

Tampapol TPY



Pad printing ink for ABS, rigid PVC, pre-treated polyethylene and polypropylene, varnished surfaces, thermosetting plastics, and metal

Glossy, good opacity, fast drying 1- or 2-component ink system, resistant to chemicals

Vers. 6
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Field of Application

Substrates

Tampapol TPY is extremely well-suited to print onto ABS, rigid PVC, pre-treated polyethylene (PE) and polypropylene (PP), thermosetting plastics, metal, varnished surfaces, wood, paper, and cardboard. By adding Hardener H 1 or H 2, Tampapol TPY achieves increased resistance and adhesion characteristics.

When printing onto polyethylene or polypropylene, please make sure to pre-treat the surface of your substrate by flaming or Corona discharge as usual.

As per our experience, you can achieve a very good adhesion with the Tampapol TPY with a surface tension of at least 42-48 mN/m. On polypropylene, you can also apply a thin film of our colourless Primer P 2 for surface pre-treatment.

For multiple colour printing, please consider that you should not flame the substrate between print sequences, as this may reduce intercoat adhesion.

Since all the print substrates mentioned may be different in printability even within an individual type, preliminary trials are essential to determine the suitability for the intended use.

Field of use

Tampapol TPY is mainly used to print onto packaging made of polyethylene, polypropylene or rigid PVC.

Characteristics

Pot life

The pot life (processing period) at room temperature (approx. 20°C) will be about 12-14 h with H 1 and about 8-10 h with H 2. Higher temperatures reduce pot life. If the mentioned times are exceeded, the ink's adhesion and resistance may be reduced, even if the ink characteristics show no noticeable change.

Drying

Physically fast drying. Touch-dry at 20°C after approx. 2 min, at 30°C after approx. 30-40 sec. The addition of Hardener H 1 or H 2 will extend the drying time.

The times mentioned above vary according to substrate, depth of cliché, drying conditions, and the auxiliaries used.

Parallel to physical drying (i. e. to the evaporation of the solvents used), the actual hardening of the ink film is caused by the chemical cross-linking reaction between ink and hardener. Chemical cross-linking can be accelerated by higher temperatures.

The processing and curing temperature should not be lower than 15°C as irreversible damage can occur. Also avoid high humidity for several hours after printing as the hardener is sensitive to humidity.

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Fade resistance

Only pigments of high fade resistance are used in the Tampapol TPY range.

Shades mixed by adding overprint varnish or other colour shades, and especially white, have a reduced fade and weather resistance depending on their mixing ratio. The fade resistance also decreases if the printed ink film thickness is reduced.

The pigments used are resistant to solvents and plasticizers.

Stress Resistance

After proper and thorough drying, the ink film exhibits outstanding adhesion as well as rub, scratch, and block resistance and is resistant to oils, greases, aqueous acids, alkalines, and alcohol.

In some cases surface stability as well as adhesion and resistance to solvents may be improved by adding 10% of Hardener H 1 or H 2.

Clichés

All commercially available clichés made of photopolymer material, thin steel, and chemically hardened steel (10 mm) can be used. We recommend a cliché depth of 21-28 µm.

Printing pads

As per our experience, all common printing pads consisting of materials cross-linked by condensation or addition can be used.

Printing machines

Tampapol TPY is suitable for closed ink cup systems, as well as for open ink wells. Depending on type and usage of the machine, it is to accordingly adjust type and amount of the thinner used.

Range

Basic shades

Refer to colour chart 'System Tampacolor'

TPY 920	Lemon	TPY 950	Violet*
TPY 922	Light Yellow *	TPY 952	Ultramarine Blue*
TPY 924	Medium Yellow	TPY 954	Medium Blue
TPY 926	Orange	TPY 956	Brilliant Blue*
TPY 930	Vermilion *	TPY 960	Blue Green
TPY 932	Scarlet Red	TPY 962	Grass Green *
TPY 934	Carmine Red	TPY 970	White
TPY 936	Magenta*	TPY 980	Black
TPY 940	Brown		

(*semi-transparent/transparent)

Further shades available

TPY 470 Rotary White, matt

High-opaque shades

TPY 122	Light Yellow
TPY 130	Vermilion Red
TPY 152	Ultramarine Blue
TPY 162	Grass Green

All shades are intermixable. To maintain the special characteristics of this outstanding ink range, TPY should not be mixed with other ink types.

All basic shades according to System Tampacolor as well as the high-opaque shades are all included in our Marabu-ColorFormulator and are building the calculation basis for individual colour matching formulas. The basic shades are further the basis for colour matches according to the common Pantone®, HKS®, RAL®, and Marabu System 21 colour reference systems. All formulas are stored in the Marabu-ColorManager 2 (MCM 2) software.

The high-opaque formulas are additionally available in MCM 2 marked with + + behind the reference name. These formulas have been developed by using the System Tampacolor formulas for basic and high-opaque shades, excluding the semi-transparent, resp. transparent shades.

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Shades for 4-colour process prints

TPY 429	Process Yellow (Yellow)
TPY 439	Process Red (Magenta)
TPY 459	Process Blue (Cyan)
TPY 489	Process Black (Black)

Press-ready gold and silver shades

TPY 191	Silver
TPY 192	Rich Pale Gold
TPY 193	Rich Gold

Mixtures of TPY 191-193 with TPY 950 or TPY 952 have a limited shelf life. Due to this, please prepare only such quantities which will be processed in the course of 4-5 days (20°C).

Clears

TPY 910	Overprint Varnish, can also be used as bronze binder
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Bronzes

(to be mixed with Overprint Varnish TPY 910)

S 181	Aluminium
S 182	Rich Pale Gold
S 183	Rich Gold
S 184	Pale Gold
S 186	Copper
S 190	Aluminium, rub-resistant

Due to their chemical structure, Pale Gold S 184 and Copper S 186 have a strongly reduced processing time. Please generally prepare fresh mixtures only as they cannot be stored and must be processed immediately.

The pigments used in the above mentioned standard shades, based on their chemical structure, correspond to the EEC regulations EN 71/part 3, safety of toys - migration of specific elements. All colours are suited for printing onto toys.

Auxiliaries

Thinner:	TPV TPV 2, fast thinner TPV 3, slow thinner
Hardener:	H 1 H 2, fast hardener HT 1, heat-reactive
Mixing ratio:	10 p. ink : 1 p. hardener
Retarder:	SV 1 VP, Retarder Paste
Matting product:	MP, Matting Powder
Antistatic Paste:	AP
Opaquing Paste:	OP 170
Primer:	P 2, for polypropylene
Cleaner:	UR 3
Printing Modifier:	ES, addition: 0 - max. 1%

To adjust printing viscosity, it is generally sufficient to add 10-20 % of Thinner TPV to the ink. Thinner TPV 2 can be used for fast printing, TPV 3 for slow printing requirements.

For the printing of very fine motives, Retarder SV 1 or Retarder Paste VP may be added to the ink. An excessive addition may result in ink transfer problems.

Attention

For an ink mixture containing retarder, only thinner should be used for additional thinning during the print run.

By adding Matting Powder MP, the glossy effect of the ink is reduced to a silky or semi-matt finish. The addition of 2-4% Matting Powder MP (in case of 970 White, max. 2%) will not influence significantly the resistances of the ink but reduce its opacity.

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By adding Opaquing Paste 170, the opacity of colour shades can significantly be increased without influencing the chemical and dry abrasion resistance considerably. Maximum quantity to be added is 15%. OP 170 is not suitable for using it with white shades.

Printing Modifier ES contains silicone. It can be used to rectify flow problems on critical substrates by adding up to 1% by weight to the ink. If an excessive amount of printing modifier is added, flow problems are increased and adhesion may be reduced, especially when overprinting.

Cleaning

To clean ink containers, clichés, and tools, please use our Cleaner UR 3.

Recommendation

The ink should be stirred well before printing. To protect the ink in opened containers against excessive drying, it can be carefully covered with a layer of thinner which can then later be stirred into the ink prior to printing.

Labelling

For our ink type Tampapol TPY and its additives and auxiliaries, there are current Material Safety Data Sheets according to EC-regulation 91/155 informing in detail about all relevant safety data including labelling according to the present EEC regulations as to health and safety labelling requirements.

Such health and safety data may also be derived from the respective label.

The ink has a flash point between 21°C and 100°C.

Note

Please refer to the information in our technical data sheets of pad printing inks. Our technical advice whether spoken, written, or through test trials corresponds to our current knowledge to inform about our products and their use. This is not meant as an assurance for certain properties of the products nor their suitability for each application.

You are, therefore, obliged to conduct your own tests with our supplied products to confirm their suitability for the desired process or purpose. The selection and testing of the ink for specific application is exclusively your responsibility.

Should, however, any liability claims arise, they shall be limited to the value of the goods delivered by us and utilised by you with respect to any and all damages not caused intentionally or by gross negligence.