



SERIES T90



Technical Data Sheet

Pad printing inks

1. APPLICATION FIELDS:

UV curing ink for rotary pad printing on ABS, acrylic glass, lacquered surfaces, polycarbonate, pre-treated polyethylene (PE) and polypropylene (PP), polystyrene, polyurethane and as two component ink on PET/ PETG. The ink is typically used for the decoration of furniture profiles, skirting boards or other products of the furniture industry.

Substrates may differ in their chemical structure or method of manufacture. A test for suitability must always be carried out before printing. Antistatic, Mould Release Agents and Slip Additives may have negative effects on adhesion, and should be detected and removed prior to printing.

2. CHARACTERISTICS:

This high glossy and very reactive pad printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility.

A special product test is recommended prior to production. The raw materials used, meet with the limits stipulated by the EEC regulation EN 71 (Safety of Toys), part 3 (Migration of Certain Elements) of December 1994.

The inks of this series exhibits good solvent and water resistance after 12 hours.

3. RANGE OF COLOURS:

The basic ink mixing system consists of 12 basic colours and may be used for the mixing of a wide colour shade range. Field proven mixing formulations exist for Pantone®, HKS, RAL, NCS, etc..

3.1 Basic colours:

Light Yellow	M 1	T90-2463
Medium Yellow	M 2	T90-2538
Orange	M 3	T90-30061
Light Red	M 4	T90-3926
Red	M 5	T90-3927
Pink	M 6	T90-3928
Violet	M 7	T90-50000
Blue	M 8	T90-5995
Green	M 91	T90-5996
White	M 11	T90-1169
Black	M 12	T90-9159
Clear Base	M 0	T90-0007

3.2 Special Products:

3.2.1 High Opacity Formulations:

White (high opacity) T90-1168

3.3 Euro-Colours / 4-Colour Process Printing Inks:

For 4-colour process printing according to DIN 16538, 4 Euro-basic colours are available:

Euro-Yellow	T90-2506
Euro-Magenta	T90-3990
Euro-Cyan	T90-50058
Halftone Black	T90-9159

4. OVERPRINTING VARNISHES:

The UV pad printing inks can be overprinted with the below varnishes in order to obtain a certain visual aspect and / or protect the prints against mechanical and chemical influences.

High gloss varnish	960 UV 423
Semi-gloss varnish	960 UV 424
Matt varnish	960 UV 425

5. ADDITIVES:

5.1 Thinner:

The inks of the T 90 UV series are ready to use. If further viscosity reduction is desired, UV thinner may be added. In order to increase curing, the addition of reactive thinner is recommended.

In general, no solvent-based thinners should be used due to flammable nature of the solvents.

UV Thinner (max. addition: 2-5 %) T90 UV 0014
Reactive Thinner (max. addition: 2-5 %) T90 UV 0010

5.2 Adhesion Modifier:

In the case of particularly high resistance requirements, the addition of adhesion modifier is recommended. However the addition of adhesion modifier to UV curable ink will lead to a processing time (potlife) of 4-8 hours at 21°C depending on the colour shade. Higher processing temperatures will result in a shorter potlife.

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Overprinting must take place within 12 hours at 21°C in case an adhesion modifier is added.

Adhesion Modifier (max. add.: 2 %) HV 100 VR 1259

6. PROCESSING INSTRUCTIONS:

6.1 Pre-treatment:

Pre-treatment of polyolefines (PE/PP) must be performed by Flame Treatment or CORONA-discharge in order to insure the adhesion of the UV screen printing ink to the substrate. In case of PE, surface tension needs to be at least 42 mN/m (Dynes/cm), in case of PP at least 52 mN/m (Dynes/cm).

6.2 Cliché/Printing Equipment/Pad:

The T 90 series can be used with all common rotary pad printing machines.

We advise to use ceramic or steel clichés with an etching depth of 10 - 12 µm. The hardness of the rollers (pads) should be between 25 – 60 shore.

6.3 Curing Conditions:

The varying UV absorption of the individual colours results in a range of curing properties depending on colour and opacity. All colours of the T90 series can be cured by the use of medium pressure mercury vapour lamps (at least 160 W/cm).

The optimum energy output is 100 - 200 mJ/cm², measured with Kühnast-UV-integrator under lab condition. UV curing is followed by a 24 hour post-cure phase after which the ink film is fully cured and has its final properties.

However, it must be noted, that low radiation intensity, excessive machine speeds or excessive film thickness can have a negative influence on the curing properties and adhesion.

Un-cured prints are considered a hazardous waste. Therefore, it is recommended to cure misprints under the UV lamp as a matter of principle. After curing, spoilage can be disposed by conventional methods and may be incinerated without causing any difficulties.

7. CLEANING:

Clichés, squeegees and so on can be cleaned with the RUCO Universal cleaner 32 335. For the cleaning of the pad please see to the application references of the pad

manufacturers. If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn.

Universal Cleaner	UR 32 335
Cleaner for cleaning equipment	WR 100 VR 1240C
Bio degradable Cleaner	BR 100 VR 1272

8. SHELF LIFE:

A shelf life of 12 months is guaranteed when storing the inks at 21°C and in the original packing container, excluded bronze colours and effect inks (6 month). At higher storage temperatures the shelf life will be reduced.

9. PRECAUTIONS:

For further information on the safety, storage and environmental aspects concerning these products, please refer to the Material Safety Data Sheet (MSDS).

Additional technical information may be obtained from our staff of the Technical Application Department.

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