

## TDS of Nanoscale Colored Specular Ink 纳米级彩色高光镜面油墨产品说明书

### Product Description

Nanoscale Colored Specular Ink ( **Model: MGT-MRI-67B / MGT-MRI-33B** ) is a blue high-gloss specular ink suitable for surface treatment and decoration of 3C electronic products, household appliances, smart home, high-end decorative parts, control panels and craft gifts and other fields. It has excellent reliability performance and excellent adhesion to most organic materials and inorganic materials such as glass and ceramics. It has the advantages of screen printing, spraying, double 85 test does not fall off, conforming to 3C certification, can be matched to shade the black background, can be hot bending processing after forming and does not destroy the mirror effect and so on. The product can be used in the glass of the back cover of mobile phone and other parts that need specular effects, replacing the traditional electroplating process, greatly saving the cost. After screen printing, this product has excellent blue specular reflection effect on PET, PC, PMMA, glass and ceramics; At the same time, the product can be used for spraying processing after reasonable dilution, after high temperature tensile, the whole appearance is no cracking, no discoloration; It retains excellent appearance after high temperature and high humidity test.



↑ ↑ ↑  
Visual Direction



The blue specular effect which applied to the back cover of mobile phone

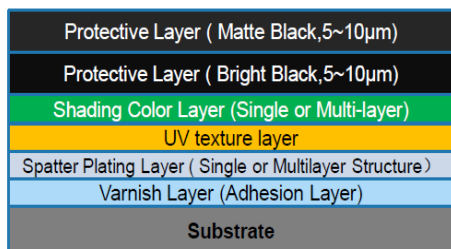
Curing conditions : 105°C \* 30min

Applicable substrates : PET, PC, PMMA, glass , ceramics etc.

## Product application structure and comparative advantages

### Traditional spatter plating structure VS Nanoscale Colored Specular structure

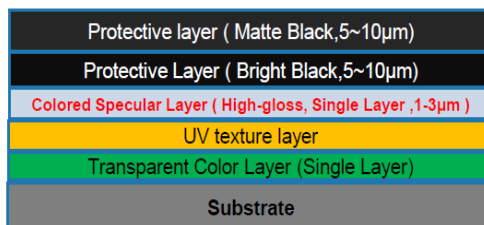
Traditional high-gloss layer structure  
( spatter plating structure )



#### Disadvantages of traditional spatter plating structure:

- It is prone to uncontrollable shedding
- Easy to crack
- Pattern forming process is complex  
( first sputter plating and then etching )
- Conformity rate is low
- Comprehensive cost is high

Nanoscale Colored Specular structure  
( Direct screen printing / spraying structure )



Glass and ceramic substrate,  
UV transfer layer need to be  
secondary lamination

The plastic substrate can be  
printed directly and formed by  
secondary hot bending

#### Advantages of Nanoscale Colored Specular structure :

- Simplified the processing
- Resin adhesion is good
- Simple pattern forming (direct screen printing/spraying)
- The secondary bending molding does not crack
- Comprehensive cost is low

## Curing parameters and reliability test

Layers	Product model	Curing agent	Curing agent addition ratio	Curing parameters	Application process	Remarks
Nanoscale Colored Specular Layer ( 1 <sup>st</sup> layer )	MGT-MRI-67B / MGT-MRI-33B	Harder-122	2% / 4%	105℃*30min	Screen printing /spraying	The curing conditions vary with different materials. ( Substrate: PET、PC、PMMA 、 Glass, ceramics, etc. )
Bright Black Layer (2 <sup>nd</sup> layer)	BB-L2-601	M-4210	10%	105℃*30min	Screen printing /spraying	
Matte Black Layer (3 <sup>rd</sup> layer)	MB-L3-504	M-4210	10%	105℃*60min	Screen printing /spraying	

Test Items	Test conditions	Test time	Assessment content	Test results
High temperature and high humidity	85℃/RH 85%	120H	Adhesion 5B, no color difference, no water, no cracking, no bubbling	PASS
High temperature and high humidity	60℃/RH 90%	120H	Adhesion 5B, no color difference, no water, no cracking, no bubbling	PASS
Salt spray test	5% NaCl	24H	Adhesion 5B, no color difference, no water, no cracking, no bubbling	PASS
Thermal Shock Test	-40℃*30min 80℃*30min	1H	Adhesion 5B, no color difference, no water, no cracking, no bubbling	PASS
Poached test	85℃	1H	Adhesion 5B, no color difference, no water, no cracking, no bubbling	PASS

## Screen printing/spraying process reference

Product Model	Specific gravity (g/cm <sup>3</sup> )	Wet film thickness (μm)	Screen printing area (m <sup>2</sup> )
MGT-MRI-67B	1.67	5 (350~400 mesh)	120
MGT-MRI-33B	1.25	5 (350~400 mesh)	160

Product Model	Specific gravity (g/cm <sup>3</sup> )	Wet film thickness (μm)	Spraying area (m <sup>2</sup> )
MGT-MRI-67B	1.67	10 (50% diluent)	96 (effective spraying area 80%)
MGT-MRI-33B	1.25	10 (50% diluent)	128 (effective spraying area 80%)

**Note: Our company can provide blue, red, yellow and a series of color of high-gloss specular inks, welcome to inquire, welcome to customize.**

Disclaimer: The information provided in this Technical Data Sheet (TDS) is compiled in good faith and obtained using procedures performed at Mogreat company and to the best of our knowledge. The information on this TDS has been updated on the date printed, and latest versions can be obtained upon request. The customer is responsible for conducting tests to determine whether our products are compatible with the customer's process and specific applications.

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