

# Series 640

Highly resistant 2C Screen Printing Ink for Metals and Plastics

Series 640 is a versatile, highly pigmented, and 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 optimally suited for challenging applications in the high-quality technical field, for printing signs and wayfinding systems, as well as for the decoration of bottle crates.

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

## Key characteristics

- › Highest opacity and super gloss
- › Minimal drying times
- › Comprehensive color range
- › Excellent resistance to various chemicals
- › Highly pigmented and thermostable

## Most suitable applications

- › Signs and wayfinding systems/signage
- › Beer and bottle crates
- › Metal and plastic cover plates
- › Technical components
- › Highly resistant film stickers
- › Protective coatings

## 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: A silicone-free and highly thermostable stable addition to this ink series is available in Series 640 silicone-free.

#### MS Basic Colors

Article	Color	HP	OR	HR	Article	Color	HP	OR	HR
640-1000	MS light yellow	•			640-3000	MS red	•		
640-1010	MS yellow		•	•	640-3100	MS magenta red	•		
640-1050	MS pure yellow		•	•	640-3200	MS dark red	•	•	•
640-1100	MS medium yellow	•	•		640-3300	MS magenta	•	•	•
640-1150	MS dark yellow		•	•	640-4000	MS violet	•	•	•
640-1200	MS dark yellow	•			640-5000	MS blue	•	•	•
640-1300	MS yellow orange		•	•	640-6000	MS green	•	•	•
640-1850	MS pure orange		•	•	640-7000	MS brown	•		•
640-2000	MS orange	•			640-8000	MS black	•	•	•
640-2950	MS pure red		•	•	640-9000	MS white	•	•	•

**HP** High pigmented      **OR** Outdoor-resistant      **HR** High thermo-stable      **SF** Free of silicone

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>ST Neon Colors*</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>UV Luminescent Colors</b>	Series 640-UL09/05	UV luminescent ink, yellow
	Series 640-UL16/05	UV luminescent ink, red
	Series 640-UL26/05	UV luminescent ink, blue
	Series 640-UL30/05	UV luminescent ink, green
<b>Others</b>	Series 640-00	ST white
	Series 640-04	Thixotropic paste
	Series 640-05	Varnish
	Series 640-05/MT	Varnish, mat
	Series 640-06	Retarder paste
	Series 640-07	Binder
	Series 640-33	ST black

\* Note: The Neon Colors are not suitable for a medium or long-term outdoor use. The contained fluorescent pigments are not resistant to direct sunlight and fade.

**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**

	<b>Series 600-HDA</b>	<b>Series 600-HDS</b>	<b>Series 600-HDI</b>
<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.
- OR** Outdoor-resistant basic colors for a long-term outdoor use.
- HR** Thermostable 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.

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

## 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.