

One and two component Pad Printing Ink TPC 528

Universal, high-resistant 2 component pad printing ink for industrial and technical applications.

High-covering, silk gloss pad printing ink on the basis of very resistant elementary raw materials for the printing of various kinds of soft and hard plastic materials and metals. Userfriendly system in the technical/industrials fields for long-term outdoor application.

Printing stock

The range of possible background materials includes various kinds of plastic materials such as hard PVC, PET modifications (-A,-E,-P), Polyamide and Polyetherimide, Polystyrol and its modifications such as ABS, SAN, etc., acrylic glass (PMMA - risk of corrosion due to tensile stress with respect to injection moulded parts) and Polycarbonate, pretreated Polyolefine, Tyvek, manifold coated surfaces and layers as well as Cellulose acetate and CAB, papers and cardboard's. To these belong various metals, aluminium (raw, anodized, brushed), compound materials such as Alucobond, Dibond and Vekaplan AL, wood and Polyacetate (POM) with follow-up flaming. Cross hatch tests plus tape tests including fingernail test processed at two components (4:1 with hardener HM) were made upon 100h rest phase under normal conditions.

On the basis of the great variety of plastics and the different modifications as well as the inclusion of Co-Polymers and recycling materials, preliminary tests to assess the suitability of the ink are indispensable.

Application

Applicable for a large range of plastics and metals used for technical purposes.

The basic raw materials used were well chosen for extremely high demands and show highest chemical and excellent mechanical resistances. The share of epoxide of the basic ink enables limited outdoor application at an inferior to medium resistance level. At longer-term outdoor application, there may result chalking effects with increasing inclination to yellow discoloration.

Properties and handling

This modern pad printing system may be applied for open and closed machine system. The application of raw materials containing iron was left off in order to avoid magnetization and resulting printing problems with closed systems.

The ink rheology has been chosen in such a manner that an excellent fluidity enables full-surface printing just as the internal thixotropy guarantees the printing of finest scripts and lines.

The solvents used ensure an optimum ink absorption and taking off as well as quick drying on the printing stock.

The ink system to be processed at one or two components dries both by air and heat. (f.i. 140 °C/20-30 min.)

Additives

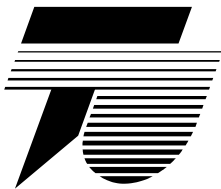
TPC 528 has been adjusted to such an extent that - at normal reduction of viscosity by the universal pad printing thinner VM - there results a constant longerterm consistency for open and closed machine systems (quantity added according to conditions 10-15 weight-%).

The rotative application requires a higher dilution with VM.

To achieve shorter cycle or drying times, we recommend the fast thinner VO or the accelerator VR.

To achieve increases resistances, hardeners of HM for internal application and HA for long-term outdoor application can be added at a ratio of 5:1. The resulting to time depends on the colour shade, but is always more than 8 hours.

Other additives offering useful possibilities of modification are specified in the Technical Data Sheet TPC 528 additives for pad printing.



Technical Data Sheet

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The addition of additives leads to a change of the actual product properties so that the spectrum or printing stock as well as the resistance may be modified.

Choice of pigments

TPC 528 being high-covering mono-pigmented and free of heavy metals according to the Euro-Norm 71, part 3, points to the future so that in many cases white underlaying to achieve the colour shades wanted becomes superfluous. A useful choice of covering basic shades is at the disposal of the user to cover practically the whole colour spectrum:

Standard Shades

TPC 528/10-NT light yellow
TPC 528/11-NT dark yellow
TPC 528/12-NT orange yellow
TPC 528/15-NT orange
TPC 528/17-NT ochre
TPC 528/20-NT light red
TPC 528/21-NT red
TPC 528/22-NT dark red
TPC 528/25-NT pink
TPC 528/30-NT luminous blue
TPC 528/31-NT blue
TPC 528/32-NT dark blue
TPC 528/33-NT black blue
TPC 528/34-NT light blue
TPC 528/37-NT violet
TPC 528/40-NT light green
TPC 528/41-NT dark green
TPC 528/42-NT turquoise
TPC 528/50-NT light brown
TPC 528/51-NT dark brown
TPC 528/65-NT black

Other shades can be manufactured subject to our special ink shade regulation.

Mixing System Base Colours

| | |
|------------------|---------------|
| TPC 528/PC-01-NT | Lemon yellow |
| TPC 528/PC-02-NT | Corn yellow |
| TPC 528/PC-03-NT | Orange |
| TPC 528/PC-04-NT | Carnation red |
| TPC 528/PC-05-NT | Violet |
| TPC 528/PC-06-NT | Cobalt blue |
| TPC 528/PC-07-NT | Green |
| TPC 528/PC-11-NT | White |
| TPC 528/PC-12-NT | Black |

These high-covering basic shades are complemented by the transparent inks:

| | |
|------------------|---------------------|
| TPC 528/PC-14-NT | Yellow transparent |
| TPC 528/PC-15-NT | Red transparent |
| TPC 528/PC-16-NT | Magenta transparent |
| TPC 528/PC-17-NT | Blue transparent. |

These transparent inks are suitable both to increase the brilliance at ink mixing and to produce metal colour shades by adding effect bronzes.

With respect to the halftone ink, the press-ready ink systems:

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|---------------|-------------|
| TPC 528/80-NT | Yellow |
| TPC 528/81-NT | Magenta |
| TPC 528/82-NT | Cyan |
| TPC 528/83-NT | Black/depth |

as well as cutting pastes

| | |
|------------|-------------------|
| TPC 528/TP | Transparent paste |
| TPC 528/TX | Thixotropy paste |

are available.

Various standard varnishes are at the disposal of the user:

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|------------|-------------|
| TPC 528/MT | Mat varnish |
|------------|-------------|

which may be completed by individual special adjustments.

As metal effect inks the product pallet offers:

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|---------------|------------------------|
| TPC 528/79-NT | Silver, abrasion-proof |
| TPC 528/74-NT | Britannia silver |
| TPC 528/76-NT | Gold clear |
| TPC 528/77-NT | Gold medium |
| TPC 528/78-NT | Copper |

and the various special effects which may be completed according to customer's requirements. To these also belong the non metal effect bronzes.

All above mentioned colour adjustments are pigmented free of heavy metal and correspond to the regulations of EN 71, Part 3 (safety of toys, migration of specific elements). The inks show a high light-fastness of 6-8 according to the Blue Wool Scale (DIN 16525).

It has to be noted that strong lightening by white or clear varnish may cause a reduction of the light-fastness.



Drying

The composition of the solvents ensures both long-lasting stability of the viscosity in the ink troughs and ink containers and quick release of solvents in the dabbing process. This pad printing system does not show any corona formation, ensures an unproblematic transfer as well as quick drying on the printing stock. In order to achieve a faster fusion of hardener and ink, corresponding heat aggregates (Leister, furnace; IR-circulating air, etc.) may be used.

Universal thinner VM usefully combines the above mentioned properties and mostly makes the use of special retarders unnecessary.

Printing plates

Pad printing ink TPC 528 does not contain any ingredients which attack polymer printing blocks or cause oxidation's on steel printing blocks. Both printing methods are suitable, whereby a screening (positive contact screen) is advantageous for the production in most cases. Etching depths of approx. 22µm, depending on the motif, are practicable and do not require any special preliminary tests.

Pads

The choice of the correct type of pad, shape and hardness depends on the printing stock. It is independent of pad printing ink TPC 528 which accepts all types of pads. The handling of pads is generally binding, i.e. delubrication of new printing pads, careful handling, cleaning with adhesive tape, etc.

Cleaning

The pad printing inks of TPC 528 can be removed from printing blocks and working material without any problems by commercial solvent-based cleaning agents. We recommend to use Universal cleaners RE and RM.

If the cleaning of the printing blocks by adhesive tapes does not work, cleaning agent industrial alcohol or ethanol alcohol may be applied by a cotton towel.

Shelf life

At normal conditions (little changes in temperature, medium temperature between 20-35 °C, humidity

20-70%), these pad printing systems have a shelf life of two years without losing their product properties.

Packing

As standard packing of 1 kg PE containers are available.

Removed residues of varnish can be supplied to the Polyolefin-Recycling. Packaging containing unhardened residues of varnish are subject to the special waste disposal regulations (waste disposal key No. 55509 Germany, waste disposal key No. 1640, Switzerland).

Marking

Read material safety data sheets prior to processing.

The material safety data sheets according to (EG) 1907/2006 contain marking in compliance with the regulation on dangerous preparations (1999/45/EG) as well as instructions for precautions when processing, handling and storing as well as first aid.

The information given in the material safety data sheet refers to processing as described in this product data sheet.

The statements in our leaflets 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. They serve to advise our business associates, but it is absolutely necessary to make your own printing tests under local conditions, with regard to the intended purpose prior to starting the job.

- All former leaflets are no longer valid.

These indications are based on laboratory test and practical experience. Our advice for technical applications is based on our best knowledge and can only be considered as guideline. It does not relieve you of making your own tests.

In case of doubt please contact our technical advisors. The application, use and processing of the products delivered by us are beyond our control. This is subject to



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