

Hardener:

Pad printing inks TP 260 are mixed with **hardener TP 219**.

Hardener is added to TP 260 inks at a specified ratio:

Ink : Hardener = 2 : 1 (parts by weight).

Hardeners are sensitive to humidity. Therefore, containers always have to be tightly closed.

Pot life:

- Ink mixed with hardener may only be processed within a limited period of time (=pot life)
- **Pot life of TP 260 + hardener TP 219 is approx. 6 h (at 20°C).**
Higher temperatures will reduce pot life.
- We do not recommend processing the inks for longer than the pot life as adhesion and resistance properties will then continually deteriorate, even if the ink still seems to be liquid and processable.

THINNERS / RETARDERS

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

Generally, the thinner suitable for TP 260 inks is Additive A!

The additional products listed below should only be used if the required printing quality cannot be achieved using additive A (e.g. drying too slow or too fast).

For adjustment of pad inks TP 260, the following products are available:

Thinner:	<input type="radio"/> Additive C	Extremely quick thinner, good solving power
	<input type="radio"/> VD 40	Quick thinner, very strong solving power
	<input type="radio"/> Additive B	Quick thinner, good solving power
	<input checked="" type="radio"/> Additive A	Standard thinner
	<input type="radio"/> Additive U	Standard thinner, free of cyclohexanone
	<input type="radio"/> VD 60	Slow thinner
Retarder:	<input type="radio"/> TPD	Very slow retarder
■= Preferred ○= If required		
Note:	For printing with thick and thin steel clichés sensitive to corrosion	
	<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. 5%	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 260 inks with varnish. However overprinting to achieve an enhanced protection of ink layers is possible with TP 260/E50. Overprinting should be carried out within <12 hours.

BRONZE COLOURS, MIXING OF BRONZE INKS

Bronze colours 75/AB to 79/AB and metal gloss colours 75/MG to 79/MG are available upon request.

Printers can mix bronzes themselves using bronze pastes B 75 to B 79.

For examples of colour shades please refer to our Bronze Colour Card.

These "B" bronze pastes are mixed with bronze binder TP 260/B or varnish TP 260/E50 prior to processing.

Mixing ratios in parts by weight:

Gold bronze paste to TP 260/B or TP 260/E50 = 1 : 3 - 4

Silver bronze paste to TP 260/B or TP 260/E50 = 1 : 4 - 5

Contrary to AB and MG bronze colours, B bronzes tend to oxidation. Therefore they should be overprinted, e.g. with TP 260/E50.

Note: When overprinting bronze colours (B/ AB/ MG) 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).

Overprinting should be carried out within <12 hours.

DRYING / HARDENER REACTION

Mixture of TP 260 ink/hardener is a chemically-reactive system with a high degree of cross-linkage and physical pre-drying.

- Ink dries physically by evaporation of solvents.
- Then the ink film cures by chemical cross-linkage reaction.
- **Drying and reaction temperature of hardener TP 219 must be at least 15°C!**

Drying

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, multi-layer print).
- Drying temperature.

Drying time is approx. 2 minutes at room temperature (20 – 25°). Drying time with heat application (e.g. hot air fan) and air circulation is about 30 - 40 seconds.

Complete drying may take up to several hours, also depending on the substrate.

Hardener Reaction

Basically, the special resistance properties of the printed ink film are only achieved after complete drying followed by chemical cross linkage reaction between ink and hardener. This cross linkage reaction depends on time and temperature. Until fully cured the minimum temperatures should not fall below 15°C. In addition, avoid high humidity.

Cross-linkage reaction will be much quicker using higher temperatures.

The following are guide values only:

Temperature	Time approx.	Condition of ink	Additional information
<15°C air drying		Hardener TP 219 does not react!	Ink film will not achieve any resistance
20°C air drying	20 min.	"touch-dry"	No resistance yet
	<12 h	Still good overprintability	No resistance yet
	>72 h	High degree of cross-linkage	High resistances achieved
	>5 days	Maximum degree of cross-linkage	Maximum resistances achieved
80°C oven curing	approx. 5 min.	Dry enough for overprinting	No resistance yet
	60 min.	High degree of cross-linkage	High resistance values achieved
140° oven curing	30 min.	Maximum degree of cross-linkage	Maximum resistance values achieved

Resistance Tests

Resistances should not be checked before the ink has fully cured/cross-linked:

Drying with 20°C/5 days; 80°C/>60 minutes* 140°C/30 minutes*

*After oven curing allow a cooling time (room temperature 20°C) of at least 1h.

CLICHÉ

All commercial types of clichés (polymer, thin and thick steel, ceramic) are suitable for processing TP 260 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

The longer inks dry on clichés, pots and tools the harder will be their removal due to the chemical cross-linkage reaction. Therefore, always remove ink residues as soon as possible using our universal cleaning agents URS, URS 3 or thinner VD 40.

PACK SIZE

Pad printing inks TP 260 are delivered in 1 litre containers. Other pack sizes are available upon request.

SHELF LIFE

In closed original containers, TP 260 inks generally have a shelf life of 5 years from date of production. Hardener TP 219 has a shelf life of 14 months from date of production, also in closed original containers.

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"; e.g. "Processing of 2-component Inks"

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 260/Y30	red	TP 260/R50	green	TP 260/G50
golden yellow	TP 260/Y50	magenta	TP 260/M50	black	TP 260/N50
orange	TP 260/O50	violet	TP 260/V50	white	TP 260/W50
scarlet	TP 260/R20	blue	TP 260/B50	varnish	TP 260/E50
STANDARD (medium opacity)					
According to colour card STANDARD 2 for pad printing inks or TP 218/ TP 260... Availability of further standard shades upon request					
citric yellow	TP 260/10-NT	carmin red	TP 260/22-NT	light green	TP 260/40-NT
medium yellow	TP 260/11-NT	pink	TP 260/25-NT	fir green	TP 260/41-NT
dark yellow	TP 260/12-NT	light blue	TP 260/30-NT	brilliant green	TP 260/42-NT
orange	TP 260/15-NT	medium blue	TP 260/31-NT	dark brown	TP 260/51-NT
ochre yellow	TP 260/17-NT	ultra marine	TP 260/32-NT	white	TP 260/60-NT
light red	TP 260/20-NT	dark blue	TP 260/33-NT	black	TP 260/65-NT
bright red	TP 260/21-NT	violet	TP 260/37-NT		
STANDARD Colour Range HD (high opacity)					
According to colour card STANDARD HD for pad printing inks Availability of further standard HD shades upon request					
citric yellow, highly opaque	TP 260/10-HD-NT	violet, highly opaque	TP 260/37-HD-NT		
medium yellow, highly opaque	TP 260/11-HD-NT	light green, highly opaque	TP 260/40-HD-NT		
bright red, highly opaque	TP 260/21-HD-NT	white, highly opaque	TP 260/60-HD-NT		
carmin red, highly opaque	TP 260/22-HD-NT	black, highly opaque	TP 260/65-HD-NT		
light blue, highly opaque	TP 260/30-HD-NT				
SPECIAL PRODUCTS: Special Colour Shades, Varnishes, Pastes					
Information about availability upon request					
white, matt	TP 260/60-MT	matt paste	TP 260/MP		
black, matt	TP 260/65-MT-NT	bronze binder	TP 260/B		
black, low-grade PAH	TP 260/68-NT	overprint varnish, matt	TP 260/70-MT		
4 COLOUR PROCESS INKS (CMYK)					
According to colour card STANDARD 2 for pad printing inks or TP 218/ TP 260...					
process yellow	TP 260/180-NT	process black	TP 260/65-NT		
process magenta	TP 260/181-NT	transparent paste	TP 260/TP		
process cyan	TP 260/182-NT				
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.

