



SUPER ANTI RUST COATING

**ZHEJIANG TIANFENG
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ABOUT US 关于我们

ZHEJIANG TIANFENG NEW MATERIAL TECHNOLOGY CO. LTD. founded in 2018, is one leading High tech enterprise specialized in anti-rust industry, integrating R&D, Production, Marketing and Sales together, located in Ningbo, zhejiang, china and production base in Yantai, Shandong with registered capital of 15 million RMB.

“ECO-COAT” anti rust series products have been widely used to all kinds of standard parts, fasteners, screws, nuts, chains, springs, spring washers, auto parts, machine tool parts, hydraulic parts, engineering machinery parts, railway equipment and other steel parts or surfaces from different industry.

浙江天奉新材料科技有限公司成立于2018年,是一家集研发、生产、销售为一体的专业金属防锈、防腐蚀产品的高新技术企业,位于中国浙江宁波,生产基地位于山东烟台,注册资本1,500万元人民币。主营品牌“爱科特”防锈产品广泛应用于标准件、紧固件、螺丝、螺母、链条、弹簧、弹垫、汽车配件、机床零件、液压件、工程机械零件、铁路器材等各种钢铁零部件。

Capabilities and Quality Assurance 公司实力和品质

1. 10+ years experiences in Surface Treatment Industry.
2. State of art manufacturing and inspection facilities and equipments.
3. Scientific and strict management, production and perfect quality control.
4. Upholding "Quality First, Customer First".
5. Leading Anti-rust/corrosion expert and solution provider.
6. Favored Brand by Volkswagen, BMW, Honda, Toyota...
7. Full Green Industrial Chain-food grade raw material.

- 1、拥有10年以上表面处理行业经验
- 2、拥有先进的生产和检测设施及设备
- 3、科学严谨的经营管理理念、完善的生产质量管控体系
- 4、坚持“质量第一、顾客至上”
- 5、行业领先防锈/腐蚀解决方案专家和供应商
- 6、知名品牌大众、宝马、本田、丰田等合作方青睐品牌
- 7、全绿色产业链——食品级原料



Product Introduction 产品简介

ECO-COAT is a New Nano Anti Corrosion Coating/Top-coat/ Sealant that self-developed and exclusively owned by Zhejiang Tianfeng New Material Technology Co., Ltd, who has been dedicating in chemical industry more than 10 yrs. It is mainly for electroplating industry, especially on Zn/Zn Alloy plating parts as sealer or top coat for corrosion resistance.

“**爱可特**”纳米防锈涂料是由专注化工行业10余年的浙江天奉新材料科技有限公司自主研发、独有的新型纳米防腐涂料/面漆/密封胶。主要用于电镀行业，特别适用于锌及锌合金电镀件上作为封闭剂或面漆，达到高效腐蚀。

It's 100% **Chromium free** without toxic chemicals or heavy metals, solvent based liquid based on the most innovative Germany nanotechnology, made from nano surface treatment materials, coupling agent, and self-developed functional materials etc, widely used on Zn/Zn alloys plating metal substrates.

此产品100%**不含铬**，不含其他有害化学物质或重金属，基于最新德国纳米技术，由纳米表面材料、耦合剂和自主开发的功能材料等多重材料复合制成，广泛应用于锌及其合金电镀金属基材。

Once applied will chemically and physically form into a strong protective film of thickness 1-2 μ m, provides outstanding corrosion resistance, and significantly increases the salt spray time(NSS up to 1000hrs based on Zn). in addition it can also work as primer for other paint.

涂覆后会通过化学和物理共同作用下形成一层厚度为1-2 μ m的坚固保护膜，具有优异的耐腐蚀性能，并显著增加盐雾时间（基于锌层，NSS可高达1000小时以上）。此外，它还可以作为其他面漆的底漆使用。



“爱可特” Pro黑色强力防锈封闭剂——达克罗、不锈钢发黑封闭剂

Eco-Coat Pro Black Anti Rust Coating——Dacromet, Stainless Steel Blackening Top Sealant

与市场上许多其他涂料不同，“爱可特Pro”是一种专门针对紧固件镀黑染黑新开发的溶剂型双组分液体复合纳米涂料，螺丝无需进行黑色钝化，可直接染黑。施工简单方便，覆盖力强，可直接应用在大多数金属表面，可用于电解锌、镀锌、机械镀锌、渗锌、锌合金、生铁、不锈钢、不锈钢铁以及达克罗、久美特等基材表面，在基材表面可生成经久耐用的黑色膜层，具有超强的防腐性能，具有世界一流的防腐防锈能力。

Unlike many other coatings in the market, ECO-COAT PRO is a new developed solvent-based, two-component liquid compound nano coating for a fast blackening treatment, No black passivation necessarily needed, but immediately obtain a black finish. Easy to use directly on all kinds of metal surfaces with strong bonding and covering force, applicable to electrolytic zinc, Zn-alloy, bare metal, stainless steel or iron as well as Dacromet, Geomet. It will generate a thin film of aesthetic finishing in black color and super anti corrosion property to achieve world-class corrosion protection for your iron and steel.

- 100% 不含铬和其他重金属。
- 超强耐腐蚀性(SST 范围从数百小时到 1000 小时)。
- 可直接使用，不会因黑色钝化而牺牲原镀锌层。
- 强大的黑色覆盖能力和完美的均匀性、亮度和美观性。
- 施工简单灵活，可浸涂、喷涂或刷涂。
- 低温快速干燥，无需高温(80-120°C 下 10-15 分钟或风干)。
- 膜层薄(1-2um)，不影响工件精度，凹槽或螺纹或孔中无堵塞和粘连问题。

- 100% free of Chromium and other heavy metals.
 - Super Corrosion Resistance(SST ranged from hundreds to 1000hrs).
 - Direct use without sacrificing of Zn caused by Black Passivation.
 - Strong black covering ability and perfect uniformity, brightness and aesthetic.
 - Easy and flexible to apply by dip-spin, spray or brush.
 - Faster and lower curing temperature (10-15mins under 80-120°C or air dry).
 - Super thin film of 1-2um without worries in precision or blocking in recess fill or thread or holes of fasteners, especially conglutination problem.
- ECO-COAT PRO能进一步有效提高和增强锌及其合金的抗牺牲腐蚀能力，抑制锌的白锈和钢铁的红锈。

ECO-COAT PRO can further efficiently improve and strengthen the resistance to sacrificial corrosion of zinc and its alloys, inhibits the white rust of zinc as well as the red corrosion of iron steel.

Product Advantages 产品优势

◆ **Super Corrosion Resistance** (NSS up to 1000hrs based on Zinc, 2000hrs based on Zn-Nikel).

超强耐腐蚀性(基于锌盐雾可达 1000 小时, 基于锌镍盐雾可达 2000 小时)

◆ **100% free of Chromium and other heavy metals.**

100% 不含铬和其他有害重金属。

◆ **Super thin thickness(1-2 μ m)** without worries in precision, recess fill or thread or holes block of fasteners.

超薄厚度(1-2 μ m), 无需担忧紧固件的装配精度、凹槽、塞螺纹或孔等堵塞问题。

◆ **Perfect uniformity, brightness and aesthetic.**

膜层均匀、高亮有金属质感, 外观美感完美。

◆ **Easy and flexible to apply by dip-spin, spray, or brush.**

施工简单灵活, 可浸泡甩干, 喷涂或刷涂

◆ **Faster and lower cure temperature** (10-15mins under 80-120°C or air dry).

快干且无需高温(80-120度烘烤10-15分钟或者晾干即可)

◆ **Outstanding durability without peeling, fading.**

耐久性优异, 不剥落、不褪色

◆ **Cost competitive:** 40-60m²/L by spray; recycling use, no waste.

量大成本竞争力: 喷涂1升可涂40-60m²; 回收料可循环使用, 无浪费。

◆ **Customization available**(Viscosity, friction, Color, Packing).

可提供定制服务(粘度、摩擦系数、颜色、包装等)。



HOW ECO-COAT WORKS:

Zinc and its Alloy plating is widely used solutions to prevent underlying metal from corrosion, whereas Zinc acting as sacrificial element and its alloy imparting other properties for improving hardness, conductivity and aesthetic etc, but still far from satisfying the needs of most demanding industries as automobiles, aerospace, aviation, chemical, electric power, bridges and marine industry etc.

锌及其合金电镀是广泛应用于金属防腐, 锌及其合金可作有效提升防腐以及其他硬度、导电性和美观等性能, 但对于汽车、航天、航空、化工、电力、桥梁及海洋工业等有苛刻防腐要求的行业还是远远不够。

Thanks to ECO-Coat's unique composition of special chemicals and nano functional materials, it can easily react with Zinc and its alloy to obtain a thin compact protective film, which perfectly permeate and fill up the porous crystal structure with strong chemical bond to Zn plating layer via passivation layer in drying process, and besides it exhibits hydrophobic effect from outermost layer. All together working as

excellent barrier system against corrosion, maximally protect the underlying zinc and its alloy plated to the substrate metal, providing super corrosion resistant performances, inhibit and delay the appearance of both white and red rust.

得益于ECO-Coat独特的纳米技术和纳米材料, 它可以很容易地与锌及其合金发生反应, 获得一层薄而致密的保护膜, 该保护膜完美地渗透和填充多孔晶体结构, 经高温烘烤, 其化学键通过与钝化层于锌层牢固结合在一起, 且最外层表现出良好疏水效果, 最终在全方位立体作用下形成优异的防腐屏障系统, 最大限度地保护锌及其合金镀层和金属基材, 提供超强的耐腐蚀性能, 抑制和延迟白锈和红锈的出现。

It can also be used on Zn followed by trivalent passivates, with Eco-Coat applied could help boost the trivalent passivate performance by providing an extra barrier, increase the corrosion resistance of previous galvanized and/or passivated surfaces and achieve enough long Salt Spray Time upto 1000-2000hrs based on Zn and Zn-Nikel.

它也适用于三价铬钝化后的锌层表面, Eco-Coat 可以通过提供额外的屏障来帮助提高三价铬钝化性能; 显著提升镀锌和/或钝化表面的耐腐蚀性能, 实现足够长的盐雾时间 (可达1000小时/镀锌--2000 小时/锌镍)。



“SPECIFICATIONS” 技术指标

Items 项目		Index 指数	Test Result 结论
Salt Spray Test on Zn 中性盐雾测试(镀锌)		≥ 1000hrs(NSS)	Pass/合格
Dry time 干燥时间	Surface Dry 表干	10-15mins under 80--120°C; 30min air dry. 常温20分钟或80-120度烘烤10-15分钟	Pass/合格
	Solid Dry 实干	≤48hrs	Pass/合格
Solid Content固含量		≥40%	Pass/合格
Eco friendly 环保		Mercury汞≤0.1% Cr VI六价铬≤0.01% Lead铅 ≤0.01%	Not detected 未检出
Film Adhesion 附着力		0 grade adhesion, no peeling, bubble 0级, 无脱落起皮	Pass/合格
Water Resisting 耐磨		0 grade adhesion, no peeling, bubble 0级, 无脱落起皮	Pass/合格
Thickness厚度		1-2μm	Pass/合格
Coverage施工面积		40-60m²/L or 2ton/Pail(30L)	Pass/合格
Shelf life 保质期		1 year	Pass/合格
Colors 颜色		Clear/Shine Black/Matt Black Red,Green,Yellow,Blue	Pass/合格
Hardness/ Scratch resistance 硬度/耐划伤		≥9H	Pass/合格
Durability 耐用性		10yrs+ under normal environment 常规自然环境下10年以上	Pass/合格

APPLICATION FIELDS应用领域

◆ Electroplating industry, especially on zinc bolts and screws of zinc/nickel plating.

电镀行业-尤其镀锌/镀镍螺栓和螺钉等紧固件。

◆ Other metal surfaces as roof, chassis, steel surfaces in need of high anti-rust demands

其他金属表面, 如屋顶、底盘以及有防锈要求的金属表面

◆ Steel infrastructures as sports arena, bridges, offshore platforms, vessels, tanks, chemical and petrochemical plants, paper mills, the power industry and stations.

体育场馆、桥梁、海上平台、船舶、储罐、石油化工厂、造纸厂、电力工业和车站等钢铁基础设施

◆ Metal surface of oil storage tanks, chemical pipes, grain storage tanks, oil tanks etc.

储油罐、化工管道、粮食储罐、油罐等金属表面。

STORAGE存储

◆ Keep in dry and cool place (-20-40°C) with good ventilation.

贮存于干燥阴凉处(-20-40°C), 通风良好。

◆ keep away from direct sun, rain and fire, prevent from collision, external pressure extrusion, and inverted placement.

避免日晒雨淋和火源, 防止碰撞、挤压、倒置。

◆ Shelf life:1 year.

保质期:1年

How ECO-COAT Anti Rust Coating Works

爱可特如何有效防锈

1000 hrs Salt Spray Test:

galvanized steel I-Beams underperformed in comparison to I-Beams coated with Eco-coat coating

1000 小时盐雾测试表明:与涂有“爱可特”涂层的工字钢相比, 镀锌钢工字钢的性能较差



the continuous Salt Spray Exposure caused the galvanized sample to begin visibly shedding its protective zinc layer in form of zinc oxide, also known as White Rust

连续的盐雾暴露导致镀锌样品开始明显脱落氧化锌形式的保护性锌层, 也称为白锈。



In contrast, ECO-COAT coating is hydrophobic and repels water molecules, preventing the oxidation caused by moisture contacting the metal beneath its protective layer.

相比之“爱可特”涂层有疏水性, 可排斥水分子, 防止水分接触保护层下方金属而引起的氧化。

Performances in Anti Rust/Corrosion

爱可特防锈性能对比



Salt Spray Test (NSS)

中性盐雾试验

No.1



No.2



No.3



After putting in to Salt Spray Test Chamber to accelerate the rust process.

放入盐雾试验箱后进行加速生锈过程

Condition条件:

- ◆ Approximate 5% sodium chloride solution(约5%氯化钠溶液)
- ◆ Temperature温度: 35°C
- ◆ Humidity湿度: ≥95%

Results结论:

Eco-Coat Coating has superior Anti-rust/corrosion performance.

同等条件下, 经反复对比爱可特涂层具有卓越的防锈/腐蚀性能。

0 hrs

1000 hrs



How to use Eco-Coat Clear Anti Rust Coating

爱可特透明强力封闭剂施工指导

爱可特透明强力封闭剂(金属镀层保护材料)

Eco-Coat Clear Anti rust Coating (Sealant/Top Coat)

外观: 清澈湖蓝

Color: Light Blue

产品型号代码:T-01A&B

Product Code: T01 A&B

1. 产品准备, 按比例混合A剂和B剂(比例7:1), 并搅拌均匀, 待用。

Prepare the product by mixing well part A and B(Ratio 7:1) and get ready to use.

2. 将干燥的镀锌件(干净无污)放入干净的网兜或篮筐内(不锈钢材质最佳)。

Put galvanized parts(must be clean and dry without water, oil/condemnations) into clean mesh bag or basket(Stainless steel for the best);

3. 浸泡溶液中,完全沉浸后1-2秒取出;

Fully immerse the parts together with basket into T01 solution 1-2 seconds for sufficient contact with liquid.

4. 取出后放入离心机甩干5-10秒; (离心机转速建议800转/分)

Move to centrifuge(800rpm) to spin dry for 5-10 seconds.

5. 摊开晾干或网带炉烘干即可。烘干条件:100-150度,10-15分钟。

Spread out on mesh belt conveyor for air dry or speed dry in oven (100-150°C for 10-15 minutes)

6. 离心机脱出多余溶液可回收重复利用(可酒精稀释5-10%后使用), 直至用完为止;

Excess liquid collected from centrifuge can be reused(may diluted by 5-10% of Ethanol) until using up.



注意: 若针对少量工件进行施工测试, 完成步骤1,2,3,4后, 请用镊子轻轻拿出工件进行烘干, 避免倾倒所致的额外的工作之间和篮子的碰撞和刮蹭, 导致未干燥的涂层遭到破坏, 进而影响真实盐雾和防腐性能

Attentions: if run a small test on few parts, after process(step 1,2,3,4), please use tweezers to take out the coated parts slightly for immediate dry to avoid additional contact between coated parts and basket that may remove/scratch the coating in wet, so as to reduce real salt spray test time in certain parts where coating film was partially removed by scratches.

建议: 若想提高盐雾时间或防锈效果, 可在干燥并冷却后重复一遍以上流程,即两涂两烘; 建议第1涂烘干温度150-180°C, 半小时后第2涂, 烘干温度120°C, 15分钟。

Tips: For higher Salt Spray Time or anti-rust performance, Double Coating(2C2B) is recommended: 1st coat dry under 150-180°C, 2nd coat apply 30mins later and dry 15mins under 120°C.

流程关键词: 镀锌→透明封闭→离心脱水→烘干

Key Words: Galvanization→ Dip into Clear anti rust coating→ Centrifugal dehydration→ Drying

How to use Eco-coat Black Anti Rust Coating

爱科特黑色防锈封闭剂使用说明

做黑锌处理要用到黑色钝化液和黑色封闭两种药水，步骤如下:

Black Passivation Solution and Black Anti Rust Coating are necessary to do BLACK ZN.

一、黑色钝化/ Black Passivation

爱可特环保黑锌钝化液(无色透明液体，像水一样的清澈透明)

Eco-Coat Eco Black Zinc Passivation Solution(clear as water)

产品型号代码:BP-01

Product Code: BP-01

1. 以1:4或1:5的比例进行兑水稀释搅拌均匀待用;

Dilute by water at ratio of 1:4 or 1:5 and mix well for use.

2. 将白锌件(或钝化后的蓝白镀锌件)放入稀释后的钝化液中浸泡并轻轻晃动, 10-20秒(以实际操作为准)待镀件颜色又白变为深褐色或深咖啡色后取出

Immerse the white Zn parts (or blue white galvanized parts after passivation) into diluted passivation solution and shake slightly for 10-20 secs (the actual shall prevail) until turning dark brown and take out.

3. 将钝化发黑后的镀件放入清水清洗两道后取出,烘干后等待封闭;

Rinse passivated parts twice by water, then take out to dry and get ready for topcoat below.

二、黑色封闭/ Black Anti Rust Coating/Top Coat

爱可特黑色强力封闭剂(亮光黑、亚光黑)

Eco-Coat Black Anti Rust Coating

(Shine Black-01 or Matt Black-02)

产品型号代码:BSC-01/02 A&B

Product code: BSC-01/02 A&B



4. 产品准备，按比例混合A剂和B剂（比例7:1），并搅拌均匀，待用。

Prepare the product by mixing well part A and B(Ratio 7:1) and get ready to use.

5. 将已经黑色钝化并干燥后的镀件放入溶液中1-2秒，完全浸湿后取出; 放入离心机甩干5-10秒;

Immerse the parts(dry and clean) after black passivation into Black Anti-rust Coating together with basket for 1-2 secs, and then move to the centrifuge for spinning dry for 5-10 secs.

6. 烘干即可。烘干条件:100-150℃, 10-15分钟

Lay out for air dry or dry in mesh belt oven(100-150℃, 10-15 minutes)

7. 离心机脱出多余溶液可回收重复利用(可酒精稀释5-10%后使用), 直至用完为止;

Excess liquid from centrifuge can be reused(may diluted by adding 5-10% of Ethanol) until using up.

注意：若针对少量工件进行施工测试，完成步骤1,2,3,4后，请用镊子轻轻拿出工件进行烘干，避免倾倒所致的额外的工件之间和篮子的碰撞和刮蹭，导致未干燥的涂层遭到破坏，进而影响真实盐雾和防腐性能

Attentions: if run a small test on few parts, after process(step 1,2,3,4), please use tweezers to take out the coated parts slightly for immediate dry to avoid additional contact between coated parts and basket that may remove/scratch the coating in wet, so as to reduce real salt spray test time in certain parts where coating film was partially removed by scratches.

建议：若想提高盐雾时间或防锈效果，可在干燥并冷却后重复一遍以上流程，即两涂两烘；建议第1涂烘干温度150-180℃，半小时后第2涂，烘干温度120℃，15分钟。

Tips: For higher Salt Spray Time or anti-rust performance, Double Coating(2C2B) is recommended: 1st coat dry under 150-180℃, 2nd coat apply 30mins later and dry 15mins under 120℃.

流程关键词：

白锌→钝化→水洗→烘干→黑色封闭→离心→烘干=黑锌

Key Words:

White zinc → Black Passivation → Water Rinse → Drying → Black Top Coat → Spinning → Drying = Black Zinc

注意：

- ※ 所有封闭剂产品均不可兑水。
- ※ 浸泡之前务必确保网兜或篮框以及镀件干燥无污。
- ※ 请及时清洗工具（容器、篮子、网兜等），避免残渣起皮、沉积。
- ※ 同时剩余溶液请密封储存，以免影响下一次的使用。
- ※ 如喷涂建议原液按照1:1用无水乙醇或甲醇稀释后使用，喷枪口径0.8-1.0mm。

ATTENTIONS:

- ※ All our anti rust coating is forbidden to mix with water.
- ※ Mesh bags or baskets and target parts must be dry and clean before coating.
- ※ Containers as basket and mesh bag etc need to be cleaned in time after use.
- ※ The remainings must be sealed tightly and stored properly for next use.
- ※ If Using Spray Gun, nozzle size recommend to be 0.8-1.0mm,dilute by ethanol/methanol first under ratio 1:1.



How to use Eco-Coat Pro Black Anti Rust Coating

爱科特黑色高强防锈封闭剂使用说明 simple as 2C2B 简而言之两涂两烘

爱可特黑色高强封闭剂(金属镀层保护材料)

Eco-Coat Pro Black Anti rust Coating (Sealant/Top Coat)

外观:黑色

Color: Black

产品型号代码: BSC-GFG A&B

Product Code: BSC-GFG A&B



1. 产品准备, 按比例混合A剂和B剂(比例7:1), 并搅拌均匀, 待用。

Prepare the product by mixing well part A and B(Ratio 7:1) and get ready to use.

2. 将待涂工件(干净无污)放入干净的网兜或篮筐内(不锈钢材质最佳)。

Put ready parts(must be clean and dry without water, oil/condemnations) into clean mesh bag or basket(Stainless steel for the best);

3. 第一遍涂: 浸泡溶液中, 完全浸湿后1-2秒取出;

Fully immerse the parts into GFG solution 1-2 seconds together with basket/mesh bag for sufficient contact with liquid as the 1st coat.

4. 取出后放入离心机甩干5-10秒; (离心机转速建议800转/分)

Move to centrifuge(800rpm) to spin dry for 5-10 seconds.

5. 摊开晾干或网带炉烘干即可。烘干条件:100-150度,10-15分钟。

Spread out on mesh belt conveyor to dry or fast dry in oven(100-150°C for 10-15 mins)

6. 第二遍涂: 冷却后再次浸泡溶液中, 完全浸湿后1-2秒取出;

After cooling down, immerse the 1st coated parts again into GFG solution 1-2 seconds together with basket/mesh bag for sufficient contact with liquid as the last coat.

7. 离心机脱出多余溶液可回收重复利用(可酒精稀释5-10%后使用), 直至用完为止;

Excess liquid collected from centrifuge can be reused(may diluted by 5-10% of Ethanol) until using up.

注意:若针对少量工件进行施工测试, 完成步骤1,2,3,4后, 请用镊子轻轻拿出工件进行烘干, 避免倾倒所致的额外的工作之间和篮子的碰撞和刮蹭, 导致未干燥的涂层遭到破坏, 进而影响真实盐雾和防腐性能

Attentions: if run a small test on few parts, after step 1,2,3,4, recommend using tweezer to take out the coated parts slightly for a immediate dry to avoid additional contact between coated parts and basket that may remove/scratch the coating in wet, to avoid reduction of real salt spray test time in certain parts where coating film was partially removed by scratches.

流程关键词: 黑色封闭1涂→离心脱水→烘干→冷却→黑色封闭2涂→离心脱水→烘干

Key Words:

Target Parts→1st Dip into GFG Coating→ Centrifugal dehydration→ Drying →Cooling→ 2nd Dip into GFG Coating →Centrifugal dehydration→ Drying

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