

SERIES T01

HALOGEN FREE



Technical Data Sheet

Pad Printing Inks

1. APPLICATION FIELDS:

Versatile two component ink for pad printing on

- Acrylic
- lacquered surfaces
- metal
- thermosets
- polyamide (PA)
- polycarbonate (PC)
- pre-treated polyethylene (PE) and polypropylene (PP)
- polyurethane (PU).

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, physically drying and chemical reactive pad printing ink exhibits

- good mechanical and chemical resistance
- good flexibility
- constitutionally free of halogen containing ingredients (fluorine, chlorine, bromine)
- free of cyclohexanon and aromatic hydrocarbons.

The colour shades of T01 are light fast and guarantee high opacity. A special product test is recommended prior to production.

The raw materials used meet with the limits stipulated by the standard EN 71 (Safety of Toys), part 3 (Migration of Certain Elements) of December 1994.

3. RANGE OF COLOURS:

The basic ink mixing system consists of 9 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	T01-2408HF
Medium Yellow	M 2	T01-2409HF
Orange	M 3	T01-30137HF
Red	M 5	T01-30138HF
Pink	M 6	T01-30139HF
Violet	M 7	T01-50103HF
Blue	M 8	T01-50104HF
White	M 11	T01-1088HF
Black	M 12	T01-9053HF
Clear Base		T01-0026

3.2 Special Products:

High Opacity Formulations:

White (high opacity) T01-1089HF

3.3 Bronze Colours:

Gold T01-4172HF
Silver T01-4173HF

4. ADDITIONAL PRODUCTS:

Raster paste can be added to reduce "Dot Gain" and to achieve sharper dots.

Overprinting Lacquer T01-011
Raster Paste (max. addition: 10 %) T01-0018

5. ADDITIVES:

5.1 Thinner:

Prior to production, the pad printing ink has to be adjusted to the printing viscosity by the addition of thinner.

Thinner, very fast (addition: 15 - 25 %) 100VR1185
Thinner, standard (addition: 15 - 25 %) 100VR1279
Thinner for glass (addition: 15 - 25 %) 100VR1390

5.2 Retarder

Retarder will influence the drying time of the ink under different climate conditions. Retarder 100VR1427 is a medium drying retarder.

While using the ink under extreme climate conditions (Temperature higher than 28°C) it is recommended to use the retarder 100VR1427 as a thinner to adjust the viscosity of the ink.

Retarder, standard (addition 5 – 10 %) 100VR1427

It must be noted that an excessive addition of retarder may negatively influence the ink transfer and bulk good resistance, due to the slow evaporation of the retarder.

Special Retarder, very slow (addition max. 10%) 100VR1170

5.3 Hardener:

Hardener 100VR1433 is the standard hardener. The mixing ratio is 5 parts of ink with 1 part of hardener. At room temperature of 20° C a pot life of approximately 12 hours can be achieved.

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For printing onto glass hardener 100VR1294 is recommended in order to achieve a better adhesion and resistance. Afterwards a heat treatment of 180° C for 25 min is required.

Hardener, standard (add max. 20%)	100VR1433
Hardener, for printing on glass (add max. 5%)	100VR1294

Please note that the final chemical and physical resistance of the ink is only achieved after 36 hours at room temperature of 20° C.

During processing and drying of the printed ink, the temperature should not be lower than 15° C otherwise the chemical crosslinking is stopped. Also avoid high humidity for several hours after printing as the hardener is sensitive to humidity. While using hardener please note that multi-colour jobs have to be printed within 36 hours. The completely dried ink can not be overprinted.

5.4 Levelling Agent:

The levelling of the ink surface can be optimised by the use of a levelling agent. It must be noted that excessive addition of levelling agent can have a negative influence on the overprintability.

Levelling Agent (max. add.: 0,5-1 %) VM 100VR133

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 pad 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 T01 HF series can be used with all pad printing machines with clichés and pads currently used for industrial applications. However, it has to be noted that type and etching depth of the cliché, mould and hardness of the pad, the adjustment of the ink (addition of thinner and/or retarder) as well as printing speed may influence the printing result.

6.3 Curing Conditions:

At room temperatures (21° C) the inks of the T01 HF series are grip dry within 5 – 7 minutes. While adding hardener to

the ink, drying of the ink will take approximately 36 hours at room temperature. To accelerate the ink drying onto the substrate the use of a hot air blower or infrared lamps is recommended.

It must be noted that after heat treatment a cooling section must be installed in order to avoid that the printed parts stick together.

7. CLEANING:

Clichés and other printing materials can be cleaned with the RUCO Universal cleaner 37220. It must be noted that the pad does not come into contact with solvents. 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	37220
Cleaner for cleaning equipment	WR	100VR1240C
Bio degradable Cleaner	BR	100VR1272

8. SHELF LIFE:

A shelf life of 24 months is guaranteed when storing the inks at 21°C and in the original packing container.

Exceptional bronze colours: a shelf life of 6 months is guaranteed when storing the inks at 21°C and in the original packing container.

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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