

TPR

Pad printing ink for rigid PVC, Polystyrene, ABS, SAN, polycarbonate, acrylic, and varnished surfaces

Glossy, good opacity, very fast drying 1- or 2-component system, resistant to petrol

Vers. 1
2002
03 Apr

Field of Application

Substrates

Tampastar TPR is particularly suited to print onto rigid PVC, polystyrene (PS), ABS, SAN, polycarbonate (PC), acrylic (PMMA), some types of soft PVC, wood, paper, and cardboard. By adding hardener TPH 1, resp. H 1 or TPH 2, resp. H 2, Tampastar TPR adheres excellently to many other substrates, such as varnished surfaces, thinly anodized aluminium or some thermosetting plastics.

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

Field of use

The glossy and very fast drying ink Tampastar TPR is especially suited for high-quality products such as for example cosmetic packaging, housings, and other items requiring high resistance.

Characteristics

Drying

Physically very fast drying. Dries at 20°C within 90 sec. (for overprintability), at 30°C within 15 sec. The addition of Hardener TPH 1, resp. H 1 or TPH 2, resp. 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 crosslinking reaction between ink and hardener. Chemical crosslinking 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.

Pot life

The pot life (processing period) at room temperature (approx. 20 °C) will be about 12-14 h with TPH 1, resp. H 1 and about 8-10 h with TPH 2, resp. 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.

Fade resistance

Only pigments of high fade resistance are used in the Tampastar TPR 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.

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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 petrol. Most shades can also be high frequency welded (exception: shade 980 Black and 73 Black).

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

Range

Refer to the shade card "System Tampacolor".

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

*semi-transparent/transparent

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

Tampastar TPR is included in our computerised colour matching system Marabu-mix.

By using these basic shades in accordance with the mixing ratios provided by the Marabu-ColorManager software, it is possible to produce shades of the popular colour reference systems PANTONE®, HKS®, RAL®, and Marabu System 21.

Further shades available

TPR 170 Opaque White

Shades for 4-colour process prints

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

Press-ready gold and silver shades

TPR 191 Silver
 TPR 192 Rich Pale Gold
 TPR 193 Rich Gold

Clears

TPR 409 Transparent Base
 TPR 910 Overprint Varnish, can also be used as bronze binder

Bronzes

(to be mixed with Overprint Varnish TPR 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 and Copper have a reduced processing time. Please prepare mixtures daily, as they cannot be stored and must be processed within 8 h.

For the processing of metallics, we refer you to our separate data sheet "Bronze Inks".

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.

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Auxiliaries

Thinner:	TPV TPV 2, fast thinner TPV 3, slow thinner
Hardener:	TPH 1, resp. H 1 TPH 2, resp. H 2, fast hardener HT 1, heat-reactive
Mixing ratio:	10 p. ink : 1 p. hardener
Retarder:	SV 1 VP, Retarder Paste
Matting product:	ABM, Matting Paste MP, Matting Powder
Antistatic Paste:	AP
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, the 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.

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 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 be later stirred into the ink prior to printing.

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Labelling

For our ink type Tampastar TPR 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. Since the ink is not considered as a flammable liquid due to its pastous nature, any specific regulations for the handling of flammable liquids do not apply.

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.