



# 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.

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

A special product test is recommended prior to production.

### 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
Blue	M 91	T90-5996
Green	M 10	T90-6706
White	M 11	T90-1447
Black	M 12	T90-9350
Clear Base	M 0	T90-0007

#### 3.2 Special Products:

##### 3.2.1 High Opacity Formulations:

White	(high opacity)	T90-1168
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### 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	960UV423
Semi-gloss varnish	960UV424
Matt varnish	960UV425

### 5. ADDITIVES:

#### 5.1 Thinner:

The inks of the T90 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%)	T90-0014
Reactive Thinner	(max. addition: 2-5%)	T90-0010

#### 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 (pot life) of 4-8 hours at 21 °C depending on the colour shade. Higher processing temperatures will result in a shorter pot life.

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

Adhesion Modifier (max. addition 2 %)	100VR1259
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### 6. PROCESSING INSTRUCTIONS:

#### 6.1 Pre-treatment:

Pre-treatment of polyolefins (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 T90 series can be used with all common rotary pad printing machines.

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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/cm<sup>2</sup>, 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 32335. 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	32335
Cleaner for cleaning equipment	100VR1240C
Bio degradable Cleaner	100VR1272

## 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 Product Management Department.

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