured on specimens cut from a 1,000 x 500 x 10 mm sheet.

Property	Units	Standard	Baydur 60 (Desmodur 26IK01)	Baydur 67 FR
Density	kg/m ³	DIN EN ISO 845	630	635
Tensile strength	N/mm ²	DIN EN ISO 527	18	16
Tensile modulus	N/mm ²	DIN EN ISO 527	660	650
Elongation at break	%	DIN EN ISO 527	8	7
Flexural strength (rupture)	N/mm ²	DIN 53423	32	30
Flexural modulus	N/mm ²	DIN 53423	740	740
Compressive strength	MPa	DIN 53421	19	19
Compressive modulus	MPa	DIN 53421	270	270
Impact strength at 22 °C	KJ/m ²	DIN EN ISO 179	16	14
Surface hardness Shore D			69	68
Heat deflection temperature Meth. B	°C	DIN EN ISO 75–2	101	97

These values are given only as a guide and must be verified in each individual case on finished parts manufactured under the processor's production conditions.

Shrinkage behavior

Mold shrinkage (60BD33/26IK01) is 0.85 ± 0.1 % (production tolerance).

This value applies to a 10 mm thick sheet with a density of 600 kg/m³ produced in accordance with the given processing formulation in an aluminum mold heated to 60 °C and with a demold time of 8 minutes.

Adding ammonium polyphosphate during the production of Baydur 67 FR reduces shrinkage by approx. 0.10 %.

Molding shrinkage is influenced by changes in processing conditions and particularly when changing to different part geometries. Lengthy periods of storage at high humidity – and also at particularly low humidity – can cause greater or lesser degrees of shrinkage.



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Fire performance

Baydur 67 FR, Baydur 67 FR-1 and Baydur 67 FR-2 are the flame retardant versions of Baydur 60 and contains ammonium polyphosphate.

With wall thicknesses above 6 mm, Baydur 67 FR, Baydur 67 FR-1 and Baydur 67 FR-2 at a density of 560 to 650 kg/m³ achieve UL-94 V0 in accordance with Underwriters Laboratories Inc.

The products are listed by Underwriters Laboratories Inc. under File no.: E83364.

The methods described in this publication for testing the fire performance of polyurethane and the results quoted do not permit direct conclusions to be drawn regarding every possible fire risk there may be under service conditions. Furthermore, this does not release the producer of the finished parts from his obligation to carry out suitable tests on his end product with respect to fire performance and/or fire risk in order to guarantee conformity with the required fire safety standard.

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, information and recommendations 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 Covestro. 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.

This product is not designated as „Medical Grade“ (1) 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)*. [This product is also not designated for Food Contact (2), including drinking water, or cosmetic applications. If the intended use of the product is for the manufacture of a medical device or of intermediate products for medical devices, for Food Contact products or cosmetic applications Covestro 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, for Food Contact products or cosmetic applications must be made solely by the purchaser of the product without relying upon any representations by Covestro.

1) Please see the "Guidance on Use of Covestro Products in a Medical Application" document.

2) As defined in Commission Regulation (EU) 1935/2004.

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 **Baydur[®]**

Product Datasheet