

**VESTAGON® BF 1320****CROSSLINKING AGENT FOR POLYURETHANE POWDER COATINGS****GENERAL DESCRIPTION**

VESTAGON BF 1320 is a polyisocyanate adduct used in combination with hydroxy functional resins. Because of an internal blocking mechanism, the product retains its processing stability up to the splitting temperature of approximately 160 °C. The crosslinker is delivered in the form of fine granules.

**SPECIFICATION**

Property	Value	Unit	Test method
NCO content (blocked)	13.5 - 15.0	% wt	according to DIN EN ISO 11 909
NCO content (free)	≤ 0,3	% wt	DIN EN ISO 11 909
Glass transition temperature	65 - 82	°C	DSC
Colour index	≤ 600	-	DIN EN ISO 6271

**TYPICAL PROPERTIES**

Property	Value	Unit	Test method
NCO-equivalent	~ 295	g/Eq	-
Density	1.12	g/cm <sup>3</sup>	DIN EN ISO 1183
Bulk density	~ 570	kg/m <sup>3</sup>	DIN EN ISO 60
Melting range	105 - 125	°C	DIN EN ISO 3146
Flashpoint	230	°C	DIN EN ISO 2592
Ignition temperature	390	°C	DIN 51 794

**APPLICATION**

Numerous OH-terminated polyester and acrylics can be used to achieve weather-resistant decorative powder coatings with excellent physical properties. These polyols have a determining influence on the performance of the coating.

## FORMULATIONS

Crosslinker and polyester are used in equivalent amounts. Empirically determined “under indexing” (up to NCO:OH = 0.8 : 1) yields economical coatings which exhibit excellent physical properties meeting the required performance profile.

## EXAMPLES OF FORMULATION FOR BINDER COMBINATIONS

Crosslinking ratio (NCO:OH)	1 : 1		0.8 : 1		
VESTAGON BF 1320	14	21	12	19	parts
Polyol (OH number 30)	86	-	88	-	parts
Polyol (OH number 50)	-	79	-	81	parts

Up to 1 % by weight degasser is often used in pigmented powder coatings to minimize surface imperfections.

The use of a catalyst to accelerate the formation of urethane bonds is recommended. Bismuthcarboxylates (e. g. KOSMOS MB 16) has been proven to be a useful accelerator. The maximum suggested use level is 0.20 % by weight based on the total formulation.

## CURING

The curing temperature for PUR powder coatings based on VESTAGON BF 1320 lies above the splitting temperature of about 160 °C. A prerequisite for good physical properties of a coating is sufficient curing in the range of 170 °C, 20 minutes up to 210 °C, 5 minutes total oven time, according to the following standard procedures.

- Premixing: MTI-Mixer 2' - 500 rpm
- Application: Manual spray gun 80 kV; steel panels 0.8 mm
- Curing: Air-circulated Heraeus oven; coating thickness 55-75 µm

## EXTRUSION CONDITIONS

We recommend the extrusion conditions as follows:

### Buss PLK 46

Barrel temperatures: Zone 1 + 2 - 120 °C  
Screw temperature: cooled  
Screw speed: 160 r.p.m.

### Werner & Pfleiderer

Barrel temperatures: Zone 1+2 - 90 °C  
Screw speed: 250 r.p.m.

The extrusion temperature must be selected to ensure that a mass temperature of minimum 130 °C is maintained. Otherwise, inadequate dispersion may result in reduced gloss and mechanical properties of the coatings.

## APPLICATIONS FOR POLYURETHANE POWDER COATINGS

PUR powder coatings have been successfully used for many years in both exterior and interior applications such as:

- motor vehicle parts
- fittings
- bicycle frames
- fork lift trucks
- exterior furniture and lawn equipment
- agricultural machinery
- appliances
- telephone booths

## STORAGE AND PACKAGING

The product is delivered in flat bags, net weight 20 kg. If kept cool (0 – 40 °C) and dry in closed bags the product can be stored for at least 1 year in accordance to the specification. All opened bags should be carefully resealed immediately after use.

## SAFETY AND HANDLING

Please refer to our Safety Data Sheet.

Marl, January 26, 2022; This data sheet replaces all former issues.

VESTAGON® and KOSMOS® are registered trademarks of Evonik Industrie AG or one of its subsidiaries.

### Disclaimer

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

### EVONIK OPERATIONS GMBH

Business Line Crosslinkers  
Paul-Baumann-Str. 1  
45764 Marl  
Germany

[www.evonik.com/crosslinkers](http://www.evonik.com/crosslinkers)

For contact in your country, please visit: [www.evonik.com/crosslinkers-contact](http://www.evonik.com/crosslinkers-contact)

### EVONIK CORPORATION

Business Line Crosslinkers  
299 Jefferson Road,  
Parsippany, NJ 07054-0677  
USA

### EVONIK SPECIALTY CHEMICALS (SHANGHAI) CO., LTD.

Business Line Crosslinkers  
55, Chungong Road  
Xinzhuang Industry Park  
Shanghai, 201108  
China

