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铜金粉
Bronze powder

Sunrise旭阳®
aluminium pastes

旭阳简介

安徽旭阳集团，创立于2002年，是国内大型铝银浆、铝银粉、球型铝粉研发、生产和供应机构，中国化工行业标准《涂料用铝颜料》的制修订单位，已通过ISO9001：2015质量管理体系、ISO14001：2015环境管理体系及OHSAS18001：2007职业健康安全管理体系认证。

集团旗下有5大生产基地、1个行业工程技术研究中心、1个省级工程技术研究中心、1个功能性金属浆料研发及技术服务平台、2家进出口贸易公司和5个直属大区办事处，综合实力在全国同行业中位居第一。

集团各种浆状、粉状、条状铝颜料产品年产能力达20000吨，广泛应用于汽车、家电、3C产品、玩具、船舶、印刷、皮革等行业；球型铝粉年产能力达50000吨，主要应用于航天、建筑钢结构、工程机械、汽车、家具、家电等领域。

Company profile

Sunrise was founded in 2002 , which is a state-level high-tech enterprise in China with R&D, production and sales of aluminium pigments. Sunrise is the founder of China chemical industry standard "aluminium pigment for coatings"，and the company has passed through ISO9001: 2015 Quality Management System，ISO 4001: 2015 Environment System certifications and OHSAS 18001-2007.

The company has 5 production bases, 1 industrial engineering research center, 1 provincial metal paste engineering research center, 2 import and export trading companies and 7 sales service department offices, so the overall strength ranks first in the aluminium pigments industry in China.

Sunrise's various paste, powder and pelletized aluminium pigment products reach an annual production capacity of 20,000 tons. They are widely used in automotive, home appliances, 3C products, toys, ships, printing inks, leather and other industries. Sunrise's Spherical aluminum powder reach an annual production capacity of 50,000 tons. It's widely used in space flight, construction industry, automotive, furniture, electric appliance and other industries.

铜金粉制造工艺

铜金粉是一种以铜锌为主原材料，经过熔炼、喷粉、球磨、抛光等工序加工的极细微的鳞片状金属粉末，又称铜锌金粉，俗称金粉。

铜金粉的特性

❶ **铜金粉的组成与色相**
铜合金因成分不同，表面可呈赤红、金黄、白甚至紫色，色泽随着锌含量的不同，铜金粉呈现多种不同的色相，含锌量低于10%产生淡金效果，称为红金；10%—25%产生富淡金效果，称为青红金；25%—30%产生富淡金效果，称为青金。

❷ **铜金粉的微观形貌及粒度发布**
铜金粉粒子为鳞片状结构，在扫描电镜下观察发现，铜金粉的鳞片多数是不规则的，边缘呈锯齿形状，少量是较为规则的圆形。这种粒子结构决定了它有与被涂物平行排列的特性。

❸ **铜金粉的光学特性**
作为金属颜料之一的铜锌合金粉最主要的一个特点就是有"随角异色"现象，是指随着观察角度的不同能闪现出不同明度、饱和、色相的光学现象，是颜料对入射光的不同散射和反射方式引起的，该现象与金属表面的平整度有关，材料表面越平整，亮度就越高。影响铜金粉印金光泽度的因素是多方面的，其中铜金粉的微观形貌、片厚及其在粘结料中的定向排列起着至关重要的作用。

铜金粉使用须知

❶ 通常，普通的铜金粉均具有良好的飘浮性能，建议不必加入润湿剂或分散剂，否则会降低其飘浮性（金属效果）。

❷ 如果为了特意调整金粉的飘浮性能，可适当降低其飘浮力（加入0.1- 0.5%柠檬酸）。但这样会降低金属效果。

❸ 若通过调整施工粘度和干燥时间仍不能获得理想的光学效果，即颜料粒子未能有较好的定向排列；则可以加入少量表面润滑剂和流平剂。

❹ 一般来说，铜金粉的再分散性能较好，若发现有沉淀现象，可在配方中加入＜2.0%的抗沉剂或触变剂，如膨润土、气相二氧化硅等。

❺ 铜金粉及其成品的储存：铜金粉及其制成品均应在室温及干燥的环境下储存；未使用完的铜金粉应立即密封。否则，铜金粉长时间暴露于空气中会因氧化而变质。

Bronze powder manufacturing process

Bronze powder use copper, zinc as the main raw materials, through smelting, spray powder, ball grinding and polishing process of extremely slight flake metal powder, also called copper zinc alloy powder, commonly known as gold powder.

The characteristics of bronze powder

❶ *Bronze powder and forming of hue*
According to different composition, the copper alloy surface can show latosolic red, gold, white or even purple. The different zinc contents make the bronze powder different hue. Containing zinc is less than 10% produce pale gold effect, called pale gold; 10-25% produce rich light golden effect, called rich pale gold; 25% -- 30% produce rich light golden effect, called rich gold.

❷ *Microstructure and particle size distribution of bronze powder*
The bronze powder particles are flaky texture, under the observation of scanning electron microscopy, the flakes most are irregular, and its edges are zigzag shape, some a few is relatively regular circle. This particle structure makes it can arranged parallel with the painted objects.

❸ *Bronze powder optical properties*
The bronze powder has the angle- following color dissimilation effect, it is relate to the smoothness of the metal surface. The Microstructure, coating thickness and particle size distribution all plays a vital role to influence the glossiness of printing gold.

Notice for use bronze powder

❶ Bronze powder has good floatability, and the floatability will decrease if add to any wetting agent or dispersing agent.

❷ If want to adjust the floatability of bronze powder, can decrease the floatability properly (add 0.1- 0.5% citric acid), but it will reduce the metallic effect.

❸ If adjust the applicable viscosity and drying time cannot achieve ideal optical effect (the bronze powder particles do not well directional arra- nged), can add a few surface lubricant and leveling agent.

❹ Generally, bronze powder has good redispersion. Once precipitated, can add some anti- settling agent or thixotropic agent(＜2.0%), like bentonite or fumed silica, etc.

❺ The bronze powder and its products should be stored in a dry place at room temperature. Close the drums' cover of bronze powder soon after using it, in case of oxidative deterioration.

通用型铜金粉系列
Common bronze powder

性能参数 *Parameters*

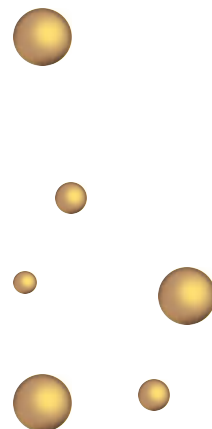| 型号 Grade	色光 Shades	中位径 D50-Value (μm)	水面遮力 Water Coverage (cm²/g)	主要用途 Application
300目 (Mesh)	红光 Pale gold 青光 Rich gold	30.0- 40.0	≥1800	光泽好，金属质感强。主要适用于飞金、金漆、织物印金，也适合用于丝网印刷。 printing with bright and brilliant metallic cffect. Coarse series for dusting, gold paint, textile printing, andscreen .
400目 (Mesh)	红光 Pale gold 青光 Rich gold	20.0- 30.0	≥3000	
600目 (Mesh)	红光 Pale gold 青光 Rich gold	12.0- 20.0	≥5000	
800目 (Mesh)	红光 Pale gold 青红光 Rich pale gold 青光 Rich gold	7.0- 12.0	≥4500	根据各种不同的细度，用于凹印、胶印、凸印等不同要求的印刷需要。 Suit for gravure printing offsct printing and letterpress so on according to different request of particle size.
1000目 (Mesh)	红光 Pale gold 青红光 Rich pale gold 青光 Rich gold	≤7.0	≥5700	
1200目 (Mesh)	红光 Pale gold 青红光 Rich pale gold 青光 Rich gold	≤6.0	≥8000	适用于各种印刷，也可以制作金墨，遮盖力强，印刷适性好。 Suit for all kind of printing and being making gold ind,with good covering power ang print adaptation.
凹印粉 Gravure	红光 Pale gold 青光 Rich gold	7.0- 11.0	≥7000	无论光度、遮盖力、上印性能、金属质感都能达到最佳效果。 Suit forgravure printing, the gloss, Covering power and metallic cffect canreach ideal.
胶印粉 Offsct	红光 Pale gold 青光 Rich gold	3.0- 5.0	≥9000	油墨级超细粉，极强的遮盖力、转移性，使印品达到理想效果。 Rated as ink grade with extra covering power, transfer, and can make ideal effect for presswork.
凹印金条 Gravure Stripes	红光 Pale gold 青光 Rich gold	凹印粉制作 Further made on base of Gravure		无尘操作。特亮，遮盖力强，上印性能好。 Extra gloss. Very high covering power and good printability and no dust caused.
特殊规格 Special grade		≤80	≥600	客户需要可定制的粗粉系列产品。 Made upon request of crstomers.
		≤70	1000-1500	
		≤60	1500-2000	

水性环保铜金粉系列
Environment-friendly water-based bronze powder

特性

本系列铜金粉表面经二氧化硅和有机表面处理剂双层包覆处理，包膜厚度均匀，密实，不影响金属粒子的金属光泽，在长时间的储存过程中，水或碱性物质不易渗透包覆层，不产生腐蚀和色相变化的现象。产品可广泛应用于水性涂料体系中。

Characteristics

Our water- based bronze powder use silica and organic surface modifiers double- coated, make the film has uniform thickness, close- grained capability and do not influence met - allic luster.During its long - term storage, water or alkali material is hard to permeate the coat, and no corrosion and color change.The water- based bronze powder is widely used in the water- based coatings system

性能参数 *Parameters*

型号 Grade	色光 Shades	中位径 D50-Value (μm)	水面遮力 Water Coverage (cm²/g)
300目 (Mesh)	红光 Pale gold 青光 Rich gold	30.0- 40.0	≥1600
400目 (Mesh)	红光 Pale gold 青光 Rich gold	20.0- 30.0	≥2500
600目 (Mesh)	红光 Pale gold 青光 Rich gold	12.0- 20.0	≥4600
800目 (Mesh)	红光 Pale gold 青红光 Rich pale gold 青光 Rich gold	7.0- 12.0	≥4200
1000目 (Mesh)	红光 Pale gold 青红光 Rich pale gold 青光 Rich gold	≤7.0	≥5500
1200目 （Mesh）	红光 Pale gold 青红光 Rich pale gold 青光 Rich gold	≤6.0	≥7500
特殊规格可定制 Special grade, Made upon request of customers.		≤80	≥500
		≤70	1000- 1200
		≤60	1300- 1800

主要用途
Application

水性铜金粉广泛应用于塑胶、硅胶、印刷、印花、皮革、玩具、家庭装饰、化妆品、工艺品、圣诞礼品等行业。
The water- based bronze powder is widely used in plastic, silica gel, printing, textile printing, leather, toy, home decoration, cosmetic, crafts, Christmas gifts and so on.