PRODUKT DATENBLATT

PLIXXENT.

PLIXXOPOL® RC 4880C012

Introduction & Application

PLIXXOPOL® RC 4880C012 is a polyol formulation which is reacted with PLIXXONAT® N111 und PLIXXONAT® N126 by the RIM method to produce mouldings in the density range of 1,050 – 1,150 kg/m³.

The mould-foamed, microcellular products of this reaction are BAYDUR® 110 and with suitable flame retardants BAYDUR® 110 FR-N, BAYDUR® 110 FR-2N and BAYDUR® 110 FR-6. The ready-to-use polyol formulation contains no fillers and exhibits phase stability at temperatures above 18 °C.

Typical Characteristics

Polyol component PLIXXOPOL® RC 4880C012:			
Appearance	at 25°C	brownish, liquid	
Density	at 20°C	approx.	1.06 g/cm³
Viscosity	at 25°C	approx.	1500 mPa*s
OH number		approx.	465 mg KOH/g

Isocyanate component PLIXXONAT® N111:			
Appearance	at 25°C	brown liquid	
Density	at 20°C	approx.	1.21 g/cm³
Viscosity	at 25°C	approx.	140 mPa*s
NCO content		approx.	29 %

Isocyanate component PLIXXONAT® N126:			
Appearance	at 25°C	brown liquid	
Density	at 20°C	approx.	1.21 g/cm³
Viscosity	at 25°C	approx.	170 mPa*s
NCO content		approx.	29 %

Diese Werte dienen der Information und sind nicht Teil der Produktspezifikation.

General Processing Instructions

PLIXXOPOL® RC 4880C012 should be homogenized before processing. The ingress of moisture has to be avoided.

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

Edition 2023-02-10 10:32

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Processing formulation BAYDUR® 110:

PLIXXOPOL® RC 4880C012	100 parts by weight
PLIXXONAT® N111	128 parts by weight
or	
PLIXXONAT® N126	128 parts by weight

Processing formulation BAYDUR® 110 FR-N (BK):

PLIXXOPOL® RC 4880C012	100 parts by weight
Exolith® AP 422 [1] Supplier Clariant	17 parts by weight
or	
FR Cros 484 [1], supplier Budenheim	17 parts by weight
Isopur black paste DN, ISL Chemie	4,5 - 8 parts by weight
PLIXXONAT® N126	128 parts by weight

Processing formulation BAYDUR® 110 FR-2N (NC):

PLIXXOPOL® RC 4880C012	100 parts by weight
Exolith® AP 422 [1] Supplier Clariant	17 parts by weight
or	
FR Cros 484 [1], Supplier Budenheim	17 parts by weight
PLIXXONAT® N111	128 parts by weight

Processing formulation BAYDUR® 110 FR-2N (BK):

PLIXXOPOL® RC 4880C012	100 parts by weight
Exolith® AP 422 [1] Supplier Clariant	17 parts by weight
or	
FR Cros 484 [1], Supplier Budenheim	17 parts by weight
Isopur black paste DN, ISL Chemie	4,5 - 8 parts by weight
PLIXXONAT® N111	128 parts by weight

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Processing formulation BAYDUR® 110 FR-6 (NC):

PLIXXOPOL® RC 4880C012	100 parts by weight
Exolith® AP 422 [1] Supplier Clariant	17 parts by weight
or	
FR Cros 484 [1], Supplier Budenheim	17 parts by weight
PLIXXONAT® N126	128 parts by weight

[1] 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.

We recommend the following temperature ranges for processing:

PLIXXOPOL® RC 4880C012	approx. 28 – 35 °C
PLIXXONAT® N111	approx. 28 – 35 °C
PLIXXONAT® N126	approx. 28 – 35 °C
Mould temperature	approx. 60 – 65 °C

Processing Details

Following reaction profile was determined with high pressure machine at a raw material temperature of 28°C. We recommend a gas load of 20- 30% at normal atmospheric pressure.

Gel time	9 s
Max. mould filling time	7 s

Samples 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 due to the risk of spontaneous combustion.They should be stored in a specially designated fire-protected area until they have cooled down completely.

When processing PLIXXOPOL® RC 4880C012 with different types of PLIXXONAT® care must be taken that all surface layers and/or cavities are free of moisture, grease, dust and other impurities which can impair reaction behavior.

Under all circumstances avoid contact of PLIXXOPOL® RC 4880C012 with non-ferrous metals, lubricating oils or grease in tanks, pumps and pipeworks. These substances can affect both the processing and the properties of the end product.

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Mould preparation

PLIXXOPOL® RC 4880C012 is preferably processed in metal moulds (steel or aluminum).

Use of a suitable release agent is recommended when processing PLIXXOPOL® RC 4880C012.

The required demould time is dependent on processing parameters. Complicated mould shapes and low raw material and/or mould temperatures may increase the required demould time.

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 PLIXXOPOL® RC 4880C012 with PLIXXONAT® N126.

Properties	BAYDUR 110	BAYDUR 110-FR-6	BAYDUR 110 FR-2N**	Einheit	Norm (in Anlehnung an)
Density	1050	1050	-	kg/m³	DIN EN ISO 845
Shore D hardness	75-77	75-77	-		
Tensile strength	50	50	-	MPa	DIN EN ISO 527
Elongation at break	14	12	-	%	DIN EN ISO 527
Flexural strength at 3.5 % strain in outer fibers	58	58	-	N/mm²	DIN EN ISO 178
Flexural modulus of elasticity	2000	2000	-	N/mm²	DIN EN ISO 178
Impact strength at 20°C	57	50	-	kJ/m²	DIN EN ISO 179
Heat deflection temperature Meth. B (0,45 MPa)	105	105	-	°C	DIN EN ISO 75-2
Coefficient of linear thermal expansion #	$100*10^{-6}$	$100*10^{-6}$	-	1/K	ASTM E 831
Water absorption #	< 0,6	<0,6	-	%	DIN 53495
Surface resistivity	3.5^{16}	-	9.7^{15}	Ω	ASTM D257
Volume resistivity	2.8^{13}	-	5.4^{13}	Ω	ASTM D257
Dielectric strength penetration resistance	-	-	21	kV/mm	ASTM D149

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.
** specimen at 3mm, # Individual measurements, mould temperature: 60 °C

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Storage, Handling & Preparation

The recommended storage temperature should be selected within 20 - 35°C. When stored in unopened original containers in dry areas, PLIXXOPOL® RC 4880C012 has a storage life of 6 months ex works.

PLIXXOPOL® RC 4880C012 must be thoroughly homogenized prior to processing or sampling. Do not expose storage containers to direct sunlight. Reclose opened containers tightly after each use. PLIXXOPOL® RC 4880C012 is hygroscopic. Avoid exposing PLIXXOPOL® RC 4880C012 to atmospheric humidity. Absorbed moisture can affect the reaction behaviour.

Other Remarks

The longitudinal shrinkage was measured on 1,000 mm x 500 mm test sheets at a density of 1,050 kg/m³.
The mould temperature 60 °C, demoulding time 120 seconds.
After storage for 24 hours in a standard atmosphere, the shrinkage was determined as followed:
(test method: DA-IT-41-03)

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

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.

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

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Additional requirements

UL 94V:

BAYDUR® 110 FR-N, BAYDUR® 110 FR-2N and BAYDUR® 110 FR-6 are the flame retardant versions of BAYDUR® 110 and contain ammonium polyphosphate.

Name	Density range (kg/m³)	Wallthickness (mm)	Fire rating
BAYDUR 110 FR-N (BK)	1000-1100	≥ 3.5	UL-94 V0
BAYDUR 110 FR-2N (NC)	1000-1100	≥ 3	UL-94 V0
BAYDUR 110 FR-2N (BK)	1000-1100	≥ 3.5	UL-94 V0
BAYDUR 110 FR-6 (NC)	1000-1100	≥ 3.1	UL-94 V0 und UL 0746C

The products are listed by Underwriters Laboratories Inc. under File no.: E514753.

DIN-4102:

Without the addition of flame retardants, at a density of approx. 1,050 kg/m³ and with wall thicknesses of 4 mm the system achieves the flammability rating B2 (DIN 4102).

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 the 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.

Safety Instructions

When working with liquid polyols, isocyanates and/or with additives, wear suitable safety equipment in accordance with the potential health hazards involved. In addition, avoid direct skin contact with freshly manufactured polyurethane products, eg when handling or processing directly after demoulding. For more detailed information, refer to the Safety Data Sheets of the components processed.

Labeling and REACH applications

This Technical 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 which will be revised and distributed. Information relating to the current classification and labelling, applications and processing methods and further data relevant to safety can be found in the currently valid Safety Data Sheet processed.

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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)*. [This product is also not designated for Food Contact, 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 PLIXXENT 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 PLIXXENT.

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