SunChemical®

Coates Screen Inks

Pad Printing Ink Ranges

with especially environmentally compatible and user-friendly formulations

Naturally all printing ink ranges of Coates Screen Inks comply with REACH, RoHS and the EuPIA Guidelines. Additionally many of our ink ranges comply with Toy Standard EN 71-3:2019. Some types even have USP Medical Class VI certification for applications on medical devices.

Owing to product/occupational safety or self-imposed guidelines and for specific applications printers or end users need substrates and subsequently also pad printing inks which are free of certain substances (solvents, resin components). Often only particular individual substances/substance groups have to be excluded, but in some cases the inks have to be completely free of a combination of several substances/ substance groups.

The following six pad printing ink ranges of our comprehensive product portfolio meet the extra high requirements with respect to product safety.

TP 307

TP 313

TP 318

TP 340

TP 400

TPE-HF

THESE INK SERIES ARE FREE OF:

- **Aromatics**
- **Bisphenol A (BPA)**
- **Butyl glykolate (GB-Ester)**
- **Cyclohexanone**
- **Phthalates**
- **Polycyclic aromatic hydrocarbons (PAH)**
- **Solvent Naphtha**

+ **All these ink ranges meet the requirements of EN 71-3:2019** (Toy Standard)

+ **In addition TP 313 and TP 400 have USP Class VI certification** (medical devices)

+ **Additionally TP E-HF is free of halogens according to DIN EN 61249-2-21**

herpa®

Pad Printing Ink Ranges

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TP 307
The Extra Resistant

Ink type:	Pad printing ink, 2-component
Base:	Solvent based ink
Degree of gloss:	Very high
Drying speed:	Medium
Hardener:	TP 219/N (4:1)
	TP 219 (4:1)

- Good printability
- High resistance against chemical cleaning agents
- High abrasion resistance
- Broad range of substrates
- Excellent light and weather fastness

- Main area of application:
  - Automotive
  - Household appliances
  - Electrical devices

Mainly for technical-industrial applications, printing on thermoplastics such as PC, PMMA, PP, PE as well as coated substrates

TP 313
The Tough

Ink type:	Pad printing ink, 1- and 2-component
Base:	Solvent based ink
Degree of gloss:	High
Drying speed:	Quick
Alternative Hardener:	TP 219 (10:1)
	TP 219/N (10:1)

- Good printability
- For flat and rotation systems
- Broad range of colours
- Broad range of substrates
- Very high abrasion resistance
- Good light and weather fastness
- Medical devices: USP Class VI-certification

- Main area of application:
  - Promotional articles
  - Household appliances (white goods)
  - Toys
  - Packaging
  - Medical devices

As 1-component ink mainly for printing on thermoplastics such as ABS, SAN, PS, PC, PMMA, with hardener also suitable for e.g. PP and PE plastics.

TP 318
The New Versatility

Ink type:	Pad printing ink, 2-component
Base:	Solvent based ink
Degree of gloss:	Medium
Drying speed:	Quick
Hardener:	TP 219 (4:1)
	TP 219/VCH (10:1)

- New formulation
- New hardener concept, two different hardeners
- Excellent printability
- Colours with especially high intensity
- Excellent chemical and mechanical resistances
- Vast variety of different substrates

- Main area of application:
  - Glass and ceramics
  - Metals
  - Chromium-plated and coated surfaces
  - Thermoplastics
  - Duroplastics

Mainly for demanding technical-industrial applications.

TP 340
The Superfast

Ink type:	Pad printing ink, 1- and 2-component
Base:	Solvent based ink
Degree of gloss:	High
Drying speed:	Very quick
Alternative Hardener:	TP 219 (10:1
	TP 219/N (10:1)

- Good printability even at high printing speed
- Very quick drying
- High resistance against
  - alcohol
  - test fuel
  - cosmetics
- High abrasion resistance
- Broad range of substrates
- Good light and weather resistance

- Main area of application:
  - Promotional articles
  - Toys
  - Cosmetics

Mainly for printing on thermoplastics such as ABS, SAN, PS, PC, PMMA.

TP 400

Modern • Reliable • Versatile

Ink type:	Pad printing ink, 1- and 2-component
Base:	Solvent based ink
Degree of gloss:	High
Drying speed:	Medium
Alternative Hardener:	TP 219 (10:1)
	TP 219/N (10:1)
	TP 219 /12 (10:1)**

- New formulation
- Excellent printability
- For flat and rotation systems
- Very broad range of colours
- Very broad range of substrates
- Medical devices: USP Class VI-certification

- Main area of application:
  - Promotional articles
  - Toys
  - Sports items
  - Packaging
  - Medical devices
  - Household appliances
  - Cosmetics
  - Electrotechnical products
  - Automotive (plastics)

** Required for USP Class VI certification

TP E-HF

The Halogen-Free

Ink type:	Pad printing ink, 1- and 2-component
Base:	Solvent based ink
Degree of gloss:	High
Drying speed:	Quick
Alternative Hardener:	TP 219 (8:1)
	TP 219/N (8:1)

- Free of halogens according to DIN EN 61249-2-21
- Good printability
- For flat and rotation systems
- Good abrasion resistance
- Broad range of substrates
- Good light and weather resistance

- Main area of application:
  - Promotional articles
  - Toys
  - Cosmetics

Mainly for printing on thermoplastics such as ABS, SAN, PS, PC, PMMA, with addition of hardener also suitable for e.g. PP and PE plastics.

Suitability Chart Ink - Substrate	TP 307	TP 313	TP 318	TP 340	TP 400	TP E-HF
1- and alternatively 2-component		✔		✔	✔	✔
2- component ink	✔		✔			
Substrates						
ABS, SAN	②	●	②	●		●
Polystyrene (PS)		●		●		●
Polycarbonate (PC)	②	●		●	●	●
PMMA	②	●	②	●	●	●
PVC - rigid	②	●		●	●	●
PVC - plasticized				●		
Polyamide (PA)		②	②	②	②	②
Polypropylene (PP) pre-treated	②	②	②		②	②
Polyethylene (PE) pre-treated	②	②	②		②	②
Polyurethane (PU)	②		②	②	②	
Polyacetal (POM) post-treatment required	②		②	②	②	
Polyester	②	②	②	②	②	②
Duroplastics	②		②		②	
Metals	②		②	②	②	
Coated Surfaces	②	●	②		●	●

● = **Preferred** for the application ● **Suitable** for the application

② or ② = Processing with hardener as 2-component ink

More technical information about processing is available in the product data sheet of the respective ink series.

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To ensure that all guidelines and limits are observed the appropriately suitable thinners, retarders, hardeners and additives must be selected for adjustment of these inks.

Selection table for thinners and retarders

Products	Evaporation rate	Factor	Solvent power	Applicability
Additive C	Very quick	0.25	Medium - Strong	Universal
Additive D	Quick	0.5	Medium	Universal
Additive U	**Medium**	**1**	**Medium**	**Universal**
Additive R	Medium to slow	3	Medium	Universal
VD 60	Medium to slow	5	Medium	Universal
VZ 35	Very slow	25	Mild - Medium	Universal

Information about substances not used in these ink series

Bisphenol A (BPA)

BPA is a starting material for the production of some polymeric plastics such as polycarbonate or epoxy resins. Epoxy resins are often used for the production of cross-linkable, highly resistant coatings, casting compounds or adhesives. BPA is proven to have a weak estrogenic effect so that resorption into the human body should be avoided as far as possible. At the moment there is a controversial discussion among experts how and in what concentration BPA is harmful.
For many years, Coates Screen Inks GmbH has been offering reliable 2-component ink systems based on epoxy resins which may show slight traces of BPA due to the manufacturing process. However, we do not use Bisphenol A as raw material.

Cyclohexanone

Cyclohexanone is an excellent solvent for coatings and is very universal with regard to its technical properties. Unfortunately inhalation of vapours is harmful which is why exposure limits must be observed for this substance. However, with suitable protective equipment (extraction, ventilation, PPE) the danger for employees can be minimized. The necessary industrial safety measures are technically feasible. The completely dried ink film (printed article) does not present any risk as the solvent has already evaporated then.

Butyl glycolate (GB-Ester/Glycolic acid butyl ester)

For many years, we have not been using this solvent for new formulations as it is suspected of damaging fertility or the unborn child. A monitoring of exposure at the workplace is not required. Considering GMP danger is low, but cannot be excluded completely.

PAH, Polycyclic aromatic hydrocarbons

PAH are natural components in coal and mineral oil. They also occur during (incomplete) combustion of organic substances and there is evidence to cause cancer. Polycyclic aromatic hydrocarbons (in total 18) can be found in e.g. tobacco smoke and in grilled and smoked meals. In printing inks they occur in carbon black pigments which are frequently used in black printing inks. Solvent Naphtha, a formerly popular organic solvent or thinner for inks and varnishes, is a fraction of the mineral oil distillation and therefore naturally contains naphthalene which is the smallest and thus most volatile of all PAH´s. To be able to observe lowest PAH limits (e.g. GS symbol concession according to AfPS GS 2014:01 PAH) the corresponding printing inks must be completely free of Solvent Naphtha. For black colours special pigments must be used as in our colour shades N58, 68 and 68-HD.

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Coates Screen Inks GmbH
Nuremberg Screen and Pad Printing Inks from Wiederholdplatz

Wiederholdplatz 1 · D-90451 Nürnberg
T +49 911 64 22-0 · F +49 911 64 22-200
info.coates@sunchemical.com
www.coates.de