

# VESTAGON® BF 1540

## CROSSLINKING AGENT FOR POLYURETHANE POWDER COATINGS

### GENERAL DESCRIPTION

VESTAGON BF 1540 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 shaped flakes.

### SPECIFICATION

Property	Value	Unit	Test method
NCO content (total)	15.2 – 17.0	% wt	according to DIN EN ISO 11 909
NCO content (free)	≤ 1	% wt	DIN EN ISO 11 909
Glass transition temperature	78 - 90	°C	DSC
Colour index	≤ 600	Hazen	DIN EN ISO 6271

### TYPICAL PROPERTIES

Property	Value	Unit	Test method
NCO-equivalent	~ 275	g/Eq	-
Density	1.07	g/cm <sup>3</sup>	DIN EN ISO 1183
Bulk density	~ 570	kg/m <sup>3</sup>	DIN EN ISO 60
Melting range	93 - 112	°C	DIN EN ISO 3146
Flashpoint	> 150	°C	DIN EN ISO 2592
Ignition temperature	450	°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.

## FORMULATION

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 1540	13	20	11	17	parts
Polyol (OH number 30)	87	-	89	-	parts
Polyol (OH number 50)	-	80	-	83	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 1540 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, 25 minutes up to 210 °C, 8 minutes total oven time, according to the following standard procedures.

- Premixing: MTI-Mixer 2' - 500 rpm
- Extrusion: W&P ZSK 30 90 °C - 250 rpm
- Application: Manual spray gun 80 kV; steel panels 0.8 mm
- Curing: Air-circulated Heraeus oven; coating thickness 55-75 µm

## SPECIAL NOTICE

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 25 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.

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