

# Product Data Sheet

## Pad Printing Ink

# TP/PP & TP/PP-A

## Solvent Based Pad Printing Ink Range, 1-Component

### APPLICATION

Pad printing inks for printing of non-treated polypropylene (PP) for applications not requiring high resistances.

### PROPERTIES

- Ink ranges TP/PP and TP/PP-A are a solvent based 1-component pad printing ink series.
- TP/PP-A is an enhanced modification of TP/PP. Depending on technical printing conditions and type of PP material TP/PP-A shows better printability and adhesion in some individual cases.
- We are continuing to offer both ink ranges as original TP/PP inks are being used successfully.
- TP/PP-A is also suitable for rotation printing systems.
- Both ranges can be mixed at any ratio. However, suitability of such mixtures has to be evaluated, taking into consideration individual processing conditions and required resistances.
- TP/PP and TP/PP-A inks are physically quick drying and result in a semi-gloss finish.
- TP/PP and TP/PP-A prints only show limited water and hand sweat resistance. Hence, suitability for such applications/requirements has to be checked.
- TP/PP and TP/PP-A are suitable for medium-term outdoor applications.
- Note: On account of various degrees of polymerisation, composition of contents and fillers printability properties of polypropylene are very different. Pre-tests under production conditions are therefore absolutely essential.

### 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.  
Standard HD Highly opaque colour shades.
- Process Inks: "180 colours" 4 transparent colour shades according to ISO 2846-4.
- 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/PP and TP/PP-A ink ranges 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/PP and TP/PP-A are suitable for medium-term outdoor applications.

### ADJUSTMENT FOR PAD PRINTING

- Pad printing inks TP/PP and TP/PP-A 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 10 to 20 % by weight thinner or retarder.

**Generally, the thinner suitable for TP/PP and TP/PP-A is Additive A!**

The additional products listed hereafter should only be used if the required printing quality/ink transfer cannot be achieved using Additive A (e.g. drying too slow or too fast).

For adjustment of pad inks TP/PP and TP/PP-A, the following products are available:

<b>Thinner:</b>	<input type="radio"/> Additive C	Extremely quick thinner, good solving power
	<input type="radio"/> VD 40	Quick, very strong solving power
	<input type="radio"/> Additive B	Quick thinner, good solving power
	<input checked="" type="radio"/> <b>Additive A</b>	<b>Standard thinner</b>
	<input type="radio"/> Additive U	Standard thinner, free of cyclohexanone
	<input type="radio"/> VD 60	Slow thinner
<b>Retarder:</b>	<input type="radio"/> TPD	Very slow retarder
	■= Preferred    ○= If required	
<b>Note:</b>	<b>For printing with thick and thin steel clichés sensitive to corrosion</b>	
	<input type="radio"/> Additive A/00	Standard thinner with anti-corrosion additive
	<input type="radio"/> Additive B/00	Quick 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/PP and TP/PP-A inks with varnish. Basically, overprinting to achieve an enhanced protection of ink layers is possible with TP/PP-E50 and TP/PP-E50-A.

#### 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 varnish TP/PP-E50 (TP/PP-E50-A) prior to processing.

Mixing ratios in parts by weight:

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

Bronzes B 75 to B 79 are prone to oxidation (Exception B 78-POWDER). Therefore, they should be overprinted, e.g. with TP/PP-E50 (or TP/PP-E50-A). 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/PP and TP/PP-A 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. 2 – 3 minutes at room temperature (20 – 25°). Drying time with heat application (e.g. hot air fan) and air circulation is about 20 seconds.

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

**Resistance Tests**

Resistances should not be checked before the prints are completely dry. Depending on type of PP material good adhesion and scratch resistance will sometimes require a few hours.

**CLICHÉ**

All commercial types of clichés (polymer, thin and thick steel, ceramic) are suitable for processing TP/PP and TP/PP-A 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/PP and TP/PP-A are delivered in 1 litre containers. Other pack sizes are available upon request.

**SHELF LIFE**

In closed original containers, TP/PP and TP/PP-A inks generally have a shelf life of 2 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. Pad printing inks range TP/PP C-MIX 2000 colour shades, standard, highly opaque standard colours (HD), process colours, silver, fluorescent colours and transparent colours comply with the requirements of toy standard „EN 71-3:2019 Safety of toys – Migration of certain elements (category III: scraped off material).

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: [www.coates.de](http://www.coates.de), Service & Support, Technical Articles

**FOR COLOUR RANGES, PLEASE REFER TO NEXT PAGE.**

**COLOUR SHADES**

<b>C-MIX 2000 BASE COLOUR SHADES</b>					
<b>Mixing system for matching of PMS, HKS, RAL colours (on white substrates)</b>					
Start formulations available in data base „Formula Management C-MIX 2000“					
<b>According to colour card C-MIX 2000</b>					
primrose	TP/PP-Y30 <i>TP/PP-Y30-A</i>	red	TP/PP-R50 <i>TP/PP-R50-A</i>	green	TP/PP-G50 <i>TP/PP-G50-A</i>
golden yellow	TP/PP-Y50 <i>TP/PP-Y50-A</i>	magenta	TP/PP-M50 <i>TP/PP-M50-A</i>	black	TP/PP-N50 <i>TP/PP-N50-A</i>
orange	TP/PP-O50 <i>TP/PP-O50-A</i>	violet	TP/PP-V50 <i>TP/PP-V50-A</i>	white	TP/PP-W50 <i>TP/PP-W50-A</i>
scarlet	TP/PP-R20 <i>TP/PP-R20-A</i>	blue	TP/PP-B50 <i>TP/PP-B50-A</i>	varnish	TP/PP-E50 <i>TP/PP-E50-A</i>
<b>STANDARD Colour Range (medium opacity)</b>					
<b>According to colour card STANDARD 1 for pad printing inks or TP 247/ TP/PP...</b>					
Availability of further standard shades upon request					
citric yellow	TP/PP 10-NT <i>TP/PP 10-R-NT-A</i>	light blue	TP/PP 30-NT <i>TP/PP 30-R-NT-A</i>	fir green	TP/PP 41-NT <i>TP/PP 41-R-NT-A</i>
medium yellow	TP/PP 11-NT <i>TP/PP 11-R-NT-A</i>	medium blue	TP/PP 31-NT <i>TP/PP 31-R-NT-A</i>	brilliant green	TP/PP 42-NT <i>TP/PP 42-R-NT-A</i>
dark yellow	TP/PP 12-NT <i>TP/PP 12-R-NT-A</i>	ultra marine	TP/PP 32-NT <i>TP/PP 32-R-NT-A</i>	white	TP/PP 60-NT <i>TP/PP 60-R-NT-A</i>
light red	TP/PP 20-NT <i>TP/PP 20-R-NT-A</i>	dark blue	TP/PP 33-NT <i>TP/PP33-R-NT-A</i>	black	TP/PP 65-NT <i>TP/PP 65-NT-A</i>
bright red	TP/PP 21-NT <i>TP/PP 21-R-NT-A</i>	light green	TP/PP 40-NT <i>TP/PP 40-R-NT-A</i>		
<b>STANDARD Colour Range HD (high opacity)</b>					
<b>According to colour card STANDARD HD for pad printing inks</b>					
Availability of further standard HD shades upon request					
citric yellow, highly opaque	TP/PP 10-HD-NT	bright red, highly opaque	TP/PP 21-HD-NT		
medium yellow, highly opaque	TP/PP 11-HD-NT	carmin red, highly opaque	TP/PP 22-HD-NT		
dark yellow, highly opaque	TP/PP 12-HD-NT	white, highly opaque	TP/PP 60-HD-NT <i>TP/PP 60-HD-R-NT-A</i>		
orange, highly opaque	TP/PP 15-HD-NT	black, highly opaque	TP/PP 65-HD-NT <i>TP/PP 65-HD-NT-A</i>		
light red, highly opaque	TP/PP 20-HD-NT				
<b>TP/PP-A: Highly opaque colour shades upon request.</b>					
<b>SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes</b>					
Information about availability upon request					
black, low-grade PAH transparent paste	TP/PP 68-NT TP/PP-TP	bronze binder	TP/PP-B		
<b>4 COLOUR PROCESS INKS (CMYK)</b>					
<b>According to colour card STANDARD 1 for pad printing inks or TP 247/ TP/PP ...</b>					
Information about availability upon request					
process yellow	TP/PP 180-NT <i>TP/PP 180-R-NT-A</i>	process black	TP/PP 65-NT <i>TP/PP 65-NT-A</i>		
process magenta	TP/PP 181-NT <i>TP/PP 181-R-NT-A</i>	varnish (for brightening)	TP/PP-E50 TP/PP-E50-A		
process cyan	TP/PP 182-NT <i>TP/PP 182-R-NT-A</i>				
<b>AB – BRONZE INKS and MG – METAL GLOSS INKS</b>					
<b>According to Bronze Colour Card</b>					
<b>AB Bronze Inks</b> Upon request			<b>MG Metal Gloss Inks</b> 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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