NEW: Series 140-6125

New IR-transparent, silicone-free 2C screen printing ink for glass

Our new Series 140-6125 is a solvent-based, silicone-free, two-component screen printing ink based on highly resistant materials. Its characteristics enable excellent results from overprinting in technical applications – with our Series 632 glass printing ink, for example.
The printed ink film of Series 140-6125 is permeable to infrared rays but blocks visible light. This makes Series 140-6125 ideal for the functional coating of components controlled by proximity sensors, such as infrared panels, screens and displays, and remote-controlled devices and systems.

Key characteristics

- Maximum adhesion when combined with adhesives and decorative inks
- Transmits infrared rays, blocks visible light
- Excellent resistance
- Easy-to-operate system
- Modern, silicone-free formulation

Most suitable applications

- Optimized for demanding flat glass applications
- Perfect for infrared panels, screens and displays
- Ideal for glass cover plates
- Consumer electronics: cover plates, screens
- Household electronics: kitchen utensils, scales
- Telecommunications: cell phones, set-top boxes

Substrates

Substrate	Rating	Advice
Glass / ceramics	★★★★★	

Legend				
	★★★★★	Very well suited	★	Detailed pre-tests necessary

Properties / Characteristics

Feature	Rating	Hints
Alcohol and gasoline resistance	★★★★★	
Gloss	★★★★★	
Lightfastness	★	
Pigmentation	★★★★★	
Temperature resistance	★★★★	
Drying	★★★	
Water resistance	★★★★	
Weather resistance	★	

Legend				
	★★★★★	Excellent product properties	n/a	No information available
	★	Product properties not available		

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Product Range

MS Basic Colors

Article	Color	HF	PF	SF
140-6125-29/1	IR-colorant, black		•	•
140-6125-05	Clear varnish for glass	•	•	•

HF Free of halogens **PF** Free of PAH **SF** Silicone-free

Note: all abbreviations used in this chart are explained in detail on the last page of this data sheet.

Auxiliaries

Thinner	Series 600-037	**Addition ratio**	5–20 % by weight if needed
Retarder	–	**Addition ratio**	–
Hardener	Series 600-HVA	**Addition ratio**	3 % by weight
Cleaner	Series 600-URS		

Note: a detailed overview of all available auxiliaries can be found in a separate data sheet.

Processing

Mixing ratio

Depending on the desired result, we recommend a mixing ratio of clear varnish and colorant of 70:30 (more opaque) to 99:1 (more glazing).

Processing

1. Thoroughly stir the clear lacquer, preferably using a machine, to prevent flow issues.
2. Add the IR colorant to the clear lacquer and mix (stir), preferably using a machine.
3. Add 3% of adhesion promoter Series 600-HVA and mix (stir), preferably using a machine.
4. Usually, no thinner is required.
5. Print with Series 140-6125.
6. Intermediate drying: approx. 5 minutes at 80–100 °C. Drying time may vary depending on the layer thickness and the dryer/oven used.
7. Overprint with decorative ink.
8. Final drying/curing: 20 minutes at 140 °C; for high resistance requirements: 30 minutes at 180 °C.

Mesh

All commercially available polyester mesh 43.80 to 140.31 can be used. Application with a 43.80 Y mesh is not suitable for all sensors due to the reduced IR transparency; however, it may be useful for special applications (e.g. curing an IR-sensitive adhesive through the ink layer).

Stencils

All commercially available stencils can be used.

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Drying

The final drying or curing of Series 140-6125 depends on the layer thickness, the substrate used, and any auxiliaries. The series contains a hardener that becomes active or reacts at temperatures starting around 120 °C. Complete curing occurs over 20 minutes at approximately 140 °C. Insufficient temperatures result in incomplete curing, which can negatively affect the mechanical and chemical properties of the final product.
For applications requiring particularly high resistance, we recommend final drying for 30 minutes at 180 °C.

Parameters (without the addition of retarder):

Intermediate drying: approx. 5 minutes at 80–100 °C
Final drying / curing: 20 minutes at 140 °C; for high resistance requirements: 30 minutes at 180 °C

Yield

Depending on the color, a yield of 45–65 m^2/kg can be expected with the ink set to be ready for printing when using a 120.34 mesh.

Specific features

Please note that the IR ink may stain the squeegee rubber, but this does not affect its properties. Nonetheless, to avoid staining other print jobs, the squeegee should be used exclusively for printing with the IR ink.

Others

Delivery	1 kg / 5 kg
Certificates / Standards	https://www.printcolor.ch/en/certificates.html
Others	Stir well before use.
	Information on shelf life can be found on the cover label.

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Transmission spectrum

Figure 1 shows that Series 140-6125 has very high opacity in the visible light spectrum with very good IR transparency; the x-axis shows the light transmission in %, the y-axis the wavelength of the light λ in nanometers (nm):

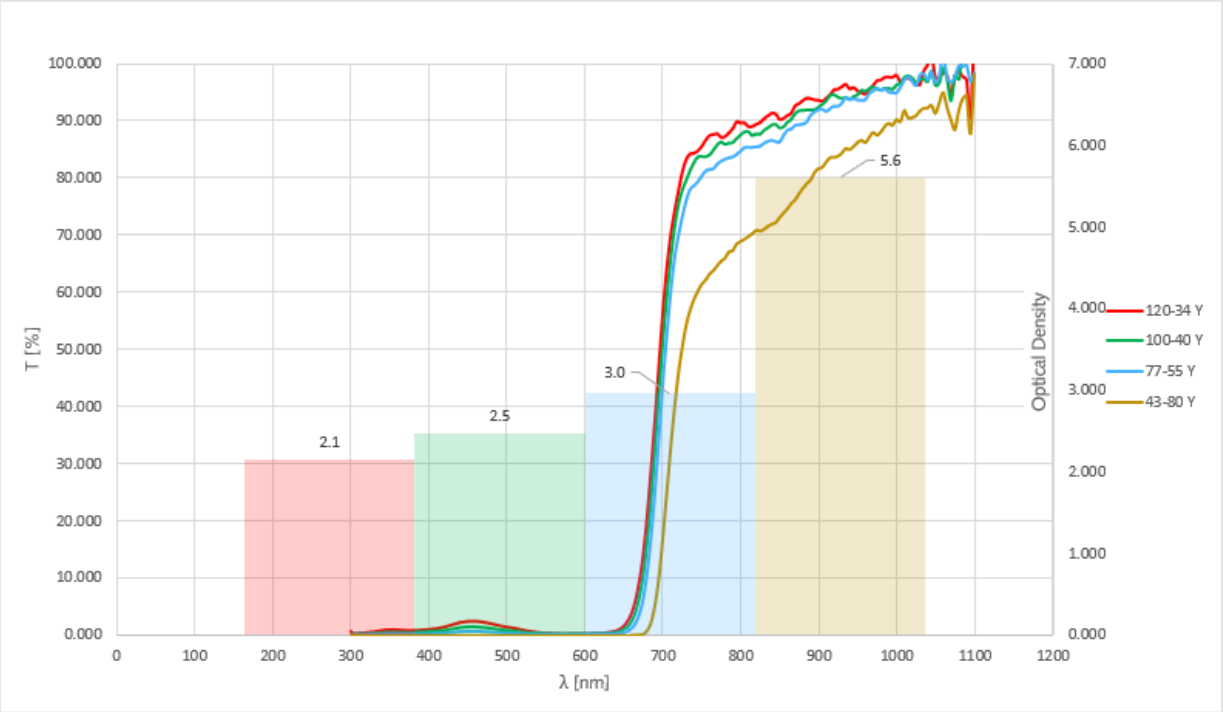

Figure 1 Opacity achieved and IR transparency with different meshes (clear varnish + colorant 70:30 with 3 % Series 600-HVA) Application with a 43.80 Y mesh is not suitable for all sensors due to the reduced IR transparency; however, it may be useful for special applications (e.g. curing an IR-sensitive adhesive through the ink layer).

Basic Color Systems

HP Basic Color Mixing System with high pigmented basic colors.

Safety Information

Actual Material Safety Data Sheets according to EC-Regulation 1907/2006 are available for all products mentioned in this data sheet.

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Important Information

Our technical advice, whether spoken, written, or through test trials, corresponds to our current knowledge to inform about our products and their use. This is not meant as an assurance for certain properties of the products nor for their suitability for each application. You are, therefore, obliged to conduct your own tests with our supplied products to confirm their suitability for the desired process or purpose. The selection and testing of the ink for specific applications is exclusively your responsibility. Should, however, any liability claims arise, such claims shall be limited to the value of the goods delivered by us and utilized by you with respect to any and all damages not caused intentionally or by gross negligence.

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