

TITANCARE® PMA / B

TECHNICAL DATA SHEET (D1.0) PRODUCT INFORMATION

ADVANCED NANO COMPOSITE MATERIAL APPLICATION



General Description

- green material, 100% non-toxic and environmentally-friendly
- easy to use, long lasting 24/7 basic functionality over years
- 2 component material
- tested by worldwide renowned authorities such as MICROBAC®, SGS and others

Features

- anti bacterial functionality
- perfect anti corrosion material
- highest hardness
- perfect adhesion and durability on any material like, metals like alloy, copper and stainless steel, medical equipment, architectural metal-based products

Applications

as a protective and preventive measure in areas of health and medical

- food processing industries
- gastronomy and hotels
- merchandising and retail
- offices and public spaces
- OEM applications refinery and tank facilities, industrial plant builders, medical material

Storage

Please store under room temperature 15-25 °C, humidity >45% with good ventilation and avoid exposure to direct sunshine. Keep container sealed after opening. Shelf-life 6 month from date of manufacture.

Specification

Item	Unit	Spec.	
		TitanCare® PMA	TitanCare® PMB
Appearance	-	Milky white	Transparent Yellowish liquid
Composition	-	Acrylic Resin	Isocyanate
Solid content	wt%	24% ± 2	40% ± 2
Viscosity	25 °C mPa s	<100	<1000
Density	25 °C	0.96	1.06
Blending ratio	wt%	7:1	

Reference – Function of Thin Film

Item	Test Method	Substrate	Result
Anti-bacterial	JIS Z 2801	Plastic, Metal	>99%
Cross cut	CNS10757		5B
Cross cut after dipping in boiled water	Dip in water(100 °C) / 30min		5B
Anti-wiping (with water)	1)		500 times
Anti-wiping (with alcohol)	2)		500 times
Anti-Acid	CNS10757	Metal	24 hours ³⁾
Anti-Alkali	CNS10757		24 hours ³⁾
Anti-Salt spray	CNS11607		72 hours ⁴⁾
Hardness	ASTM D3363-00		1H more ⁵⁾
Non-yellowing test	ASTM G 154		ΔE<1

Test Method: Spray 150g/m² on the substrate to make a 15um thin film, then bake 135 °C 30mins for metal (tinplate)

- 1) Test Method: Load 500g weight on the substrate and wipe by non-dust cloth with water.
No wrinkle, scratch, peeling allowed on the surface.
- 2) Test Method: Load 500g weight on the substrate and wipe by non-dust cloth with alcohol.
No wrinkle, scratch, peeling allowed on the surface.
- 3) 5% H₂SO₄ [acid pH=0.6] or 5% NaOH [alkali pH=13.6] dipping 24 hours.
No wrinkle, peeling allowed on the surface.
- 4) Test environment 50±5g/L NaCl solution spray: 1.0~2.0 ml/ 80cm² / hour
- 5) This test is verified by QUV machine. The total test duration is 96 hours. Using the UV-A, before and after coating LAB value Δ E value calculated 340nm is irradiated

Comparison of Anti-acid & Anti-alkali

Item	Tinplate ¹⁾	Galvanized Steel (hot dip coating) ₁₎	Stainless Steel 430 ¹⁾	Tinplate	Stainless Steel 430	Galvanized Steel (Electric coating)	Galvanized Steel (Hot dip coating)
5% H ₂ SO ₄	○ [23 days]	○ [31 days]	○ [31 days]	X [2 hrs]	○ [13 days]	X [2 hrs]	○ [3 days]
5% NaOH	○ [27 days]	○ [38 days]	○ [21 days]	X [2 hrs]	○ [13 days]	X [2 hrs]	○ [3 days]

¹⁾ Test Method: Spray 150g/m² of TitanCare® PMA/B to make a 15um thin film then bake 135 °C 30mins

Durability

	Water	Alcohol	Acetone	Benzene
Metal	○ [500 times]	○ [500 times]	X	X

Spray TitanCare® PMA/B 150g/ m² on the substrate to make a 15um thin film, bake 135 °C 30mins for metal (tinplate) , using 500g weight as a standard test load and wipe by non-dust cloth with the solution (0.5ml).

Effect of Different Coating Amounts

Item	50g/m ²	75g/m ²	100g/m ²	150g/m ²
Anti-bacteria	99%	99%	99%	99%
Cross cut	○	○	○	○
Cross cut after boiled water	○	○	○	○
Anti-wiping (with water)	○	○	○	○
Anti-wiping (with alcohol)	X	○	○	○
Anti-acid	X	○	○	○
Anti-alkali	○	○	○	○
Anti-salt spray	N/A	○ (120hrs)	○ (120hrs)	○ (120hrs)
Hardness	1H more	1H more	1H more	1H more
Film thickness	5um ±1	8um ±1	10um ±1	15um ±1

Spray TitanCare® PMA/B on the substrate and bake 135 °C 30mins for tinplate

Salt spray testing (SST) is an accelerated corrosion test that one day of exposure in the salt spray cabinet is equivalent to a year of normal environmental exposure or 120 days of coastal environmental exposure.

Effects of Curing Temperature and Time

Item	Room Temp. 24 hours	Room Temp. 168 hours	135 °C 30 minutes
	Metal	Metal	Metal
Anti-bacteria	99%	99%	99%
Cross cut	○	○	○
Cross cut after boiled water	X	○	○
Anti-wiping (with water)	○	○	○
Anti-wiping (with alcohol)	X	○	○
Anti-acid	X	○	○
Anti-Alkali	X	○	○
Anti-salt spray	N/A	○ (120hrs)	○ (120hrs)
Hardness	1H	1H more	1H more

Spray TitanCare® PMA/B (150g/ m2) on the substrate

Salt spray testing (SST) is an accelerated corrosion test that one day of exposure in the salt spray cabinet is equivalent to a year of normal environmental exposure or 120 days of coastal environmental exposure

Normal temperature is 25°C

Process Condition

1. Method

a) Spraying: Spray gun, diameter 0.3~2mm, air pressure 0.3~1kg under room temperature 10~40 °C

2. Process

a) Clean the surface of the substrate

b) Spray

c) Curing condition: 1. Room Temp. 168 hours

2. 135 °C 30 minutes

The condition above is for reference

Packing

3kg	A	B
Package	3kg Cans	500g Cans
capacity	2.625kg	0.375kg
20kg	A	B
Package	20kg Cans	3kg Cans
capacity	17.5kg	2.5kg

Safety & Notice

1. In order to ensure product reliability, please apply under clean environment.
2. Keep containers sealed after opening and store under recommended environment.
3. Minimum Storage temperature = 5°C, ensure good ventilation.
4. Precipitation and slight color change to light yellow is normal.
5. Please refer to Safety Data Sheet (SDS) for more details.

Product Stewardship

Scutum Nano Solutions GmbH encourages its customers to ensure that our products are not used in ways for which they are not intended or tested. Our personnel assist you to answer your questions and to provide reasonable technical support. Scutum Nano Solutions GmbH safety data sheets should be considered prior to use.

Disposal

Disposal according to official regulation, not contaminated and completely emptied packaging can be recycled.

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