

# BAYDUR<sup>®</sup> Trial Product PU 1498

## General Properties and Applications

Baydur TP.PU 1498 is a polyol formulation which is reacted with Desmodur<sup>®</sup> 44P01 or Desmodur<sup>®</sup> TP.PU 26IK01 by the RIM method to produce moldings in the 1,050 to 1,150 kg/m<sup>3</sup> range.

The mold-foamed, microcellular products of this reaction are **Baydur 110** and **Baydur 110 FR**.

The ready-to-use polyol formulation contains no fillers and exhibits phase stability at temperatures above 18 °C.

## Specification

Property	Value	Units	Test method
Hydroxyl no.	445 – 485	mg KOH/g	2201-0211801-90D
Water content	0.2 – 0.4	%	2201-0212401-90D
Viscosity at 25 °C	1,300 – 1,700	mPas	2201-0212202-90D

## Other data\*

Property	Value	Units	Test method
Density at 25 °C	approx. 1.06	g/ml	DIN 51757
pH	approx. 9.5		2201-0212401-92

\*This is only general information. The values given here do not form part of the product specification.

## Packaging

Drums<sup>1)</sup>, tank wagons, tank containers, or IBCs on request.

<sup>1)</sup>Drums must not be emptied under pressure, but either by means of a pump or siphon or by pouring. This rules out processing direct from the drum under pressure. See the relevant national safety regulations for pressurized drums.

# BAYDUR<sup>®</sup> Trial Product PU 1498

## Storage

Storage temperature: 20 - 35 °C.

Material stored at below 18 °C must be warmed to at least 20 °C and thoroughly homogenized by stirring before it is processed.

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): 3 months

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## Processing advice

Recommended processing temperature: 28 - 35 °C

### Processing formulation for Baydur 110:

100 pbw	TP.PU 1498
128 pbw	Desmodur 44P01

or 128 pbw Desmodur TP.PU 26IK01

### Processing formulation for Baydur 110FR:

100 pbw	TP.PU 1498
15 pbw	ammonium polyphosphate* <sup>1</sup>
128 pbw	Desmodur 44P01

or 128 pbw Desmodur TP.PU 26IK01

### Processing formulation for Baydur 110FR (black pigmented):

100 pbw	TP.PU 1498
17 pbw	ammonium polyphosphate* <sup>1</sup>
4.5 pbw	Baydur Black Paste DN* <sup>2</sup>
128 pbw	Desmodur TP.PU 26IK01

- \*<sup>1</sup> e.g. Exolit<sup>®</sup> 422; Suppliers: Clairant GmbH
- \*<sup>2</sup> Suppliers: iSL Chemie GmbH

# BAYDUR<sup>®</sup> Trial Product PU 1498

<b>Machine processing data</b>	(Temperature of raw materials: 28 °C)		
	Curing time	(sec)	approx. 9
	Maximum mold filling time	(sec)	approx. 7
	Mold temperature	(°C)	60 - 65
<p>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 stored in a specially designated fire-protected area or left in the open until they have cooled down completely.</p> <p>When processing the polyol component we recommend 20 - 30 % by volume aeration (at normal atmospheric pressure).</p>			

**Mechanical properties** Mechanical, thermal and other properties were measured on specimens cut from a 1,000 x 500 x 4 mm sheet. The values are those obtained from processing Baydur TP.PU 1498 with Desmodur TP.PU 26IK01

Property	Units	Standard	Baydur 110	Baydur 110 FR
Density	kg/m <sup>3</sup>	DIN EN ISO 845	1,050	1,050
Tensile strength	MPa	DIN EN ISO 527	37	41.5
Elongation at break	%	DIN EN ISO 527	17	20
Flexural strength at 3.5 % strain in outer fibers	N/mm <sup>2</sup>	DIN EN ISO 178	49.3	48.4
Flexural modulus of elasticity	N/mm <sup>2</sup>	DIN EN ISO 178	1,767	1,730
Impact strength at 22 °C	kJ/m <sup>2</sup>	DIN EN ISO 179	64	50
Surface hardness Shore D			78	78
Heat deflection temperature Method B (0.45 MPa)	°C	DIN EN ISO 75-1/75-2	95	95
<u>Other properties (individual measurements, mold dwell time: 90 s, mold temperature: 60 °C)</u>				
Water absorption	%	DIN 53495	50 x 40 x 10 (mm) < 0,6	

# BAYDUR<sup>®</sup> Trial Product PU 1498

## Shrinkage

The longitudinal shrinkage was measured on 1,000 mm x 500 mm test sheets with a density of 1,050 kg/m<sup>3</sup>. The temperature of the mold was 60 °C and the mold dwell time was 120 sec. After storage in a standard atmosphere (test method: DA-IT-41-03), the shrinkage determined was as follows:

Sheet thickness	Shrinkage
4 mm	0.73 %
6 mm	0.87 %
8 mm	0.99 %

Adding ammonium polyphosphate during the production of **Baydur 110 FR** reduces shrinkage by approx. 0.05 – 0.10 %.

Mold shrinkage will vary with different processing conditions and, in particular, when changing to moldings of different geometries.

Lengthy storage at either high or very low humidity can result in greater or lesser degrees of shrinkage.

## Fire performance

**Baydur 110 FR** is the flame retardant version of Baydur 110 and contains ammonium polyphosphate.

**Baydur 110 FR** in the 1,050 to 1,150 kg/m<sup>3</sup> density range achieves UL 94 V-0 and UL 94 5V fire ratings as from a thickness of 3 mm.

The black-pigmented version of **Baydur 110FR** achieves a UL 94 V-0 and UL 94 5VA fire rating as from a thickness of 3.5 mm.

The product is listed under File no. E 83364 at Underwriters' Laboratories Inc., USA.

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.

# BAYDUR<sup>®</sup> Trial Product PU 1498

## Labeling

Labelling in accordance with directive 1999/45/EC (preparations) and its amendments and adaptations:  
Symbols: Xi hazard descriptions: irritant  
N dangerous for the environment  
Contains: alkylaminocarboxamide  
R 36/38: Irritating to eyes and skin.  
R 43: May cause sensitization by skin contact.  
R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
S 24: Avoid contact with skin.  
S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S 37: Wear suitable gloves.  
S 61: Avoid release to the environment. Refer to special instructions/Safety data sheets.

The section of this Technical Information Sheet headed "Labeling" does not take precedence over the information given in the Safety Data Sheet. Any updating of safety-relevant information – in accordance with EU directives – will only be reflected in the Safety Data Sheet, copies of which will be revised and distributed.

Further technical information relating to safety can be found in the Safety Data Sheet.

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