

# Series 640 silicone-free

Silicone-free 2C Screen Printing Ink for Metals and Plastics

Our Series 640 silicone-free is a highly thermostable, outdoor-resistant two-component solvent-based screen printing ink. It impresses with brilliant gloss and is excellently suited for demanding applications on numerous metals and plastics. Thanks to its excellent chemical resistance and weathering properties, this fast-drying ink series is optimal for challenging automotive applications or in the field of advanced technology. Series 640 silicone-free, with its modern formulation, is excellently suited for overprinting, overcoating, or overlaying.

Series 640 silicone-free is comprehensively supplemented by our highly pigmented, silicone-containing Series 640. You can find all the information about Series 640 in the relevant technical data sheet.

## Key characteristics

- › Highest opacity and super gloss
- › Minimal drying times
- › Comprehensive color range
- › Superior outdoor-resistance
- › Extreme weather-resistance
- › Excellent resistance to various chemicals

## Most suitable applications

- › Signs and wayfinding systems/signage
- › Automotive emblems
- › Overprinted or overcoated technical components

## Substrates

Substrate	Rating	Hints
ABS, SAN	★★★★★	
Coated surfaces / powder coatings	★★★★★	
Polyamide (PA), pre-treated	★★★★★	
Polyester, primered	★★★★★	
Polyethylene (PE), pre-treated	★★★★★	
Polypropylene (PP), pre-treated	★★★★★	
Tritan™ (copolyester)	★★★★★	
Composite materials	★★★★★	
Metal	★★★★	
Polyester, non pre-treated	★★★★	
Wood, uncoated	★★★	
Polycarbonate (PC)	★★★	

### Legend

★★★★★ Very well suited

★ Detailed pre-tests necessary

Note: a detailed overview of all available substrates for Series 600 can be found here:

<https://www.printcolor.ch/en/screen-printing-inks.html>

### Characteristics

Feature	Rating	Hints
Alcohol- and gasoline resistance	★★★★★	
Resistance to adhesives	n/a	
Block resistance	n/a	
Flexibility	★★★	
Gloss	★★★★	Glossy
Resistance to hand sweat	★★★★★	
Light fastness	★★★★	See technical information: Light fastness
Abrasion resistance	★★★★★	
Pigmentation	★★★★★	
Sieve openness	★★★	
Temperature resistance	★★★★★	
Drying	★★★	Ink film is quickly surface dry
Moldability	★	
Water resistance	★★★★	
Weather resistance	★★★★★	

**Legend**      ★★★★★ Very good product properties      n/a No information available  
                  ★ Product properties not available

### Product Range

Note regarding our product range: All colors with the ending 6 or 06 are silicone-free. A comprehensive, high pigmented and outdoor-resistant addition to this ink series is available in Series 640.

#### MS Basic Colors

Article	Color	SF	OR	HR	Article	Color	SF	OR	HR
640-1016	MS yellow	•	•	•	640-3306	MS magenta	•	•	•
640-1056	MS pure yellow	•	•	•	640-4006	MS violet	•	•	•
640-1306	MS yellow orange	•	•	•	640-5006	MS blue	•	•	•
640-1856	MS pure orange	•	•	•	640-6006	MS green	•	•	•
640-2956	MS pure red	•	•	•	640-8006	MS black	•	•	•
640-3206	MS dark red	•	•	•	640-9006	MS white	•	•	•

**SF** Silicone-free                      **OR** Outdoor-resistant                      **HR** High thermostable

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

## Other Colors

<b>ST Metallics</b>	ST Color Chart / <a href="http://www.printcolor.ch/stcolorguide">www.printcolor.ch/stcolorguide</a>	
<b>Special Colors</b>	Pantone®, HKS, RAL and after customers sample	
<b>Others</b>	Series 640-00/06	ST white, free of silicone
	Series 640-05/06	Varnish, free of silicone
	Series 640-33/06	ST black, free of silicone

## Auxiliaries

<b>Thinner</b>	Series 600-017	<b>Addition ratio</b>	10–20 % by weight
<b>Retarder</b>	Series 600-018	<b>Addition ratio</b>	5–15 % by weight

### Hardener

	Series 600-HDA	Series 600-HDS	Series 600-HDI
<b>Application</b>	Long term outdoor use	Long term outdoor use	Indoor use
<b>Addition ratio</b>	4:1	4:1	4:1
<b>Reactivity</b>	Medium reactivity from 20 °C	Medium reactivity from 23 °C	Higher reactivity from 15 °C
<b>Resistance to chemicals</b>	Very good	Excellent	-
<b>Outdoor resistance</b>	Very good	Very good	-
<b>Various</b>	Standard hardener	-	Results in slightly harder ink films

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

## Processing

### Mesh

All commercially available polyester mesh can be used.

### Stencils

All commercially available stencils can be used.

### Curing

Bonding of the ink system depends on temperature, used hardener and layer thickness. To reach maximum resistance, a minimum temperature (see point „hardener“) must be guaranteed over a duration of 5 to 10 days. By increasing the temperature, the ink film cures faster and an earlier and even better chemical resistance can be achieved.

### Curing times

<b>Series 600-HDA</b>	7 days (at minimum temperature)
<b>Series 600-HDS</b>	10 days (at minimum temperature)
<b>Series 600-HDI</b>	5–7 days (at minimum temperature)
<b>Forced drying</b>	30 minutes at 120 °C

It is important to ensure, that temperatures do not fall below within the first 48 hours. An increased moisture supply during drying time can permanently damage the ink film.

### Pot life

MS colors and its blends have a pot life of 6-8 hours, depending from the hardeners used and depending on environmental conditions. Significantly shortened pot life has to be encountered with metallic colors.

## Overprintability

The ink film can be overprinted with a suitable ink system, preferably before complete curing of the ink.

## Further Processing

- › Embossing
- › Bending
- › Punching
- › Cutting \*

\* After preliminary tests

## Cleaning

Intermediate cleaning of stencils and squeegees should be done in a timely manner with Series 600-BRS. Final cleaning can be done with Series 600-URS.

## Productivity

Depending on the color shade, a productivity of 45–65 m<sup>2</sup>/kg is to be expected with press-ready ink and use of a mesh 120.34.

## Others

<b>Delivery</b>	1 kg / 5 kg / 25 kg
<b>Certificates / Standards</b>	<a href="http://www.printcolor.ch/certificate">www.printcolor.ch/certificate</a>
<b>Others</b>	Stir well before use.
	Information on shelf life can be found on the cover label.

## Basic Color Systems

- HP** Basic Color Mixing System with high pigmented basic colors.
- HL** High light fast color for long-term outdoor use.
- HR** Thermo-stable combination colors with a heat resistance of 200°C/>30min.
- SF** Silicone free version.

## Safety Information

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

## 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.

Issued on	Revision on	Edited by	Version
26/08/2015	4/6/2023	T21 / T06 / T30 / T35	6