

Automotive Coatings

EU SF 5.3.

Aqueous white two-pack PU topcoat,
based on Bayhydrol A 145 and Bayhydur 304

	Raw Material	Supplier	% by wt.
Comp. 1	1. Bayhydrol A 145, 46%	(1)	40.2
	2. Surfynol 104 BC	(2)	0.9
	3. Borchi® Gel PW 25	(3)	0.1
	4. Borchi® Gol LA 200, 10% in butyl glycol	(3)	1.0
	5. Borchi® Gen 0851	(3)	2.0
	6. Sachtleben R-KB-4	(4)	24.9
	<i>Total</i>		<i>69.1</i>
Comp. 2	7. Bayhydur 304	(1)	12.6
	8. Dipropylene glycol DME	(5)	3.1
	<i>Total</i>		<i>15.7</i>
	Water (for thinning)		15.2
	<i>Total</i>		<i>100.0</i>

Indications

Formulation of topcoat comp. 1
Place const.1. in the mixing vessel. Stir in const. 2.-5.
(10 min at 2000 rpm). Add gradually const.6. (at 2000 rpm).
Pre-disperse for 10 min at 2000 rpm.
Disperse in bead mill for 60 min (discontinuous < = 30°C)
Leave to deaerate for one day.

Application

Compressed-air spraying, nozzle 1.3 mm
1 cross spraying, 5 min intermediate deaeration
1 cross spraying, 10 min final deaeration

Remarks

Light stabilizer to improve weather stability (add before component 2)
1% Tinuvin 292 (solid / solid resin)

Data

NCO :OH - ratio	1.5
Ratio comp. 1:2	4.52 : 1
Flow time, DIN 53211-cup 4 mm, at 23 °C	25 s
Cosolvent	7.6 %
Density	1.3 kg/l
VOC	118 g/l
pH-value	8.1
Solids content on application	58 %

Technical properties

Viscosity increase: comp. (1 +2) DIN 4 (s) / pH-value	0 h	25 / 8.1
	3 h	31 / 7.2
Drying 30 min 60 °C T1 / T3 (DIN 53150)	(0-5)*	2
	h	1 / 7
Pendulum hardness (s) DIN EN ISO 1522 (Substrate: glass)	1d RT	73
	7d RT	121
	16h 50°C	121
Film thickness	µm	50
Gloss 20° angle / visually (DIN 67530 / ISO 2813)		78 / 1
Haze (DIN 67530 / ISO 2813)		39

* Evaluation: 0 = no visible changes
5 = test surface was strongly changed respectively destroyed

Chemical resistance:

Paint system on car body panel + conv. two-pack-PU primer (+ conv. basecoat for Formulation A and B)

H ₂ O (1h)	immediately	4
	1d RT	1
	7d RT	1
	16h 50°C	1
5' premium gas / MPA / Xylene	immediately	4 4 4
	1d RT	1 2 2
	7d RT	1 1 1
	16h 50°C	1 1 1
Alkaline/acid** cleaning agent (1 h)	7d RT	0 / 0

* Evaluation: 0 = no visible changes
5 = test surface was strongly changed respectively destroyed

** Alkaline = 2% sodium hydroxide solution
Acid = 2% sulfuric acid

Suppliers

- (1) Covestro (www.covestro.com)
- (2) Air Products (www.airproducts.com)
- (3) Milliken (www.milliken.com)
- (4) Sachtleben (www.sachtleben.de)
- (5) Clariant (www.clariant.com)

borchers.com/contact

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