

## Automotive Coatings

## EU SF 5.2.

Aqueous two-pack PU clear coat,  
based on Bayhydrol A 145 and Bayhydur 304

Component 1	Raw Material	Supplier	A	B	
			clearcoat	clearcoat	
			% by wt.	% by	
1.	Bayhydrol A 145, 46%	(1)	48.35	48.35	
2.	Surfynol 104 BC	(2)	1.10	1.10	
3.	<b>Borchi® Gel PW 25</b>	(3)	0.15	–	
4.	<b>Borchi® Gel O621</b>	(3)	–	0.12	
5.	<b>Borchi® Gol LA 200 / Borchi® Gol LA 50 (3/7), 10% in butyl glycol</b>	(3)	1.00	1.00	
	<i>Total</i>		50.60	50.60	
Component 2	6.	Bayhydur 304	(1)	15.10	15.10
	7.	Dipropylene glycol DME	(4)	3.80	3.80
		<i>Total</i>		18.90	18.90
	8.	Water (for thinning)		30.50	30.53
	<i>Total</i>		100.00	100.00	

### Indications

**Formulation of clearcoat, comp. 1:**

Place const. 1. in a dissolver. Add in const. 2.-4. under stirring (10 min at 2000 rpm). 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)

Clearcoat: 1% Tinuvin 292 (solid / solid resin)  
2% Tinuvin 1130 (solid / solid resin)

Data	A and B	
	clearcoat	
NCO :OH - ratio	1.5	
Ratio comp. 1:2	2.7 : 1	
Flow time, DIN 53211-cup 4 mm, at 23 °C	25 s	
Cosolvent	9.2 %	
Density	1.0 kg/l	
VOC	194 g/l	
pH-value	7.7	
Solids content on application	38 %	

Technical properties	A and B clearcoat	
	Viscosity increase: comp. (1 +2) DIN 4 (s) / pH-value	0 h
	3 h	34 / 7.2
Drying 30 min 60 °C	(0-5)*	2
T1 / T3 (DIN 53150)	h	1 / > 7
Pendulum hardness (s) DIN EN ISO 1522 (Substrate: glass)	1d RT	123
	7d RT	174
	16h 50°C	169
Film thickness	µm	50
Gloss 20° angle / visually (DIN 67530 / ISO 2813)		84 / 1
Haze (DIN 67530 / ISO 2813)		24

\* 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)

	A and B clearcoat	
	H <sub>2</sub> O (1h)	immediately
	1d RT	2
	7d RT	1
	16h 50°C	1
5' premium gas / MPA / Xylene	immediately	4 3 4
	1d RT	2 3 3
	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](http://www.covestro.com))
- (2) Air Products ([www.airproducts.com](http://www.airproducts.com))
- (3) Borchers ([www.borchers.com](http://www.borchers.com))
- (4) Clariant ([www.clariant.com](http://www.clariant.com))

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