

# 铝及铝合金电镀系列

## Aluminum and Aluminum Alloy Plating Series

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前处理系列 Pre-Treatment Series  
**PROCLEANER™**

**PROCLEANER™ BCR 万用除腊水 Multi-purposed Wax Remover**

PROCLEANER™ BCR 是一种能除去不同种类的油脂及适用于不同金属基体的万用除腊水：特殊配方，杂质容忍度高、寿命长、不侵蚀基体，能保持抛光面光泽。如浸洗或配合超声波一起使用，效果更佳。

- Remove wax rapidly
- Neutral pH solution, no harm to the substrates
- Keep the original brightness of the substrates
- Recommend to use with ultrasonic washing for better result

**PROCLEANER™ BR #1/ BR #2 万用除腊水 Multi-purposed Wax Remover**

PROCLEANER™ BR #1/ BR #2 万用除腊水为特别配方的万用除腊水，除一般钢铁金属件外，其它如铜、锌、铝合金工件亦可以使用，不伤基体，可保持抛光面原有光泽。由于其配方特殊，操作浓度及温度可比一般产品略低。如配合机械摇摆或超声波清洗，效果更佳。

- Special formular
- Neutral pH solution, no harm to the substrates
- Keep the original brightness of the substrates
- Thanks to the special formular, the operation concentration and temperature could be lower than other products in general
- Recommend to use with mechanic swinging or ultrasonic washing for better result

**PROCLEANER™ 151 高效能万用热浸除油粉 High Performance Multi-Purposed Hot Dip Cleansing Powder**

PROCLEANER™ 151 是一种适用于铁、铜、锌合金及黄铜等工件的除油粉：碱度低，完全不伤害基体。乳化能力强，油污容忍量极高。适合热浸，如配合超声波使用，效果更佳。

- Designed to remove oil for Iron, Copper, Zinc alloys, Brass
- Remove oil rapidly
- Low alkalinity, no hard to the substrates
- Excellent tolerance to metal impurities
- Suitable for hot dip cleaning; use with ultrasonic washing for better result

**PROCLEANER™ 152 钢铁电解除垢粉 Electrolytic Cleansing Powder**

PROCLEANER™ 152 是一种适用于钢铁基体的除垢粉：具有强力除垢、除锈、除氧化膜及涂料之功能；腐蚀速度均匀，不会造成局部侵蚀，适用于铝合金之弱腐蚀。适合热浸，如配合超声波使用，效果更佳。

- Remove oil, rust and residues effectively
- No harm to substrates
- Ideal for aluminum alloys' mild caustic
- Suitable for hot dip cleaning; use with ultrasonic washing for better result

**PROCLEANER™ 251 万用电解除垢粉 / PROCLEANER™ 251 Electrolytic Cleansing Powder**

PROCLEANER™ 251 是一种适用于所有基体的温和万用电解除垢粉：乳化能力强，工作寿命长；泡沫少，易清洗，减少带入污染。

- Mild cleansing powder for all types of substrates
- Contain chelate agents remove oil, rust and residues effectively
- Durable & excellent tolerance to metal impurities

**PROCLEANER™ 1101 不含磷碱性浸洗剂 Phosphorous-Free Alkaline Soak Clean Agent**

PROCLEANER™ 1101 为一种多用途的不含磷碱性浸洗剂：特别为清洗铜件而设计，最适宜用于除油脱脂除腊等；可用于滚镀操作和在磷化处理前；也可用于清洗青铜和红铜(可能会使此类金属失去少许光泽)。它含有大量湿润剂，容易用清水冲洗干净；于低温操作同样有效；其它 PROCLEANER 电解除油清洗剂被带入也不会影响性能；废水处理简单。

- Free of Phosphorous
- Effectively removes all kinds of oil, was and grease on steel substrates
- Applicable to barrel plating and pre-phosphorous process
- Can be used on bronze substrates (possible to cause color to slightly lose its glossiness)
- Contains lubrication/ wetting elements
- Operable at low temperature; unaffected by drag-out of other cleaning agents
- Easy waste treatment



## 前处理系列 Pre-Treatment Series ALUMEX™ + PROCLEANER™

### ALUMEX™ DS 系列酸性除垢剂 Acid Cleanser Series

ALUMEX™ DS 系列为硝酸及磷酸作基础液的酸性除垢剂，用于铝合金工件批的镀前处表面处理。由于做微触速度比碱性除垢剂缓慢，使电镀层更均匀覆盖及达至最佳结合力。

- Acid-based mild cleanser for aluminum and aluminum alloys
- Slower micro-erode speed in comparison to alkaline cleanser
- Improve the covering and adhesion power

### ALUMEX™ DC-8/ DCC 铝合金氰化沉锌剂 Electroless Zincates Plating Process

ALUMEX™ DC-8 为含氰化物之沉锌剂，用于铝合金工件的镀前表面处理。能在铝合金表面置换一层含有锌、铜、铁、镍之镀层。此置换膜结晶均匀，可为随后之镀层提供良好之结合能力。

- An advance zincates pretreatment process for aluminum and aluminum alloy
- Capable of producing excellent adhesive deposits of Zinc, Copper, Iron and Nickel on the surface of aluminum and aluminum alloy

### ALUMEX™ NCB-8 无氰铝合金沉锌剂 Cyanide-Free Electroless Zinc Plating Process

ALUMEX™ NCB-8 为不含氰化物之沉锌剂，于铝和铝合金材料上有着良好的附着能力。操作条件简单，使用经济，适合于挂镀或用篮筐盛载操作。

- Cyanide-free
- Simple economical operation
- Excellent adhesion on aluminum and aluminum alloys
- Ideal for rack or basket plating

### ALUMEX™ CFP 无铬化学转化膜 Chemical Conversion Coating

ALUMEX™ CFP 是一种特别为铝合金而设并符合环保的无铬钝化处理工艺。这创新的工艺能提供最大抗腐蚀能力，能使多种铝合金通过 1000 小时的耐蚀测试。此外，此工艺亦具有抗高温的能力，在高温的条件下工作，比如在汽车发动机配件和各种电设备中之散热器，其稳定性仍然保持非常高。此特性容许使用者在上漆之前，升高他们烘箱的温度，直接提高生产量和生产力。

- Environmental-friendly: free of all kinds of Chromium
- Tailor-made for aluminum alloy substrates
- Excellent corrosion resistance coating (Passed 1000hrs Salts Spray Test)
- Stable performance under high temperature, ideal for automobile engine or radiator
- Capable of increasing the baking temperature before lacquering improve productivity.

### PROCLEANER™ 1283 不含磷碱性电解除油剂 Phosphorous-Free Alkaline Electrolytic Degreasing Agent

PROCLEANER™ 1283 为一种效率高，不含磷的碱性电解除油剂；专为活化镀锌件而设计，能用于洗涤钢、铜及黄铜；可用作阴极或阳极电解除油；其碱浓度非常低，不会侵蚀铸件，也减低了发黑现象；本工艺因不怕硬水及很容易用水冲洗干净，所以最适宜全自动生产线。生产操作者可用非常广泛的电流密度范围操作，浸洗时间长也不会影响金属机体；本产品独特的配方有高度洁净性能，不起泡沫；PROCLEANER™ 1283 可以彻底洗涤未经打磨的铸件及已打磨的铸件。

- Free of Phosphorous
- Best fit for activated zinc workpieces; applicable on steel, copper and brass
- Suitable for both anode and cathode electrolytic cleaning
- High degreasing performances
- Would not cause corrosion and blackening to workpieces due to its low alkalinity
- No corrosion on zinc substrates even for long period of soak cleaning
- Compatible with Hardwater
- Easy cleaning proces

### PROCLEANER™ 1220EC 多功能低温电解除油剂 Multi-Purposed Cryogenic Electrolytic Degreasing Agent

PROCLEANER™ 1220EC 适用于清洗钢、铜及黄铜；它既可以用作阴极除油，也可用作阳极除油。

- Suitable for steel, copper and brass
- Applicable for both anode and cathode degreasing

## 镀镍系列 Nickel Plating Series SPECTRA™

### SPECTRA™ T-400 半光亮镍电镀工艺 Semi-Bright Nickel Plating Process

SPECTRA™ T-400 专门为防腐性能要求高的电镀工件而设计，是双层镍及多层镍系统必备的半光亮镍底层。此工艺不含香豆素，可降低废水和活性炭处理的成本；其镀层填平度极高，柔软性及电位差 (S.T.E.P.) 数值均可媲美一般香豆素系统的半光亮镍；镀液操控容易，可轻易将其它半光亮镍工艺转为 SPECTRA™ T-400。

- Highly Corrosion Resistance Semi-Bright Nickel deposit
- Easy to operate
- No coumarin, low cost for waste water and active carbon treatment
- Excellent leveling power, ductility and S.T.E.P. value
- Suitable for double or multilayer Nickel Plating

### SPECTRA™ T-500 或 T-550 Semi-Bright Nickel Plating Process

SPECTRA™ T-500 或 T-550 专门为防腐性能要求高的电镀工件而设计，是双层镍及多层镍系统必备的半光亮镍底层。此工艺不含香豆素，可降低废水和活性炭处理的成本；其镀层填平度极高，柔软性及电位差 (S.T.E.P.) 数值均可媲美一般香豆素系统的半光亮镍；镀液操控容易。

- Highly Corrosion Resistance Semi-Bright Nickel deposit
- Easy to operate
- No coumarin, low cost for waste water and active carbon treatment
- Excellent leveling power, ductility and S.T.E.P. value
- Suitable for double or multilayer Nickel Plating

### SPECTRA™ K-600 高硫镍电镀工艺 High Sulfur Nickel Plating Process

SPECTRA™ K-600 特别适用于防腐性能要求高的多层镍电镀工艺；此工艺能把镀层的镍含量提高至 0.1 - 0.2%；如把 SPECTRA™ K-600 放于半光亮镍（低硫镍）及光亮镍之间，镀层的电位差会明显增加，大大提高镀层的防锈能力。

- Increase the content of Nickel up to 0.1 - 0.2%
- Provide high sulfur nickel deposit to the substrate to prevent the pit-type corrosion
- Design for double or multilayer Nickel Plating with High Corrosion Resistance Requirements

### SPECTRA™ T-700 或 T-720 镍封电镀工艺 Nickel Sealer

SPECTRA™ T-700 / T-720 特别适用于防腐性能要求高的多层镍电镀工艺；此工艺含有一定量的不导电性微粒，均匀地分布在光亮镍镀层上，使其后套上的铬层形成微孔，从而提高防腐能力。

- Suitable for multilayer Nickel Plating with High Corrosion Resistance Requirements
- The non-electric powder spread evenly on the nickel deposit, which improve the corrosion resistance



## 酸铜系列 Acid Copper Series ÜBER-BRITE™

### ÜBER-BRITE™ 光亮酸铜系列 Acid Copper Plating Process

ÜBER-BRITE™ 的镀层光亮，不易产生针孔，填平度极佳（高达 75%），且内应力低及富延展性；镀液非常容易控制，电流密度范围宽阔，杂质容忍度高（不需经常用活性炭粉处理）。由于镀层电阻率低，故非常适合于对镀层物理性能要求高的电机工业，而各种不同类型的基体金属，铜件、锌合金件、塑料件等亦同样适用。

- Mirror bright copper deposit
- Excellent leveling power and ductility
- Easy to operate
- Ideal for both plastic and metal substrates



## 一般要求

## General Requirements

1

- 超声波除腊 Ultrasonic Cleansing
- PROCLEANER™ BR#1/BR#2 万用除腊水 Multi-purposed Wax Remover

2

- 热浸除油 Hot Dip Cleansing
- PROCLEANER™ 151 高效能万用热浸除油粉 High Performance Multi-purposed Hot Dip Cleansing Powder

3

- 微碱腐蚀 Electrolytic Cleansing
- PROCLEANER™ 152 钢铁电解除垢粉 Copper and Metal Electrolytic Cleansing Powder

4

- 出光除垢 Desmut
- ALUMEX™ DS 酸性除垢剂系列 Acid based Cleanser Series

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- 沉锌(一)Zincates I
- ALUMEX™ NCB-8 铝合金无氰沉锌剂或DC-8/DCC 铝合金氰化沉锌剂 Cyanide-free or Zincates Plating Process

6

- 脱锌 Acid Stripping
- 硝酸(HNO3)+水(比例 1:1) Nitric Acid (HNO3) + Water (Ratio 1:1)

7

- 沉锌(二)Zincates II
- ALUMEX™ NCB-8 铝合金无氰沉锌剂或DC-8 铝合金氰化沉锌剂 Cyanide-free or Zincates Plating Process

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- 瓦特预镀镍 Watts Nickel Plating
- SPECTRA™ T-400 半光亮镍电镀工艺 Semi-Bright Nickel Plating Process

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- 光亮酸铜电镀 Bright Acid Copper Plating
- ÜBER-BRITE™ 光亮酸铜系列 Bright Acid Copper Plating Series

10

- 线外铜抛光 Polishing

11

- 电解除油 Electrolytic Cleansing
- PROCLEANER™ 251 万用电解除垢粉 Multi-purposed Electrolytic Cleansing Powder

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- 半光亮镍电镀 Semi-Bright Nickel Plating
- SPECTRA™ T-500 或 T-550 半光亮镍电镀 T-500 or T-550 Semi-bright Nickel Plating Process

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- 高流镍电镀 High Sulfur Nickel Plating
- SPECTRA™ K-600 高硫镍电镀工艺 High Sulfur Nickel Plating Process

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- 光高镍电镀 Bright Nickel Plating
- NALDO™ 或 NIDELL™ 或 NIKO™ 光高镍电镀工艺 Bright Nickel Plating Process

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- 镍封 Micro-Pours Nickel Sealing(MPS)
- SPECTRA™ T-700 或 T-720 镍封电镀工艺 T-700 or T-720 Nickel Sealer

完

END

- 三价铬或六价铬电镀 Trivalent or Hexavalent Chromium Plating
- CHROMO-TRI™ 三价铬电镀工艺 or CR™ 六价铬电镀工艺 Trivalent or Hexavalent Chromium Plating Series

## 三价铬或六价铬电镀系列 Trivalent or Hexavalent Chromium Plating Series CHROMO-TRI™

CHROMO-TRI™ 三价铬电镀系列 Trivalent Chromium Plating Process OR  
CR 六价铬电镀系列 Hexavalent Chromium Plating Process

CHROMO-TRI™ / CR™ 系列电流密度范围宽阔，覆盖及分散能力极佳，并可于较低的温度和电流密度下操作，节约能源。废水处理简单，沉积速度快，对硫酸根和氯离子的容忍性好；镀层色泽均匀及美观。

- Cost-efficient: Operate at low temperature and current density
- Excellent throwing power and dispersion power
- Low metal concentration, easy waste water treatment
- Excellent covering power
- High capability of current flow, minimize the current wastage
- High tolerance in metal impurities. Exchange-ion facility is not necessary for removing the impurities

## 锌铝涂料系统 Zinc & Aluminum Coating system ZICOLLUM™

ZICOLLUM™ 无铬水性锌铝涂料系统  
ZICOLLUM™ Chromium-Free Zinc & Aluminum Coating system

ZICOLLUM™ 是一种崭新的环保无铬水性锌铝涂料系统，既具备传统锌铬涂料系统的优点，同时又能满足世界各国对环境保护日益严格的法规要求（例如 RoHS、EOLVD 和 WEEE），绝对是传统锌铬涂料系统的最佳代替产品。

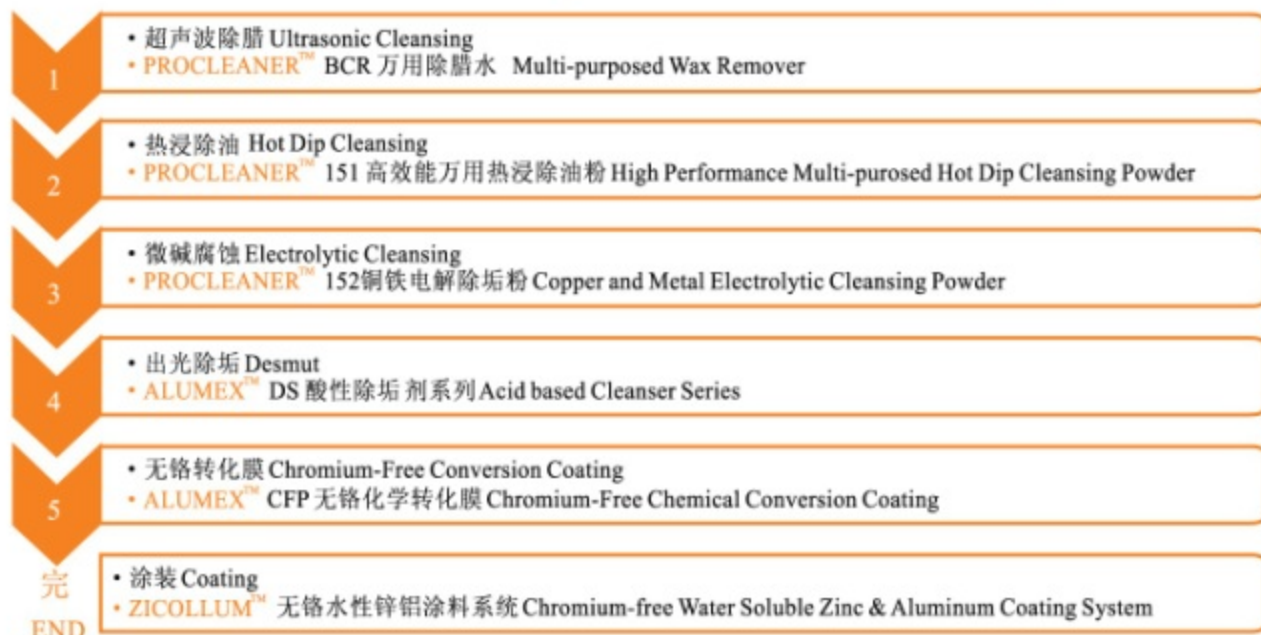
ZICOLLUM™ is a Chromium-Free Zinc & Aluminum Coating system, which has the advantages of the traditional zinc & chromium coating system; but complies with the recent environmental regulations, such as RoHS, EOLVD and WEEE. It is the perfect substitution of the traditional zinc & chromium coating system.

- 银白色的涂层薄而均匀、表面细腻，光泽极强；
- 极强防腐能力：可通过 240 小时至 2000 小时的盐雾测试；
- 高耐热性：在 300° C 下加热 3 小时，防腐能力仍然保持不变；
- 低 VOC 排放，绝对符合国际标准；
- 不含任何形式的铬元素（六价铬和三价铬）；
- 不含有毒的金属如镍、铅、钡和汞等。
- 适合滚镀、挂镀或选择镀
- Bright and fine argentous metallic surface;
- Outstanding Corrosion Resistance: Passed 240 – 2000 hours of Salt Spray Test;
- Heat Resistance: The corrosion resistance level of the coating remains unchanged even after heating for 3 hours at 300°C;
- Low VOC emission, comply with the international regulations;
- No Trivalent or Hexavalent Chromium
- No toxic metals, such as Nickel, Lead, Barium, mercury, etc.
- Suitable for Barrel, Rack and Continuous Plating



## 高防腐性要求

## High Anti-Corrosion Requirements



## 产品简介

## Product Information

### 镀镍系列 Nickel Plating Series NALDO™ / NIDELL™ / NIKO™

NALDO™ 或 NIDELL™ 或 NIKO™ 光亮镍电镀工艺  
NALDO™ / NIDELL™ / NIKO™ Bright Nickel Plating Process

NALDO™ 或 NIDELL™ 或 NIKO™ 光亮镍系列拥有宽广的电流密度范围，上铬容易，低电位的覆盖力甚强；电镀分解产物低，镀液使用寿命长；镀层快速光亮，洁白柔软、填平度高而均匀；适用于单层光亮镍或防腐性能要求的多层镍工艺。

- Mirror bright nickel deposit
- Excellent ductility, leveling and coverage power
- Durable solution: Minimal decomposition
- Suitable for single or multilayer nickel plating with high corrosion resistance requirements



# Know How, Can Do.



香港总公司  
香港九龙尖沙咀星光行1634室  
电话: (852) 2499 9363  
传真: (852) 2413 6144

上海分公司  
中国上海市金山区亭林镇林盛路198号  
电话: (86) 021-5723 3399  
传真: (86) 021-5723 3004

东莞分公司  
中国广东省东莞市长安镇厦边头围三街西二巷1号  
电话: (86) 0769-8533 6811  
传真: (86) 0769-8533 2182

韩国(安山)分公司  
电话: (82) 031-493 5386 传真: (82) 031-493 5387  
电邮: wtc@winstarchem.co.kr

国内技术服务部  
东莞·广西·深圳·江门·宁波·青岛

[www.winstarchem.com](http://www.winstarchem.com)

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**Hong Kong Head Office**  
Room 1634, Star House, 3 Salisbury Road, Tsim Sha Tsui,  
Kowloon, Hong Kong  
Tel: (852) 2499 9363 Fax: (852) 2413 6144

**Shanghai Branch**  
198 Lin Sheng Street, Tin Lin Town, Jin Shan District,  
Shanghai, China 201505  
Tel: (86) 021-5723 3399 Fax: (86) 021-5723 3004

**Dongguan Branch**  
No. 1, Lane 2, 3 Sha Bian Tou Wei Street West, Changan  
Town, Dongguan, Guangdong, China  
Tel: (86) 0769-8533 6811 Fax: (86) 0769-8533 2182

**Korea (Ansan) Branch**  
3/F Plating Complex (23B-3LOT), 769-1, Wonsi-Dong,  
Danwon-Gu, Ansan-Si, Gyeonggi-Do, South Korea  
Tel: (82) 031-493 5386 Fax: (82) 031-493 5387  
Email: wtc@winstarchem.co.kr

**China Service Centers**  
Dongguan · Guangxi · Shenzhen · Jiangmen · Ningbo · Qingdao

[winchem@winstarchem.com.hk](mailto:winchem@winstarchem.com.hk)