Product Data Sheet
Pad Printing Ink

SunChemical®
a member of the DIC group
Color & Comfort

TP 272

Solvent Based Pad Printing Ink Range, 1-Component

APPLICATION
Pad printing inks for printing of thermoplastics, especially rigid and plasticized PVC, polycarbonate (PC), PMMA ("acrylic glass"). Also limited suitability for polystyrene (PS), ABS and SAN.

PROPERTIES
- Ink range TP 272 is a solvent based 1-component pad printing ink series.
- This ink range shows a good, easy and reliable printability
- TP 272 inks are physically quick drying and result in a glossy finish.
- TP 272 prints show good mechanical resistances.
- TP 272 ink range is suitable for outdoor applications.
- Note: As thermoplastic injection moulds are sensitive to tension cracks pre-tests are absolutely essential for such printing applications.

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.
- Bronzes: B / AB / MG — Gold, silver and copper shades.
- 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 272 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 272 are suitable for outdoor applications.

ADJUSTMENT FOR PAD PRINTING
- Pad printing inks TP 272 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 35 % by weight thinner or retarder.
Generally, the thinner suitable for TP 272 is Additive A!
The additional products listed below 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 272, the following products are available:

Thinner:	○	Additive C	Extremely quick thinner, good solving power
	○	VD 40	Quick, very strong solving power
	○	Additive B	Quick thinner, good solving power
	■	**Additive A**	**Standard thinner**
	○	Additive U	Standard thinner, free of cyclohexanone
	○	VD 60	Slow thinner
Retarder:	○	TPD	Very slow retarder
	■= Preferred	○= If required	
Note:	**For printing with thick and thin steel clichés sensitive to corrosion**		
	○	Additive A/00	Standard thinner with anti-corrosion additive
	○	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 2	0.3 - 5%	Do not overdose!

OVERPRINTING

Generally, it is not necessary to overprint TP 272 inks with varnish. Basically, overprinting to achieve an enhanced protection of ink layers is possible with TP 272/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 272/B or varnish TP 272/E50 prior to processing.

Mixing ratios in parts by weight:

Gold bronze paste/powder	to	TP 272/B or TP 272/E50	=	1 : 3 - 4
Silver bronze paste	to	TP 272/B or TP 272/E50	=	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 272/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 272 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. 30 – 60 seconds at room temperature (20 – 25°). Drying time with heat application (e.g. hot air fan) and air circulation is about 10 - 20 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 272 inks.
Note: Standard shades 17, 50, 51 and 65-HD 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 272 are delivered in 1 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, TP 272 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. Pad printing inks range TP 272 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:	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 272/Y30	red	TP 272/R50	green	TP 272/G50
golden yellow	TP 272/Y50	magenta	TP 272/M50	black	TP 272/N50
orange	TP 272/O50	violet	TP 272/V50	white	TP 272/W50
scarlet	TP 272/R20	blue	TP 272/B50	varnish	TP 272/E50

STANDARD Colour Range (medium opacity)

According to colour card STANDARD 1 for pad printing inks or TP 247/ TP 272…
Availability of further standard shades upon request

citric yellow	TP 272/10-NT-NEU	dark blue	TP 272/33-NT-NEU
medium yellow	TP 272/11-NT-NEU	violet	TP 272/36-NT-NEU
dark yellow	TP 272/12-NT-NEU	light green	TP 272/40-NT-NEU
orange	TP 272/15-NT-NEU	fir green	TP 272/41-NT-NEU
light red	TP 272/20-NT-NEU	brilliant green	TP 272/42-NT-NEU
bright red	TP 272/21-NT-NEU	light brown	TP 272/50-NT-NEU
carmine red	TP 272/22-NT-NEU	dark brown	TP 272/51-NT-NEU
light blue	TP 272/30-NT-NEU	white	TP 272/60-NT-NEU
medium blue	TP 272/31-NT-NEU	black	TP 272/65-NT-NEU
ultra marine	TP 272/32-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 272/60-HD-NT-NEU	black, highly opaque	TP 272/65-HD-NT-NEU

SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes

Information about availability upon request

bronze binder	TP 272/B		

4 COLOUR PROCESS INKS (CMYK)

According to colour card STANDARD 1 for pad printing inks or TP 247/ TP 272…
Information about availability upon request

Upon request	

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

FOR FURTHER COLOUR RANGES, PLEASE REFER TO THE NEXT PAGE.

COLOUR SHADES

AB – BRONZE INKS and MG – METAL GLOSS INKS According to Bronze Colour Card			
AB Bronze Inks		**MG Metal Gloss Inks**	
rich gold	TP 272/75-AB-NT	rich gold	TP 272/75-MG-NT
rich pale gold	TP 272/76-AB-NT	rich pale gold	TP 272/76-MG-NT
pale gold	TP 272/77-AB-NT	pale gold	TP 272/77-MG-NT
copper	TP 272/78-AB-NT	copper	TP 272/78-MG-NT
silver	TP 272/79-AB-NT	silver	TP 272/79-MG-NT

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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