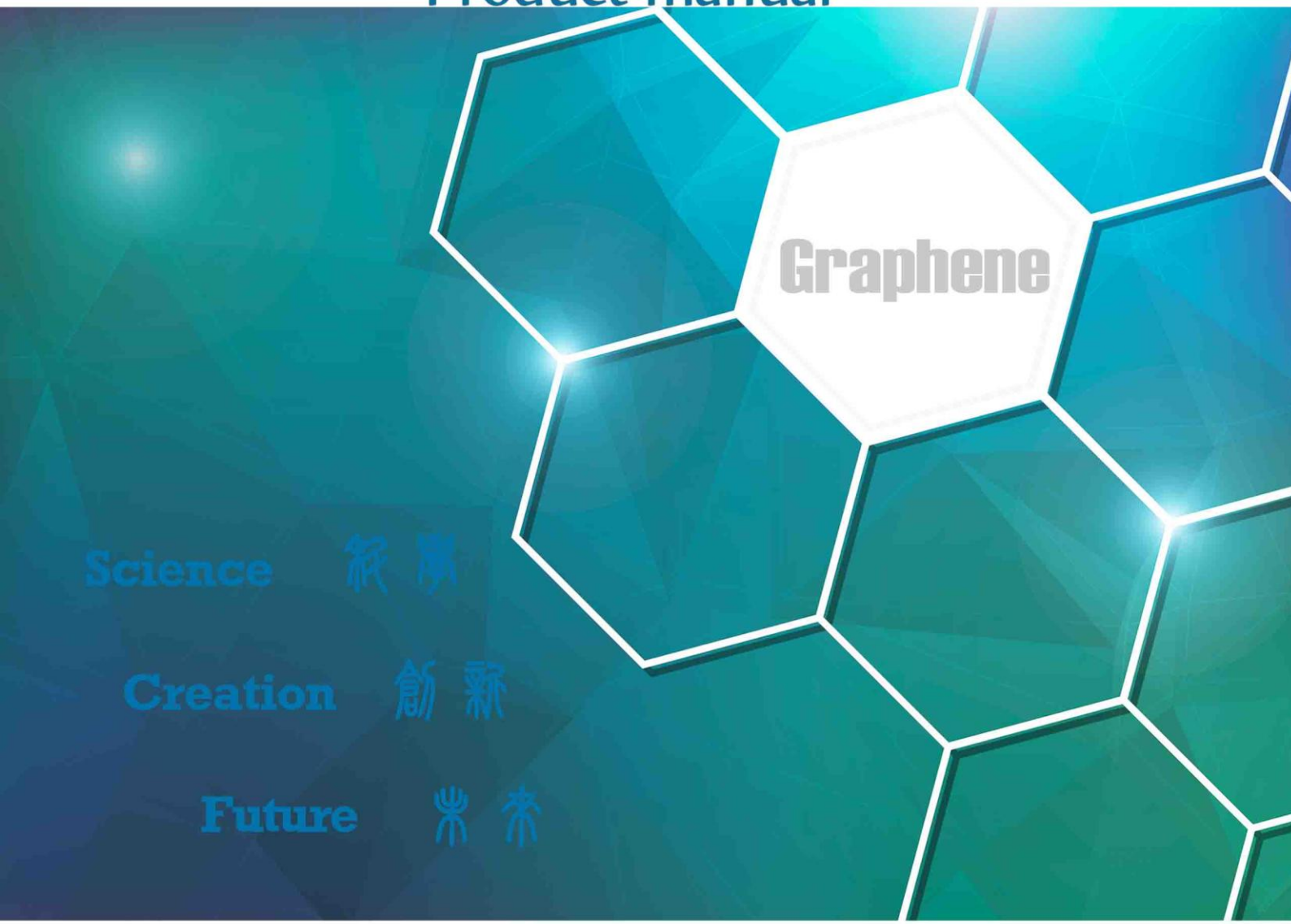
Nanotech

Graphene

Graphene Modified Industrial Heavy Anticorrosion Coatings

Product manual



Qingdao DT Nanotech Co., Ltd.

Add: The Graphite New Material Industrial Park, Nanshu Town, Laixi City, Qingdao, Shandong Province, China

Tel: 0532-83433388 http: www.dtnano.com

Graphene Modified Industrial Heavy Anticorrosion Coatings

【Product Introduction】

This product is a graphene modified industrial anticorrosive heavy-duty coating, which solidified at room temperature. It is made up as a set of two paints: the interior paint (ZTCR-PD4711B) and the external paint (ZTMR-TT4827C). It can be used as a combined set with our primer paint (ZTMR-TT4810B), and the intermediate paint (ZTMR-TT4827C), which will form a much better anticorrosive protection. With addition of graphene to the paints, the anticorrosion property of these products have been greatly improved. It is a new type, solvent-free, and low-viscosity heavy-duty anticorrosive coating.

【Product Models】

ZTCR-PD4711B（(Internal paint）
ZTCR-PD4728S（External paint）

【Applications】

1. ZTCR-PD4711B is recommended for the anticorrosion protection in the fields of petroleum, chemical, energy and transportation.

2. ZTCR-PD4728S is recommended as the anticorrosive protection coatings for parts exposed in harsh conditions such as marine engineering.

3.For harsh and corrosive environments, it is recommended to use a composite coating of primer, intermediate and finishing coating, for a long and effective protection.

【Physical Properties】

Testing Items	Technical indicators	
	ZTCR-PD4711B Internal paint	ZTCR-PD4728S External paint
Color and Appearance	Specified color, compound color standard, smooth, no defect	
Solidity（%） ≥	95	
VOC content，g/L ≥	5	
Viscosity (-4), s (group A) ≥	80	
drying time（Table dry），23℃/h	2	
Adhesion（Circle method），level ≤	1	

Impact resistance，kg cm	50
Flexibility，mm	1
Oil resistance *（Soaking mineral oil），30d	No change in the paint film --
Acid resistance *，30%H_2SO_4.30d	No change in the paint film --
Alkali resistance *，30%NaOH.30d	No change in the paint film --
Saltwater resistance *， 5%NaCL solution，30d	No change in the paint film --
Marine climate exposure test *，12 months	-- Perfect film，Rust≤1 level
Artificial accelerated aging test *，5000h	-- Powder≤1 level ，change colour≤2 level
Temperature resistant and damp heat salt spray test *，5000h	Perfect film，Mild discoloration，Rust≤1 level

Note: the "*" logo for the composite coating detection project.

【Coating Thickness and Coverage】

（Single layer coating）	Internal paint	External paint
Dry coat (μm)	100	100
Wet coat (μm)	90	85
Theoretical Coverage (m^2/L)	4	5

【Coating Design】

For general protection, ZTMR-TT4810B primer, combined with ZTCR-PD4711B or ZTCR-PD4728S finishing coat, is recommended. A set of "one primer + two finishing" or "two primer + two finishing" combination in coating, is also recommended. Thickness of the Dry film should be more than 150μm.

For a heavy duty protection, It is recommended to use primer（ZTMR-TT4810B）, intermediate paint（ZTMR-TT4827C） and supporting finish（ZTCR-PD4711B or ZTCR-PD4728S）. A design of "two primer + two intermediate + two finishing" coating is suggested.

【Operation Conditions and Instructions】

The temperature of the base material should not be lower than 5℃, and at least 3℃ higher than the local dew point temperature. Measurement of the humidity and temperature should be taken near the bottom of the operation point.

When the product is coated, the formal coating must be fully solidified before the next coating, otherwise it may affect the adhesion of the next coating.

【Operation Parameters】

Ratio (quality): group A: group B = 4~5:1. Note: the ratio may be changed, which is based on the ratio of the label on the factory packing or the factory inspection report.

Mixing: before use, the A component (paint material) and B component (curing agent) are mixed evenly according to the given ratio. After 15 minutes of waiting, it then can be used.

Diluent: supporting active diluent is provided with the product.

【Method of Operation】

The paint should be diluted with dilute, according to the dilution ratio instructed, and then is stirred evenly. After mixing, the paint needs to go through the 200-mesh screen cloth before use.

For coating: spraying with high-pressure airless spraying equipment. It is recommend to do a small-area-pre-coating test, to make sure the result is qualified with the specified dry film thickness (a thickness of more than 250μm). Then evaluate all aspects of the coating's quality, and make sure it is qualified before the construction on a large area.

Dilution: use special diluent to adjust the viscosity of the paint before use.

The amount of diluent to use: paint : thinner =10:1~1.5 (mass ratio). The ratio is the same for bottom, middle and surface paintings.

【Drying Time】

Factors such as ventilation condition, ambient temperature, film thickness and coating path will affect the coating drying time accordingly. The typical data listed in the following table are based on the following conditions:

* Good ventilation (outdoor or air natural circulation)
* typical coating thickness
* the single layer wet film thickness on the steel should be at the ambient temperature of >80μm
*temperature >10 C and the relative humidity of <60%

Surface drying time：25℃，1h
Hard drying time：25℃，24h
Actual drying time：25℃，7d

Note: 1. The degree of coating cure can be tested by butanone MEK detection (ASTMD 4752-87) method.

2. Before construction, zinc salt and other pollutants should be removed from the base surface.

【Storage and Transportation】

The storage environment of this product should be kept dry, cool and ventilated, and avoids sources of heat and fire. The packing container should be kept closed.

The valid storage period is one year. If product's storage time exceeds the storage period, paints should be re-inspected to confirm whether it can be used.

Caution must be taken during handling. Stir well before use.

Internal lacquer

6 970471 494711

External lacquer

6 970471 494728