

Tampagraph TPGR



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

Glossy, high opaque, fast drying 1- or 2-component system, very good resistance against alcohol

Vers. 01
2006
13 Sept

Field of Application

Substrates

Tampagraph TPGR is particularly suited to print onto polystyrene (PS), ABS, SAN, polycarbonate (PC), acrylic (PMMA), and rigid PVC. By adding Hardener H 1 or H 2, Tampagraph TPGR 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 high-opaque, glossy and fast drying ink Tampagraph TPGR is especially suited to decorate all kinds of advertising goods.

Characteristics

Pot life

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

Fade resistance

Only pigments of good to high fade resistance are used for the Tampagraph TPGR range.

Shades mixed with overprint varnish or other colour shades, and especially white, have a reduced fade and weather resistance depending on their mixing ratio. 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 has a very good resistance to alcohol. In some cases, surface stability as well as adhesion and resistance to solvents may be improved by adding 10% 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 20-28 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

Tampagraph TPGR 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

High-opaque shades

| | |
|----------|-------------------------------|
| TPGR 122 | Light Yellow, high-opaque |
| TPRR 124 | Medium Yellow, high-opaque |
| TPGR 130 | Vermilion Red, high-opaque |
| TPGR 132 | Scarlet Red, high-opaque |
| TPGR 152 | Ultramarine Blue, high-opaque |
| TPGR 156 | Brilliant Blue, high-opaque |
| TPGR 162 | Grass Green, high-opaque |
| TPGR 170 | Opaque White |
| TPGR 180 | Opaque Black |

All shades are intermixable. To maintain the special characteristics, TPGR should not be mixed with other ink types.

The high-opaque shades are all included in our Marabu-ColorFormulator MCF building the calculation basis for individual colour matching formulas.

Further shades available

TPGR 191 Silver

Clears

TPGR 910 Overprint Varnish, can also be used as bronze binder

Bronzes

(to be mixed with TPGR 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 previously 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 % |

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To adjust printing viscosity, it is generally sufficient to add 10-20% 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 170 White, max. 2%) will not influence significantly the resistances of the ink but reduce its opacity.

By adding Opaquing Paste OP 170, the opacity of colour shades may be further increased without influencing the chemical and dry abrasion resistance considerably. Maximum quantity to be added is 10%. 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.

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.

Cleaning

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

Labelling

For our ink type Tampagraph TPGR 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.