

Product Data Sheet

Pad Printing Ink

SunChemical[®]
Coates Screen Inks

TP 249

Solvent Based Pad Printing Ink Range, 1-Component

APPLICATION

Pad printing inks for printing of thermoplastic items, which are sensitive to tension cracks (cans, cups, housing parts, also boards, various give-aways etc.), especially injection moulds made of polystyrene (PS), polycarbonate (PC), PET-G, PMMA ("acrylic glass"), ABS and other co-polymers.

PROPERTIES

- Ink range TP 249 is a solvent based 1-component pad printing ink series.
- TP 249 inks are physically quick drying and result in a glossy finish.
- **TP 249 inks have been formulated with especially mild solvents to obtain lowest possible strain of plastics sensitive to tension cracks.**
- This ink range shows a good, easy and reliable printability.
- TP 249 prints exhibit good resistances against cosmetics such as skin creams and oils. However, as this is a 1-component system the extremely high resistances of 2-component systems, such as our pad ink ranges TP 218 or TP 260 cannot be achieved.
- TP 249 ink range is suitable for outdoor applications.
- Note: Because of the special issue of "tension cracks" pre-tests are essential. In that respect, please note that depending on the type of plastic material, the injection moulding production process and the printing conditions, tension cracks may even appear several days after printing.

COLOUR SHADES - OVERVIEW

- Mixing System: C-MIX 2000 12 colour shades for mixing of RAL, PMS and HKS colours.
- Opaque: Standard Colour shades with medium to good opacity.
- Special colour shades are available upon request.
- More information about available colour shades in the detailed tables in section Colour Shades.

CHOICE OF PIGMENTS AND LIGHT FASTNESS

Colour shades of TP 249 ink range contain pigments with a high light fastness. Light fastness and weather resistance will reduce if thinner layers are applied or if base colours are mixed with a high ratio of white or varnish.

Applied on suitable substrates pad printing inks TP 249 are suitable for outdoor applications.

ADJUSTMENT FOR PAD PRINTING

- Pad printing inks TP 249 are not supplied in a ready-to-print adjustment.
- The ink is adjusted for printing by addition of thinner or retarder (stir with mixer, agitator).
- Prior to printing, the inks should be stirred well to obtain a homogeneous dispersion of all ingredients.

THINNERS / RETARDERS

Depending on local conditions, the ink is adjusted for printing by addition of 15 to 30 % by weight thinner or retarder.

As TP 249 inks are applied on substrates sensitive to solvents we recommend use of especially mild thinners.

Generally, the thinner suitable for TP 249 is VD 10!

The additional products listed below should only be used if the required printing quality/ink transfer cannot be achieved using VD 10 (e.g. drying too slow or too fast; not enough solving power).

For adjustment of pad inks TP 249, the following products are available:

Thinner:	<input checked="" type="checkbox"/> VD 10 <input type="checkbox"/> Additive U	Standard thinner, mild Strong solving power!, (free of cyclohexanone)
Retarder:	<input type="checkbox"/> XVH <input type="checkbox"/> XD <input type="checkbox"/> TPD	Quick retarder, mild Slow retarder, mild Very slow retarder
		■= Preferred ○= If required
Note:	For printing with thick and thin steel clichés sensitive to corrosion	
	<input type="checkbox"/> Additive U/00	Standard thinner with anti-corrosion additive

Depending on printing conditions, the products listed above can be mixed into the inks individually or as mixtures. Please note that depending on evaporation rate of the thinner/retarder used drying times may be longer.

Thinner/retarder should be mixed into the ink thoroughly using a mixer or agitator. In addition, inks should be stirred well prior to each processing to obtain a homogeneous dispersion of all ingredients.

ADDITIONAL AUXILIARY AGENTS

Application	Product	Addition in % by weight	Additional Information
Antistatic paste	LAB-N 111420	Max. 10%	Possibly slightly reduced gloss
Retarder paste	LAB-N 111420/VP	Max. 10%	Possibly slightly reduced gloss
Viscosity increase	Thickening powder	Max. 3%	Stir with mixer
Matting	Matting powder	Max. 5%	Stir with mixer
Flow agent	VM 1	1 - 5%	Do not overdose!

OVERPRINTING

Generally, it is not necessary to overprint TP 249 inks with varnish. Basically overprinting to achieve an enhanced protection of ink layers is possible with TP 249/E50.

BRONZE COLOURS, MIXING OF BRONZE INKS

Bronze colours are available upon request.

Printers can mix bronzes themselves using bronze pastes B 75, B 76, B 77 and B 79 as well as bronze powder B 78-POWDER. For examples of colour shades please refer to our Bronze Colour Card.

These "B" bronze pastes and "B" bronze powder are mixed with bronze binder TP 249/B or varnish TP 249/E50 prior to processing.

Mixing ratios in parts by weight:

Gold bronze paste/powder	to	TP 249/B or TP 249/E50	=	1 : 3 - 4
Silver bronze paste	to	TP 249/B or TP 249/E50	=	1 : 4 - 6

These Bronzes B 75 to B 79 are prone to oxidation (Exception B 78-POWDER). Therefore, they should be overprinted, e.g. with TP 249/E50. B bronzes are not recommended for long-term outdoor applications.

B 78-POWDER does not tend to oxidation. The pale copper shade will not darken with time. Colour of inks mixed with B 78-POWDER is similar to colour 78/AB as shown on our "bronze colour card".

Note: When overprinting bronze colours with varnish or other colour shades it is essential to carry out pre-tests to check intermediate adhesion of the ink layers (fingernail test, tape test). Possibly mixing ratio needs to be changed to a higher varnish ratio (between 10 – 30%).

DRYING

TP 249 pad printing inks dry physically, i.e. by evaporation of solvents.

Drying times below are only approximate as drying properties depend on various factors:

- Type and amount of thinners/retarders used.
- Thickness of printed ink layer (single print, multiple prints)
- Drying temperature.

Drying time is approx. 3 minutes at room temperature (20 – 25°C). Drying time with heat application (e.g. hot air fan) and air circulation is about 20 - 25 seconds.

Complete drying may take up to 15 minutes, also depending on the substrate.

Resistance Tests

Resistances should not be checked before the prints are completely dry.

CLICHÉ

All commercial types of clichés (polymer, thin and thick steel, ceramic) are suitable for processing TP 249 inks.

Note: Standard shades 17, 50 and 51 cannot be used for closed ink systems with a magnet holder as they contain pigments with iron oxide content.

CLEANING

Clichés, ink pots and tools can be cleaned with our universal cleaning agents URS, URS 3 or thinner VD 40.

PACK SIZE

Pad printing inks TP 249 are delivered in 1 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, TP 249 inks generally have a shelf life of 5 years from date of production.

For exact date of expiry, please refer to the label.

SAFETY DATA SHEETS

Read safety data sheet prior to processing

Safety data sheets comply with Regulation (EC) No. 1907/2006 (REACH), Appendix II.

CLASSIFICATION AND LABELLING

Hazard classification and labelling comply with Regulation (EC) No. 1272/2008 (CLP/GHS).

CONFORMITY

Coates Screen Inks GmbH does not use any of the substances or mixtures for the production of printing inks, which are banned according to the EUPIA (European Association of the Printing Inks Industry) exclusion policy.

Further compliance confirmations are available upon request.

ADDITIONAL INFORMATION ABOUT OUR PRODUCTS

Product data sheets: Auxiliary Agents for Pad Printing HM

Brochures: Pad Printing Inks

Internet: Various technical articles are available for download on www.coates.de, section "SN-Online"

FOR COLOUR RANGES, PLEASE REFER TO NEXT PAGE.

COLOUR SHADES

C-MIX 2000 BASE COLOUR SHADES					
Mixing system for matching of PMS, HKS, RAL colours (on white substrates) Start formulations available in data base „Formula Management C-MIX 2000“ According to colour card C-MIX 2000					
primrose	TP 249/Y30	red	TP 249/R50	green	TP 249/G50
golden yellow	TP 249/Y50	magenta	TP 249/M50	black	TP 249/N50
orange	TP 249/O50	violet	TP 249/V50	white	TP 249/W50
scarlet	TP 249/R20	blue	TP 249/B50	varnish	TP 249/E50
STANDARD Colour Range (medium opacity)					
According to colour card STANDARD 1 for pad printing inks or TP 247/ TP 249... Availability of further standard shades upon request					
bright red	TP 249/21-NT-NEU	white	TP 249/60-NT-NEU		
light blue	TP 249/30-NT-NEU	black	TP 249/65-NT-NEU		
STANDARD Colour Range HD (high opacity)					
According to colour card STANDARD HD for Pad printing inks Availability of further standard HD shades upon request					
white, highly opaque	TP 249/60-HD-NT	black, highly opaque	TP 249/65-HD-NT		
SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes					
Information about availability upon request					
Bronze binder	TP 249/B				
4 COLOUR PROCESS INKS (CMYK)					
According to colour card STANDARD 1 for pad printing inks TP 247/ TP 249... Information about availability upon request					
Upon request					
AB – BRONZE INKS and MG – METAL GLOSS INKS					
According to Bronze Colour Card					
AB Bronze Inks			MG Metal Gloss Inks		
Upon request			Upon request		

Matching of PMS, RAL, NCS colours and special shades upon request.

All above information refers to the colour shades listed in this product data sheet and other standard shades of this pad printing ink range. Information about availability of further standard shades upon request.

In some individual cases the product characteristics of special colour shades and modifications of this ink type manufactured upon customer request may differ from the above properties.

The statements in our product and safety data sheets are based on our present experiences, however they are no assurance of product properties and do not justify a contractual legal relationship. We provide these details to inform customers about our products and their possible applications. However, on account of various factors influencing processing of our products it is absolutely essential to carry out printing trials under local production conditions. Choice of individual ink types and their suitability for the intended application is the sole and entire responsibility of the user. We do not assume any liability for any problems of technical or process-related nature. Any liability shall be limited to the value of the goods delivered by us and processed by the user.

All former product data sheets are no longer valid.

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