



Industrial coating

**Anti-corrosion coating, water-based, white, Covestro-Base
single-layer system, direct-to-metal (DTM)
reducing titanium dioxide, without active pigments**

Basis	Acrylate	Comparison		
		with anti-corrosion pigment	without	TP 2022060
		Talc	Barium-sulfate ppt	
	L 00059.1	[17]	[16]	[21]
Pigment preparation	-- part 1 --			
	NeoCryl XK-85 (1)	18.55	18.55	18.55
	-- part 2 --			
	Demineralized water	2.52	2.52	2.52
	AMP-95 (2)	0.20	0.20	0.20
	Acrysol RM-8WE (1:6 in H ₂ O) (3)	0.54	0.54	0.54
	-- part 3 --			
	Disperbyk-190 BF (4)	1.05	1.05	1.05
	Byk-024 (4)	0.13	0.13	0.13
	Surfynol 104 E (5)	0.33	0.33	0.33
	-- part 4 --			
	Kronos 2310 (6)	9.80	9.80	9.80
	Nubirox 302 (7)	2.79	2.79	
	Talc	7.23		
Barium sulfate ppt		10.78		
TP 2022060 (8)			8.85	
Let down	-- part 5 --			
	NeoCryl XK-85 (1)	49.53	49.53	49.53
	-- part 6 --			
	Dowanol DPnB (3)	3.32	3.32	3.32
	Nalzin FA 179 (9)	0.33	0.33	0.33
Acrysol RM-8WE (1:6 in H ₂ O) (3)	1.11	1.11	1.11	
Total parts by weight		97.43	100.98	96.26

Benefits with TP 2022060 (Base Sillitin Z 89 with amino function hydrophobic)

- partiell replacement of titanium dioxide
- improved dry and wet adhesion to the substrate
- increased barrier protection in the non-scribed area
- inhibition of corrosion progression / rusting at coating defects
- higher performance even without the use of anti-corrosion pigment



Mixing

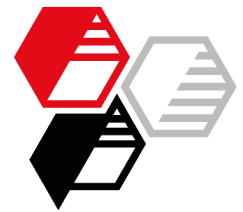
- Pigment preparation
- submission of raw materials of part 1
 - premix raw materials of part 2 and add to part 1
 - successively add the raw materials of part 3 and part 4
 - disperse for 15 min by dissolver with toothed disc at high shear rate under cooling
- Let down
- submission of raw materials of part 5 und adding of pigment preparation
 - successively add the raw materials from part 6 for completion

Application

- undiluted with doctor blade, single layer
- drying: 14 days @ standard climate 23/50
- dry film thickness: $\approx 50 \mu\text{m}$
- optical tests: contrast cardboard Byko-Chart Type 2824
- mechanical / corrosion tests: cold-rolled steel Q-Panel Type R-48

Suppliers

- (1) Covestro
- (2) Advancion
- (3) Dow Chemical Company (Rohm & Haas)
- (4) Byk Chemie
- (5) Evonik Industries
- (6) Kronos International
- (7) Vibrantz Technologies
- (8) HOFFMANN MINERAL
- (9) Elementis



Comparison		with anti-corrosion pigment	without
		Talc	Barium-sulfate ppt
			TP 2022066
L00059.1		[17]	[16]
			[21]

Technical Data

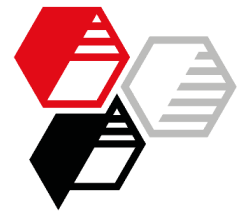
Solids content m/m	%	49.4	51.2	48.8
Solids content v/v	%	38.9	38.9	38.9
PVC	%	19.1	19.1	19.1

Properties

Sedimentation stability		28 days @ 40 °C	good	good	good
Dyn. viscosity	23 °C	0.1 s ⁻¹ Pa-s	2.67	2.07	2.05
		1000 s ⁻¹ Pa-s	0.27	0.16	0.16
Pendulum hardness König		s	36	35	31
Cross-cut test		1 mm, after tape tear-off	0-1	1-2	1
Gloss	60°	GU	18	50	69
		20°	GU	3	12
Color d/8°	L*		96.7	96.9	96.3
		a*	-0.7	-0.6	-0.6
		b*	1.0	1.0	2.4
Hiding power		%	98.3	98.1	98.2

Salt spray test, DIN EN ISO 9227 NSS, 650 h
 Rating according to DIN EN ISO 4628 part 2-5 and 8
 Cross-cut test 1 mm, after tape tear-off

regeneration	0 h	3	5	0-1
	24 h	3	3-4	1
non-scribed area				
Degree of blistering		0 (S0)	0 (S0)	0 (S0)
Degree of rusting		Ri 4	Ri 0	Ri 0
Degree of cracking		all: 0 (S0)		
Degree of flaking		all: 0 (S0)		
scribe: Sikkens	1 mm			
	<i>stripped</i>			
Delamination	mm	all: none		
Rust creep	mm	1.2	2.3	0.8

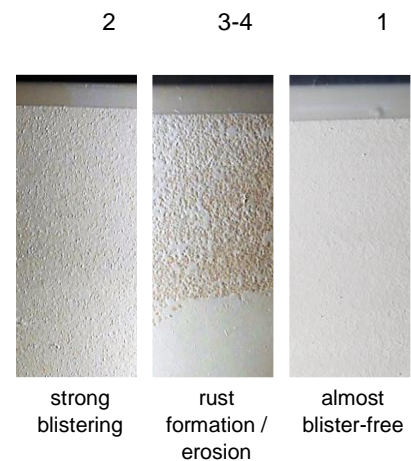


	<i>Comparison</i>		
	with anti-corrosion pigment		without
	Talc	Barium-sulfate ppt	TP 2022060
L00059.1	[17]	[16]	[21]

Humidity test, DIN EN ISO 6270-2 CH, 650 h

Cross-cut test 1 mm, regeneration 24 h, after tape tear-off

Image section 2 x 5 cm sheet metal edge at top



Under-film corrosion

Image section 10 x 15 cm stripped



More information on this topic:

[DTM: Neuburg Siliceous Earth in water-based corrosion protection - acrylate single-layer white, Covestro base](#)

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