

BAYMER[®] SPRAY PP 2990

General Properties and Applications

The BAYMER[®] SPRAY PP 2990 is the polyol component that form, together with isocyanate DESMODUR[®] 44V20L, a polyurethane system that is used to form a rigid foam of low density and open cells to be applied as a spray foam.

The material is to be processed using an airless spray technique and is used as a thermal insulation material for buildings.

When correctly processed, rigid polyurethane foams based on polyol BAYMER[®] SPRAY PP 2990 can achieve the reaction to fire classification B3 according to the foam flammability test EN 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 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.

Sampling Avoid access of humidity.

Provisional Specification

| Property | Value | Unit of measurement | Method |
|--------------------|---------------|---------------------|---------------|
| Hydroxyl number | approx. 109 | mg KOH/g | R-50 |
| Water content | approx. 20,10 | % | R-3a |
| Viscosity at 25 °C | approx. 220 | mPa·s | PET-10-01 |
| Density @ 20 °C | approx. 1,079 | g/cm ³ | EN ISO 2811-2 |

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

Packaging Drums

Storage Recommended storage temperature: 15 - 25°C. Storage stability: 3 months, providing that the product is stored moisture protected, in closed drums.

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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

Recommended mixing ratio (volume parts):

| | |
|-----------------------------------|-----|
| BAYMER [®] SPRAY PP 2990 | 100 |
| DESMODUR [®] 44V20L | 100 |

Recommended temperature set

| | |
|-----------------------------------|----------|
| BAYMER [®] SPRAY PP 2990 | 60-65 °C |
| DESMODUR [®] 44V20L | 60-65 °C |

Manual foam test

(internal laboratory methods):

| | |
|--------------------|-----------------------|
| Start time: | 4 s |
| Gel time: | 8 s |
| Tack free time | 10 s |
| Free rise density: | 9,0 kg/m ³ |

Note: above mentioned values, are typical values measured under laboratory conditions.

Foam properties*

| | |
|-----------------------------------|-----------------------|
| Thermal conductivity (DIN 52612): | approx. 0.0353 W / mK |
| Open cell content (DIN ISO 4590): | 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.

* Foam obtained mixing BAYMER[®] SPRAY PP 2990 with the isocyanate DESMODUR[®] 44V20L using an appropriate machine.



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Foam processing / Safety advice

The BAYMER[®] SPRAY PP 2990 should be mixed with the component isocyanate, DESMODUR[®] 44V20L, using an appropriate machine in a mixing volumetric ratio 100:100. Set machine temperature at 60-65 °C. The foam density not only will depend on the existing conditions during the foaming but also on the spray method. The ambient temperature and humidity but also the type of substrate and its temperature are parameters of high importance in this application.

After applying the product it is important to pay attention to the machine cleaning in order to avoid a contamination in the next use of a different system with same machine.

The obtained foam has a high content of open cells. When applying the fresh foam can undergo a temperature increase. Under certain conditions, for example big volumes of foam, the foam can undergo autoignition.

Because of that, the applicator must assure that the applied volumes do not undergo foam autoignition.

This is a trial product. Further information, including amended or supplementary data on hazards associated with its use, may be compiled in the future. For this reason no assurances are given as to type conformity, processability, long-term performance characteristics or other production or application parameters. Therefore, the purchaser/user uses the product entirely at his own risk without having been given any warranty or guarantee and agrees that the supplier shall not be liable for any damages, of whatever nature, arising out of such use. Commercialization and continued supply of this material are not assured. Its supply may be discontinued at any time.

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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Declaration of Performance

Nr. 14315-2990-02-CPR-15

| | | |
|----|---|---|
| 1 | Unique identification code of the product type | Baymer® Spray PP 2990 – Desmodur® 44V20L <i>Designation code: PU EN 14315-1-CT4(20)-GT8(20)-TFT10(20)-FRC9(20)-CCC1-W1,55-MU4,45</i> |
| 2 | Intended use/es | Thermal insulating products for buildings – Insitu formed sprayed rigid polyurethane (PUR) and polyisocyanurate (PIR) foam products |
| 3 | Manufacturer | Covestro BV Korte Groningerweg 1a 9607 PS Foxhol Nederland |
| 4 | Authorised representative | Not relevant |
| 5 | System/s of AVCP | System 4 for reaction to fire System 3 for the rest of essential characteristics |
| 6a | Harmonised standard | EN 14315-1:2013 |
| | Notified body/ies | Wetenschappelijk en technisch centrum voor het bouwbedrijf (WTCB) Lombardstraat 42 1000 BRUSSEL België Notified Body nummer : 1136 |
| 6b | European Assessment Document European Technical Assessment Technical Assessment Body Notified body/ies | Not relevant |



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7 Declared performance/s **See table 1**

| Essential characteristics | Performance | Specifications |
|---|---|-------------------|
| Reaction to fire | F | EN 13501-1 |
| Water permeability | 1,55 kg/m ² <i>Short term water absorption by partial immersion</i> | EN 1609 Method B |
| Thermal resistance | See performance chart | EN 14315-1:2013 |
| Water vapour permeability | 4,45 <i>μ value</i> | EN 12086 method A |
| Compressive strength | NPD | EN 826:2013 |
| Durability of reaction to fire against ageing/degradation | Reaction to fire does not decrease with time | EN 14315-1:2013 |
| Durability of thermal resistance against ageing/degradation | See performance chart | EN 14315-1:2013 |
| Durability of compressive strength against ageing/degradation | NPD | EN 14315-1:2013 |
| Continuous glowing combustion | No harmonized test method available | EN 14315-1:2013 |

Table 1

8 Appropriate Technical Documentation and/or Specific Technical Documentation **See table 2**

| Specific characteristics | Performance | Specifications |
|--|-------------|---|
| French VOC Regulation French CMR components | A+ Pass | DEVL1101903D and DEVL1104875A; march and April 2011 |
| AgBB | Pass | AgBB feb-15, DIBt oct-10 |
| Belgian Regulation | Pass | C-2014/24239, may-15 |
| Indoor Air Comfort® | Pass | 5.3a, march-15 |
| EN 717-1 ^s | E1 | 2004 |
| BREEAM International | Compliant | GN22 |

Table 2



Declaration of Performance

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Performance chart

| Type of facing: None or diffusion open | | |
|---|--|-------------------------------|
| Thickness | Declared aged thermal conductivity (λ_D) | Thermal resistance level (RD) |
| mm | W/m·K | m ² ·K/W |
| 30 | 0,037 | 0,80 |
| 35 | 0,037 | 0,95 |
| 40 | 0,037 | 1,10 |
| 45 | 0,037 | 1,20 |
| 50 | 0,037 | 1,35 |
| 55 | 0,037 | 1,50 |
| 60 | 0,037 | 1,60 |
| 65 | 0,037 | 1,75 |
| 70 | 0,037 | 1,90 |
| 75 | 0,037 | 2,05 |
| 80 | 0,037 | 2,15 |
| 85 | 0,037 | 2,30 |
| 90 | 0,037 | 2,45 |
| 95 | 0,037 | 2,55 |
| 100 | 0,037 | 2,70 |
| 105 | 0,037 | 2,85 |
| 110 | 0,037 | 2,95 |
| 115 | 0,037 | 3,10 |
| 120 | 0,037 | 3,25 |
| 125 | 0,037 | 3,40 |
| 130 | 0,037 | 3,50 |
| 135 | 0,037 | 3,65 |
| 140 | 0,037 | 3,80 |
| 145 | 0,037 | 3,90 |
| 150 | 0,037 | 4,05 |
| 155 | 0,037 | 4,20 |
| 160 | 0,037 | 4,30 |
| 165 | 0,037 | 4,45 |
| 170 | 0,037 | 4,60 |
| 175 | 0,037 | 4,75 |
| 180 | 0,037 | 4,85 |
| 185 | 0,037 | 5,00 |
| 190 | 0,037 | 5,15 |
| 195 | 0,037 | 5,25 |
| 200 | 0,037 | 5,40 |

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above

Signed for and on behalf of the manufacturer by:

Name and function

Place and date of issue

Signature

Alix Uitham
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23-05-2016

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