

2022

# 廣信材料集團簡介

打造UV行業航母級企業

創新引領發展,科技成就收穫

KuangShun Materials Group Company Profile

Create a leader in the UV industry

Innovation leads development,

Technolog build dreams.



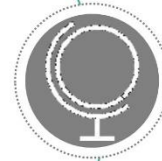
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# Company introduction



Jiangsu KUANGSHUN Photosensitive New Materials Co., Ltd. was established in 2006 and issued shares in August 2016.

Stock abbreviation: KUANGSHUN Materials, stock code: 300537.

KUANGSHUN Materials is mainly engaged in the research and development, production and sales of special inks and special coatings. It has independent research and development capabilities for high-performance special inks and special coatings.

It is a leading manufacturer of special inks and special coatings in China.

KUANGSHUN material is the vice-chairman unit of the China Photosensitive Association Curing Professional Committee, the vice-chairman unit of the National Printed Circuit Committee, the vice-director unit of the National Printed Circuit Standardization Technical Committee, and the vice-chairman unit of the Electronic Manufacturing and Packaging Technology Branch of the Chinese Institute of Electronics. He has successively been responsible for revising or leading the drafting of several professional standards such as the National Ministry of Industry and Information Technology's Solder Mask Ink Industry Standards, China Printed Circuit Industry Association Industry Standards, and Military Printed Board Injection Manufacturing Acceptance Standards, and has made important contributions to the standardized development of my country's special ink industry.



## Development History



In 2021, acquire 100% equity of Dongguan Hanpunuo to build South China R&D Center

In 2021, Jiangxi Guangzhen will be established to build a production base in South China

In 2020, set up holding subsidiaries Shenzhen Lejian (55%) and Jiangyin Guangqing (60%)

In 2018, Taiwan Guangzhi New Materials Co., Ltd. cooperated with technology to develop photoresist

In 2018, acquired 100% equity of Sunshine Hunan Sunshine Company

In 2017, acquired 100% equity of Guangzhou Guangxin and 60% equity of Shanghai Chuangxing

In 2017, acquired 100% equity of Jiangsu Hongtai

In 2016, the company's stock was listed on the GEM of Shenzhen Stock Exchange. Listed (SZ.300537)

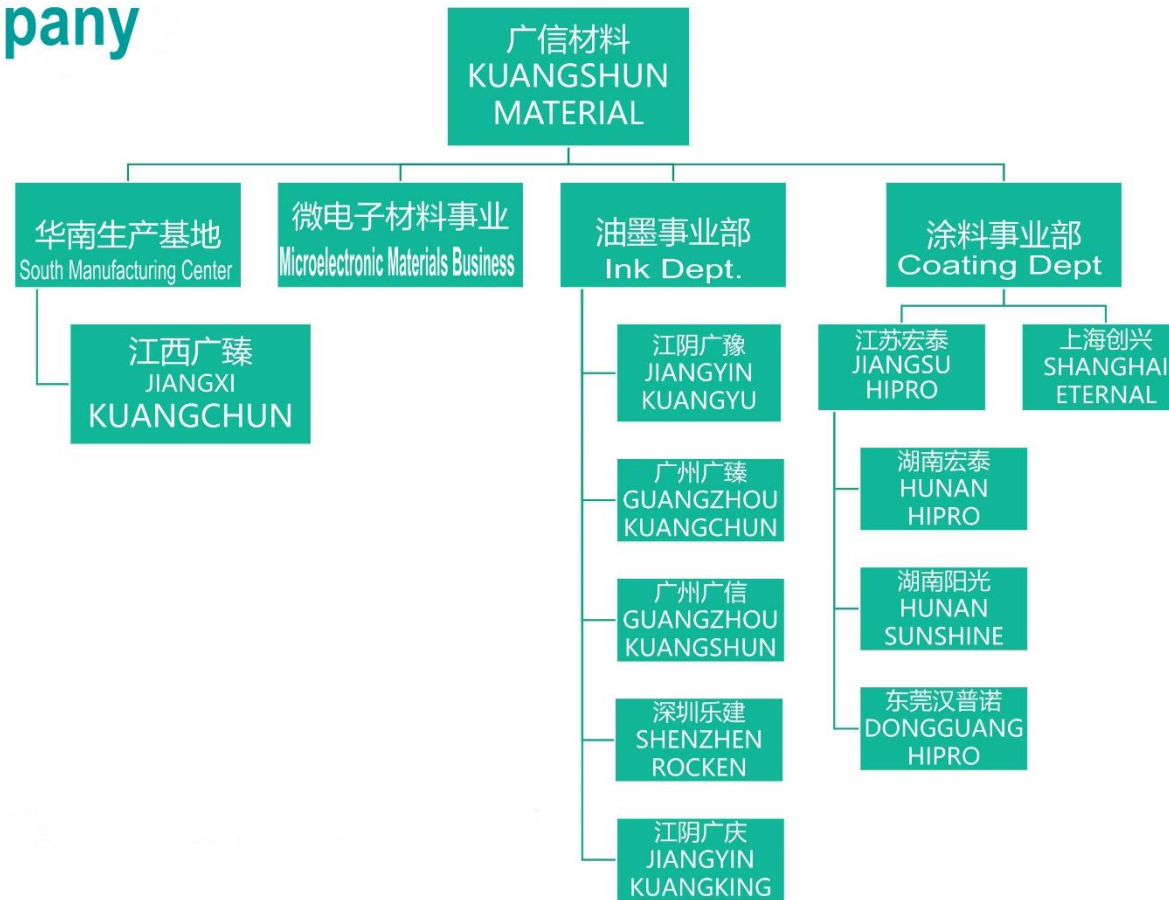
In 2014, Excellent Postgraduate Workstation, Provincial PCB Engineering Center, UV Curing Engineering Center

In 2013, won the title of "Jiangsu Private Technology Enterprise"

In 2009, it was rated as a high-tech enterprise

In 2006, the company was established

# Group Company

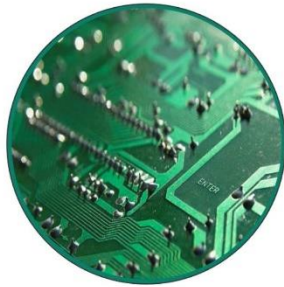




## Main product

(主营产品)

# Main business



## Special Ink

- PCB photosensitive solder resist ink
- PCB photosensitive circuit ink
- PCB photosensitive character ink
- The latest dip-coating liquid photosensitive etching ink
- LDI special inner layer coating ink
- Precisely processed protective ink
- Thermosetting insulating protective ink

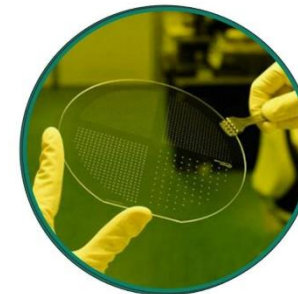
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## Coating materials

- UV Curable PVD Coatings for Consumer Electronics
- Glass AF nano anti-fingerprint coating
- High leveling anti-fouling mirror coating
- AG paint
- Auto Parts Coatings
- Coatings for high-end cosmetic boxes
- UV curing carbon fiber protective coating
- High wear-resistant coating for PVC plastic floor

...



## Photoresist and supporting materials

- Flat panel display photoresist:  
(TFT-LCD, OLED, TN/STN LCDTP, etc.)
- Photoresist for integrated circuits:  
(g-line, i-line, packaging, etc.)
- Photoresist supporting reagents:  
(diluent, developer, rinse, stripper, etching solution, etc.)

...



事业部	产品 Products	用途 Application	Capa
PCB Ink	PCB油墨 PCB Photosensitive Ink	PCB solder mask protection, PCB circuit etching, PCB character mark, precision machining protection	无锡: 12,000t/a 龙南: 16,000t/a
UV Coating	UV 涂料 UV-curable coating	Vacuum plating coatings for consumer electronics, Coatings for car lights, Glass AF nano anti-fingerprint coating	长沙: 10,350t/a 龙南: 15,000t/a
Photoresist and supporting materials	正性光刻胶 Positive Photoresists	TFT-LCD Array, TN/STN-LCD, TP, LED, g-Line, i-Line...	无锡: 30t/a 龙南: 2,000t/a
	光刻胶稀释剂 Photoresists thinner	光刻胶稀释; Photoresist dilution;	龙南: 5,000t/a (可扩产)
	蚀刻液 (铝蚀刻液、铜蚀刻液、银蚀刻液) Etchant (Al-Etchant、Cu-Etchant、Ag-Etchant)	Al/Mo, Cu/Mo circuit etching; OLED process silver etching;	
	剥离液 Stripper	Al/Mo、Cu/Mo工艺光刻胶去除; Al/Mo, Cu/Mo process photoresist removal;	
	显影液 Developer	适合对BM、RGB、OC、PS光刻胶显 Suitable for developing of BM, RGB, OC, PS photoresist;	
	边胶清洗剂 Edge Bead Remover	边胶清洗剂; Edge glue cleaner;	
	玻璃清洗剂 Glass Cleaner	玻璃表面污染物清洗剂; Glass surface contaminant cleaning agent;	
	抛光液 (硅片抛光液、130-14nm 铜抛光液) polishing liquid Si Slurry、Cu Slurry	硅片粗抛光、中抛光、精抛光; 130-14nm 集成电路制造, 平坦化;	

Coarse polishing, medium polishing and fine polishing of silicon wafers;  
130-14nm integrated circuit manufacturing, pla

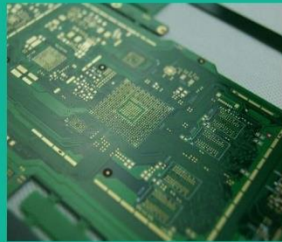


# Production Base in Jiangxi Province



# Main product application areas

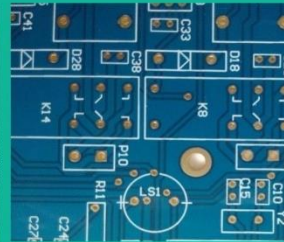
PCB ink



PCB solder mask ink



PCB etching resist ink



PCB marking ink



Precision machining protection



LED backlight



printing ink

Electronics

Car Painting

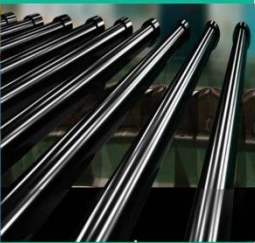
cosmetic packaging

Sports Equipment

PVC plastic floor

Metal substrate protection

UV Coating



Jiangsu Hongtai: China's first industrialized UV coating developer and patent holder



# Main application cases of UV coating products

Effect of imitating anodic oxidation  
仿阳极氧化效果效果



Huawei enjoy6

HONOR play5A

Free bottom process  
免底工艺



Huawei Honor 3X



Huawei Mate2

Thin coating process  
薄涂工艺



Huawei P8 Lite



Huawei Honor 5A

NCL/CL coating  
NCL/CL涂料



OPPO A77

Narrow side vibration and wear resistance  
窄边振动耐磨



Lenovo P1



Huawei Honor 6x



Huawei Mate 8/9

3D镭雕光哑



Lenovo K5

3D laser engraving



OPPO A59

NANO Anti-fingerprint protective coating  
抗指纹纳米保护涂料



# Main customers

## PCB ink customers



## UV coating customers

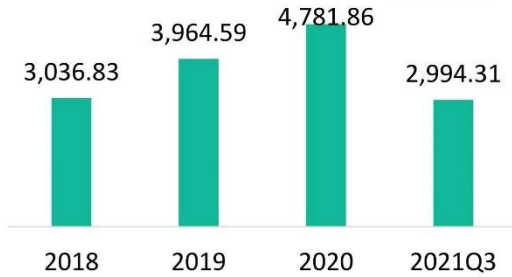




## Product development and advantages



Jiangnan University-Jiangsu Guangxin Photosensitive New Materials Collaborative Innovation Laboratory



The company's R&D expenditures over the years



### R & D team

The company has a R&D team of 206 people, Among them, there are 7 doctors and 22 masters, 131 people with bachelor degree, 1 senior technical consultant in Taiwan.



Jiangyin Doctoral Workstation  
Jiangsu Postdoctoral Innovation Practice Base  
Excellent Postgraduate Workstation of Jian

### Proprietary technology

48 authorized invention patents,  
48 utility model patents,  
1 design patent.

### Patents

R&D Team

core competitiveness

### Coatings and Inks Core Formulations

The company owns a variety of special The ink formulation belongs to the company's core technology. It's company's core competitiveness

**行业标准:** 《印制板用标记油墨》、《印制板用阻焊剂》、《印制板用光成像抗蚀电镀油墨规范（军用）》、《印制板组件用电绝缘材料的性能和鉴定（国家标准）》、《永久性阻焊和挠性覆盖材料的性能和鉴定（国家标准）》、《导电浆料（国家标准）》、《印制板阻焊膜加工指南》、《印制板用阻焊剂规范》、《导电银浆》、《印制板用阻焊剂》

**行业协会:** 中国电子学会理事；中国电子学会生产与封装技术委员会副会长；全国印制电路专业委员会副主任；全国印制电路标准化技术委员会副主任；中国电子电路行业协会常务理事单位、副秘书长、标准化委员会主任

**荣誉勋章:** 2016年江阴市十佳科技创新先进单位，江阴市十佳民营科技企业，无锡市2017年度A股上市公司资本经营奖，江阴市优秀科技工作者之家



## Product production process and quality control

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# 1) Compounding



Executive standard:

Implement 1 person to feed and 1 person to supervise, strictly follow the ingredient list, and each ingredient is finished. Two people need to check the records before proceeding to the next step!

## 2) Dispersion



### Executive standard:

- (1) The dispersion time is controlled at 20-30min, and the ink temperature is controlled at 40-45°C;
- (2) After dispersion, the time and weight need to be recorded and checked. After confirmation, it can be rotated to the next process.



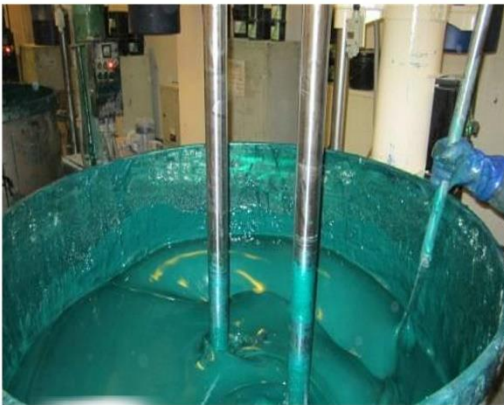
### 3) Grinding



#### Executive standard:

- (1) It is necessary to check the weighing before going on the machine, and then go on the machine after confirming that it is correct;
- (2) After grinding, the fineness of scraping is required, and it is OK when it reaches 8  $\mu\text{m}$ ;
- (3) After the fineness is OK, it is necessary to weigh and record the weight, grinding time and loss, and confirm that it is correct and then it can be rotated to the next process.

## 4) Dispersion



### Executive standard ↴

- (1) Weighing check is required before post-dispersion, and the machine can be used only after confirmation;↴
  - (2) The ink temperature is controlled at 40-45°C;↴
  - (3) Weigh the diluent in strict accordance with the quality inspection and viscosity adjustment requirements (one person feeds the material and one person monitors the weighing).↴
- Supervisor), after weighing the two people to confirm and record together before adding!↴

## 5) Filtration



Filter requirements.

- (1) Weighing and checking are required before filtering, and the machine can be used only after confirmation;
- (2) Use a 300-mesh filter for filtration, and use a filter for each batch of ink.

## 6) Packaging



Packaging standard:

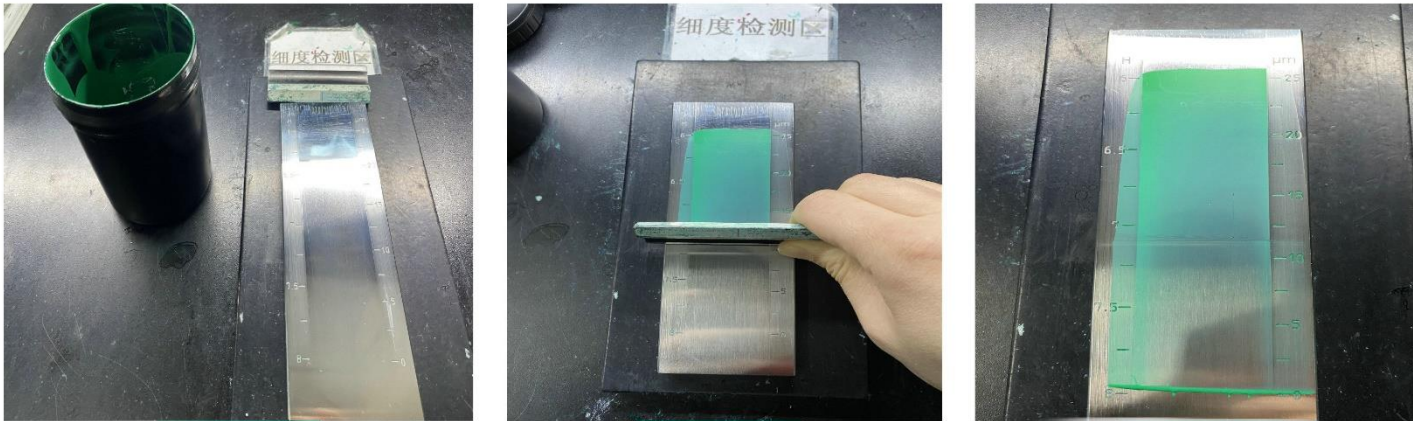
- (1) The allowable error of the main agent is 1 KG packaging:  $920\text{g}+5\text{g}$ , 5KG packaging:  $4600\text{g}+10\text{g}$ ;
- (2) The allowable error of curing agent is 1 KG package:  $80\text{g}+2\text{g}$ , 5KG package:  $400\text{g}+2\text{g}$ ;
- (3) After packaging, count the quantity and calculate the weight, and record it. Only after confirmation can it be put into storage.



# Quality inspection Raw material and product testing equipment

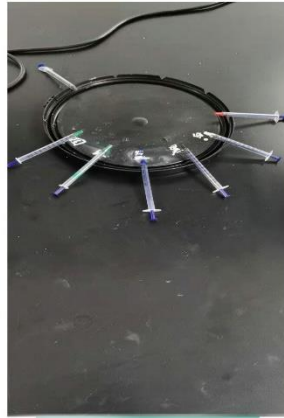


## 1) Fineness detection---(0-25 $\mu$ m) scraper fineness meter



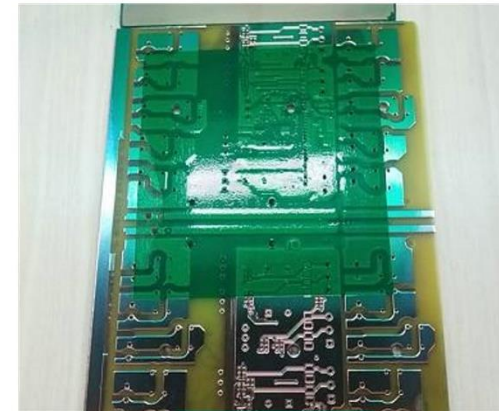
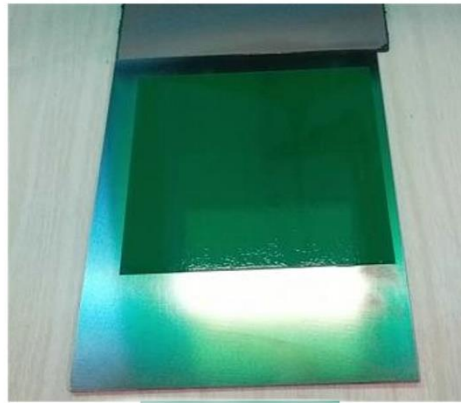
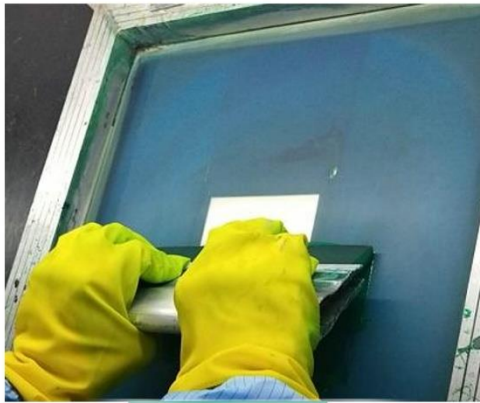
The fineness standard is controlled within 8 $\mu$ m

## 2) viscosity testing



Using TOKI viscometer, No. 2 rotating needle, temperature 25°C, constant temperature for 15-20 minutes, viscosity standard 18-23pa.s.

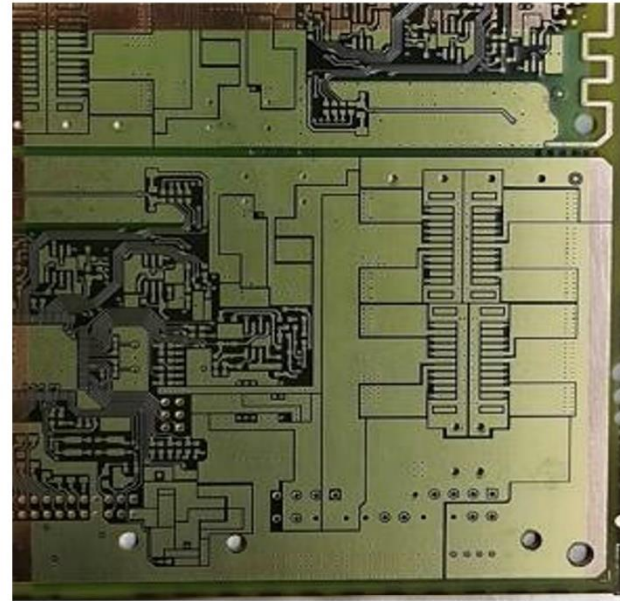
### 3) Printing Appearance Inspection---Panel Making



Using 36T (90 mesh) wire mesh (183um opening, wire diameter 90um) or 43T (110 mesh) wire mesh (149um opening, wire diameter 80um), the material is printed on a 20Z thick copper plate and preliminarily cured.



### 3) Printing appearance inspection



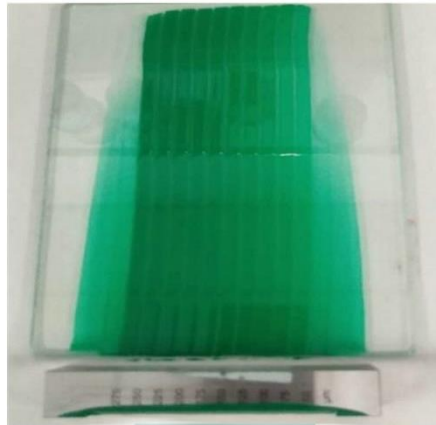
Screen printing, no bubbles, no pinholes, exposed copper, foreign matter, bright and smooth surface.

## 4) Color and gloss test



Print the same type of color matching sample of the ink in production and the quality department on the same piece of light copper plate, Visual inspection or comparison with the aid of a colorimeter, the condensed color difference value is less than 1.5.

## 5) Sag Performance Test



Scrape the ink on the glass with a sag, put it in an oven at  $75^{\circ}\text{C}$  for 30 minutes, and observe the bottom. Check whether the three inks on the surface are flowing and touching.

## 6) Testing of adhesion



Temperature setting



Board-making



Determination

After cooling the post-baked board, apply flux and put it in a  $288 \pm 5^\circ\text{C}$  tin bath  
10sec\*3 times, use 3M (600#) tape at the same position  
(length 30mm and H) to pull the test three times,  
Observe whether the ink falls off.





## Product storage and use methods

(存储、使用方法)

## Product storage method

The product needs to be stored in a cool, dry and well-ventilated environment, and the optimal temperature should be controlled at 20°C-25°C, away from fire sources and incompatible substances. When the storage temperature is lower than 20° C or higher than 25°C, mainly during transportation, especially in summer and winter, the temperature will cause large fluctuations in the viscosity of the ink, so it needs to be placed in a constant temperature warehouse for 12 hours. In the above, the ink can be used after the ink has returned to a stable value, which can reduce the influence of viscosity fluctuation on the printing performance during use.

## Product use method

The thermosetting insulating and protective ink is composed of two components, including the main agent and the curing agent.

- 1) Mix and stir, add the curing agent to the main agent at one time, and use a special ink mixer or a vacuum mixer to stir evenly (stir for more than 30 minutes)
- 2) Let it stand for about 20-30 minutes after stirring, so that the air mixed in when the ink is stirred can escape and prevent problems such as poor de-foaming and pinholes during printing.
- 3) Viscosity test. Before use, please test the viscosity of each batch at least once per shift. The viscosity should be controlled at 15-23pa.s. If the viscosity is lower than 15, please suspend use. When the viscosity is higher than 23, a certain proportion should be added appropriately diluent to adjust the viscosity to the target median before use.
- 4) Printing, according to our original operating experience, it is recommended to use 36T (90 mesh) wire mesh (183um opening, wire diameter 90um) or 43T (110 mesh) wire mesh (149um opening, wire diameter 80um)
- 5) Curing. After printing, enter the oven at 150 °C for 30 minutes to cure completely. The cured paint film has high hardness, good adhesion, and good heat resistance and chemical resistance.

Because the industry requirements are different, the above parameters are for reference only.

# Product Application Security

## Precautions when using

- Wear appropriate personal protective equipment (mask, goggles, protective gloves).
- First aid methods for different exposure routes:

### Inhalation:

- Remove the source of contamination or move the patient to fresh air.
- Seek medical attention immediately. skin contact:
- Rinse the contaminated area with water and soap for 5 minutes until the contamination is removed.

### Eye contact:

- Wipe or suck up excess chemicals as soon as possible.
- Immediately open the eyelids, rinse gently with running warm water for 15 minutes, until the contaminants are removed.

### Ingestion:

- When the patient is about to lose consciousness or has become unconscious or temperature, do not feed anything.
- Give the patient 240-300 ml of water to balance the release of compounds in the stomach.
- If the patient vomits spontaneously, the patient should be leaned forward to reduce the risk of inhalation, and the patient should be rinsed and given water repeatedly.
- Seek medical attention immediately.



## Product Package

1) Our current available packaging methods: 1KG canned, main agent: hardener = 0.92/0.08;

5KG canned, main agent: hardener=4.6/0.4

If the monthly consumption is greater than 1 ton, we recommend 5KG packs.

The 5KG bag is a packaging method adopted to meet the requirements of the national environmental protection policy.

The weight of solid waste is small, which effectively reduces the cost of solid waste treatment by 50-70%.

2) In order to achieve better confidentiality, we recommend using blank carton



## Photovoltaic UV Coatings Department



In order to better cooperate with the development, application and delivery of LONGi Green Energy Technology products, our company plans to set up a "Photovoltaic Coatings Division", with Mr. Mao as the general commander, 3 R&D personnel, 2 business service personnel, and 1 order delivery tracking person. The team's first job is to cooperate with PV product development and delivery.

Our vision (愿景)



**技精于专，做于细；  
业成于勤，守于挚。**

**Skilled in specialization, doing in detail;  
Success in diligence, keeping in earnest.**

Contact us (联系我们)



微信二维码

廣信材料集團

股票代码: 300537

KUANGSHUN Materials Group

Stock code: 300537

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