Tampastar TPR

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

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

Vers. 9
2009
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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 H 1 or 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.

TPR may be used, by an appropriate printing process, to print on to the non food-contact surface of any material or article intended to come into contact with foodstuffs. However, full compliance with the regulation (EC) Nr. 2023/2006 must be ensured. In case of any queries please contact our Marabu product safety department directly.

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 very fast drying. Touch-dry at 20° C after 60 sec, at 30° C after 15 sec. The addition of Hardener H 1 or H 2 will extend the drying time.

The times mentioned 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.

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.

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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 petrol.

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 18-21 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
Tampastar TPR 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'

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)

Further shades available
TPR 170 Opaque White

High-opaque shades
TPR 122 Light Yellow
TPR 130 Vermilion Red
TPR 152 Ultramarine Blue
TPR 162 Grass Green

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

The 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.

They 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.

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

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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 S 184 and Copper S 186 have a reduced processing time. Please generally prepare mixtures for one working day only as they cannot be stored and must be processed within 8 h.

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
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 Paste ABM or 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 the case of 970 White, max. 2%) will not influence significantly the resistances of the ink but reduce its opacity.

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 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 1907/2006 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.

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