

DAOTAN® TW 7065/36WA  
Our new, economy grade PUD



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## CHARACTERISTICS

DAOTAN TW 7065 is a shear stable, solvent-free, self-crosslinking acrylated polyurethane dispersion providing quick drying and good wetting properties. Cured films are clear - transparent with good chemical- and abrasion resistance.

Product data		
Dynamic viscosity	(DIN EN 3219;100 1/s, 23°C)	10 – 350 mPa.s
pH Value	(DIN ISO 976; 10% in water)	7.5 - 8.8
Non-volatile matter	(DIN en ISO 3251; 1hr, 125°C, 1g)	35 - 37 %
Appearance		Opaque
Colour		Colorless to yellowish

# DAOTAN® TW 7065/36WA – KEY FEATURES



DAOTAN TW 7065 provides:

- Good appearance and bright metallic effects in WB Basecoats
- Excellent mechanical properties such as stone chip resistance
- Good wet adhesion
- Good outdoor durability
- Excellent adhesion to plastics like ABS, PC, PP (flamed) and PVC
- Attractive price/performance balance

The main application area's of DAOTAN TW 7065 are:

- Waterborne Automotive OEM and VR basecoats
- Waterborne Automotive OEM plastic primers

# WB SILVER BASECOAT FORMULATION AND APPLICATION (CR 249)

Part I:	30.10	<b>DAOTAN® TW 7065/36WA</b>	
	1.30	<b>CYMEL® 327</b>	
	1.50	Dimethyl ethanolamine / 10% solution in de- ionized Water	
	10.20	De- ionized Water	
	7.20	Rheovis AS 1130 / 10% solution *	(rheology modifier)
	18.90	De- ionized Water	
Part II:	7.80	Stapa IL Hydrolan 2154	
	0.50	<b>ADDITOL® XL 250</b>	(wetting- and dispersing agent)
	5.70	Butyl glycol	
Part III:	6.30	Ultralube E 500 V	
Part IV:	1.60	Iso- butanol	
Part V:	0.70	Dimethyl ethanolamine / 10% solution in de- ionized Water	
	8.20	De- ionized Water	
Total	100.00		

\*Rheovis AS 1130 / 10% solution:

	64.50	De- ionized Water	
	2.50	Dimethyl ethanolamine / 10% solution in de- ionized Water	
	33.00	Rheovis AS 1130	
Total	100.00		

## Production Procedure:

Blend components of Part I in the order mentioned and homogenize well.  
 Prepare pre-mix Part II: Blend Aluminum paste with Additol XL 250 and butyl glycol.  
 Stir for 30 minutes. Do not use a dissolver!  
 Add pre- mixed Part II to Part I and homogenize thoroughly.  
 Add Part III stir 5 minutes, add Part IV and homogenize for another 10 minutes.  
 Let the paint rest for approx. 12 hours.  
 Adjust pH value and viscosity with components of Part V.

## Paint properties :

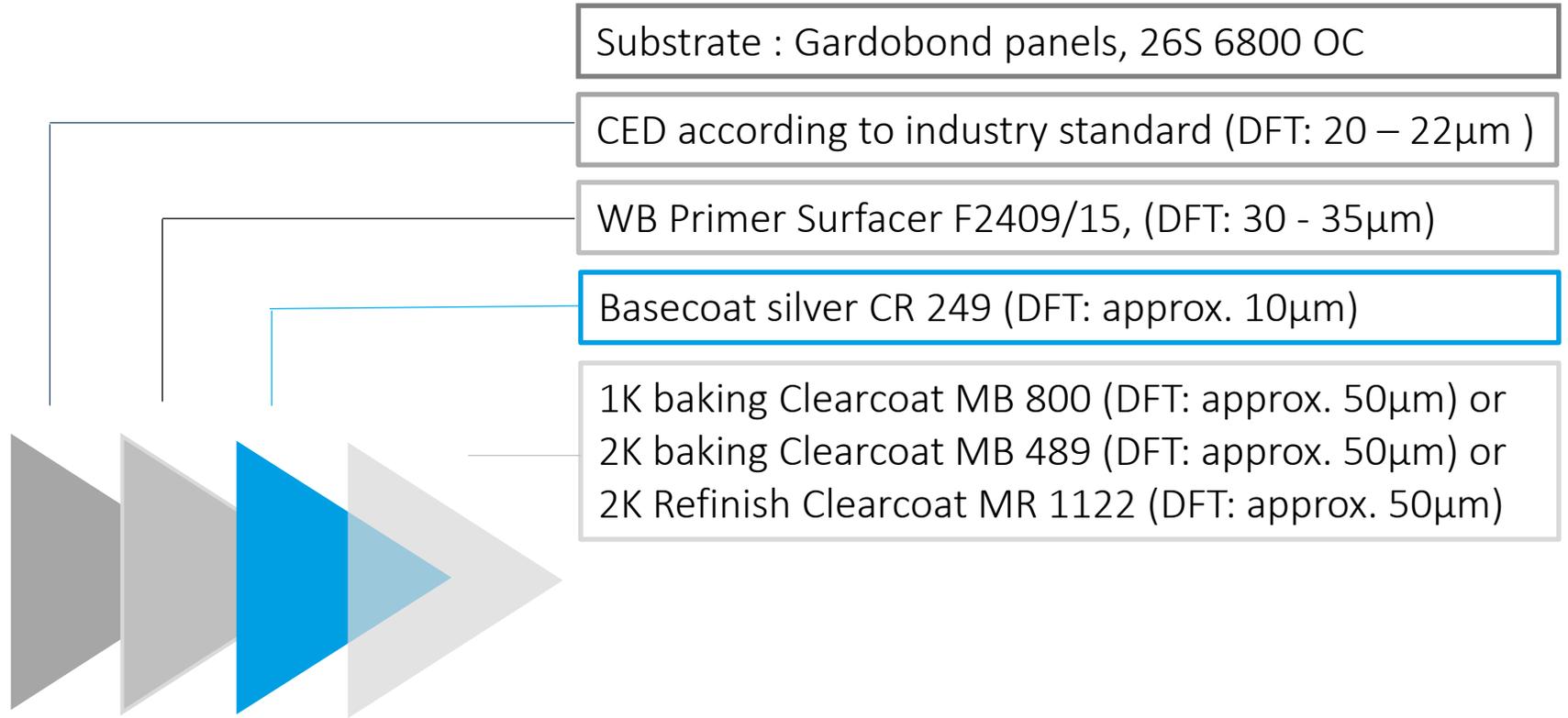
Paint solids:	approx. 19%
Paint viscosity DIN EN ISO 3219/23°C, shear rate 25s <sup>-1</sup> :	approx. 400 mPa.s
Pigment : Binder (on solids):	approx. 0.4 : 1
pH - Value DIN ISO 976, 23°C:	approx. 8.1

## Drying conditions:

5 min Flash off + 8 min 60 - 80°C.  
 Overcoat with a 1K or 2K clearcoat, solvent- as well as waterborne, is possible

For the Test setup using the 2K Refinish Clearcoat (MR 1122) the Basecoat was formulated without crosslinker CYMEL 327

# TEST SETUP



Substrate : Gardobond panels, 26S 6800 OC

CED according to industry standard (DFT: 20 – 22µm )

WB Primer Surfacer F2409/15, (DFT: 30 - 35µm)

Basecoat silver CR 249 (DFT: approx. 10µm)

1K baking Clearcoat MB 800 (DFT: approx. 50µm) or  
2K baking Clearcoat MB 489 (DFT: approx. 50µm) or  
2K Refinish Clearcoat MR 1122 (DFT: approx. 50µm)

# TEST RESULTS WITH 1K BAKING CLEARCOAT (MB 800, 20min/145°C)

Property	Basecoat DAOTAN® TW 7065	Basecoat DAOTAN TW 6464
<b>96 hours humidity testing (QCT)</b>		
Blisters	5(S1)	5(S1)
Whitening	Yes	Yes
Gloss; before / after	98 / 78	96 / 76
Adhesion; before / after	0 / 2	1 / 2
Hardness; before / after	113 / 59	127 / 47
Erichsen; cupping before / after	3.9 / 4.7	3.8 / 4.9
Flop; before / after	17.1 / 15.6	16.3 / 16.0
<b>PV 1200 according to Volkswagen (10 cycles / 5 days)</b>		
Stone chip 2x500g, 2bar; before	1.5	1.5
Stone chip 2x500g, 2bar; after	2.0	2.0

# TEST RESULTS WITH 2K BAKING CLEARCOAT (MB 489, 20min/145°C)

Property	Basecoat DAOTAN® TW 7065	Basecoat DAOTAN TW 6464
<b>96 hours humidity testing (QCT)</b>		
Blisters	0	0
Whitening	Yes	Yes
Gloss; before / after	97 / 95	96 / 94
Adhesion; before / after	0 / 0	0 / 0
Hardness; before / after	147 / 59	152 / 50
Erichsen cupping; before / after	6.2 / 4.5	6.3 / 7.5
Flop; before / after	6.3 / 15.7	16.6 / 16.2
<b>PV 1200 according to Volkswagen (10 cycles / 5 days)</b>		
Stone chip 2x500g, 2bar; before	3.0	3.0
Stone chip 2x500g, 2bar; after	4.0	4.0

# TEST RESULTS WITH 2K REFINISH CLEARCOAT (MR 1122, 30min/80°C)

Property	Basecoat DAOTAN® TW 7065	Basecoat DAOTAN TW 6464
<b>240 hours humidity testing (40°C, 100% RH)</b>		
Blisters	5(S2)	5(S2)
Whitening	Yes	Yes
Gloss; before / after	97 / 75	96 / 62
Adhesion; before / after	0 / 5	0 / 5
Hardness; before / after	94 / 74	116 / 40
Flop; before / after	16.0 / 14.7	16.4 / 15.1
<b>PV 1200 according to Volkswagen (10 cycles / 5 days)</b>		
Stone chip 2x500g, 2bar; before	4.5	4.0
Stone chip 2x500g, 2bar; after	4.0	3.5

# DAOTAN® TW 7065/36WA - Thermal Yellowing



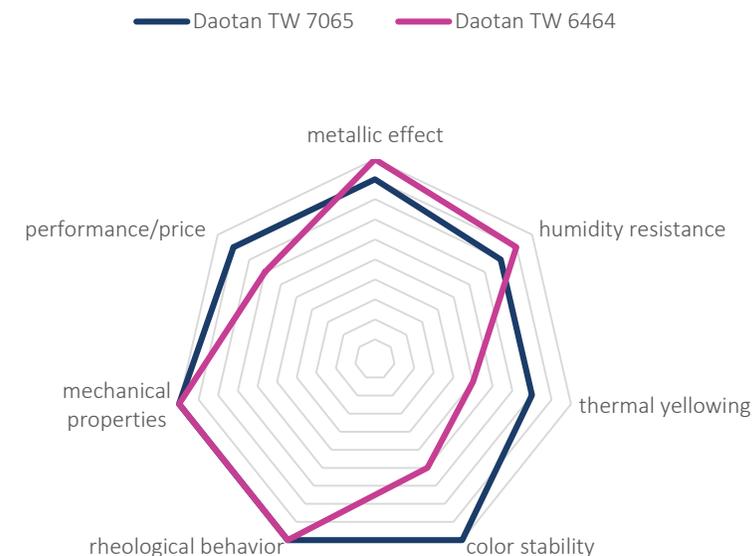
Thermal yellowing (delta b) after	DAOTAN TW 7065	DAOTAN TW 6464
10 min/80°C + 20 min/180°C	2.76	5.42
10 min/80°C + 20 min/200°C	6.77	18.41
Test set-up: draw down of resin (as supplied) with 100µm on a white tile, drying/stoving conditions as mentioned, yellowing according to DIN EN ISO 11664-4		

# DAOTAN® TW 7065/36WA

DAOTAN TW 7065/36WA is a polyester-acrylic hybrid PUD for automotive OEM and VR application.

DAOTAN TW 7065 provides compared to our standard polyurethane basecoat dispersions such as DAOTAN TW 6464:

- Improved color stability
- Less thermal yellowing
- Excellent mechanical properties
- Good metallic appearance
- Good humidity resistance
- Attractive price/performance balance



# CONTACT



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*The Coating Resins Company*