

### 1. APPLICATION FIELDS:

Versatile two component ink for pad printing on ABS, rigid PVC, lacquered surfaces, metal, polyamide, polycarbonate, pre-treated polyethylene (PE) and polypropylene (PP), rigid polyester and other plastics. 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 glossy, physically drying and chemical reactive pad printing ink exhibits good mechanical and chemical resistance, as well as a good flexibility. The colour shades of T38 are light fast, weather resistant and guarantee high opacity. 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.

### 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	G 1	T38-2057
Medium Yellow	G 2	T38-2087
Orange	G 3	T38-3196
Light Red	G 4	T38-3319
Red	G 5	T38-3198
Pink	G 6	T38-3199
Violet	G 7	T38-5155
Blue	G 8	T38-5156
Green	G 91	T38-6165
White	G 11	T38-1025
Black	G 12	T38-9012
Clear Base		T38-0017

#### 3.2 Special Products:

##### 3.2.1 High Opacity Formulations:

White	(high opacity)	T38-1033
Black	(high opacity)	T38-9015

### 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	T38-2028
Euro-Magenta	T38-3105
Euro-Cyan	T38-5101
Halftone Black	T38-9020

### 3.4 Bronze Colours:

see separate "Bronze Colours" leaflet

### 4. ADDITIONAL PRODUCTS:

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

Overprinting Lacquer	T38-0037
Raster Paste (max. addition: 10 %)	T38-0031

### 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 %)	VS 35 353
Thinner, standard (addition: 15 - 25 %)	VD 38 571

While printing on plastics such as ABS tension corrosion can appear while using certain solvents. In order to avoid such effect the special thinner 35 696 should be used.

Special Thinner (addition: 15 - 25 %)	35 696
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#### 5.2 Retarder

Retarder will influence the drying time of the ink under different climate conditions. Retarder VZ 35928 is a medium drying retarder, VZ 34392 is a very slow drying retarder. While using the ink under extreme climate conditions (Temperature higher than 28°C) it is recommended to use the retarder VZ 35928 as a thinner to adjust the viscosity of the ink.

Retarder, standard (addition 5 – 10 %)	VZ 35928
Retarder, slow (addition max. 5 %)	VZ 34392

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

# SERIES T38

Retarder VZ 34392 should only be used in conjunction with thinner VD 38571 or retarder VZ 35928. Special Retarder, very slow (addition max. 10%) 100VR1170.

## 5.3 Hardener:

Hardener 100VR1433 is the standard hardener. The mixing ratio is 2 parts of ink with 1 part of hardener. At room temperature of 20° C a pot life of approximately 12 hours can be achieved.

Hardener 100VR14314 is recommended in order to achieve a higher weather resistance as well as for the use of closed systems. The reactivity of the hardener is lower in comparison with the hardener 100VR1433, so the pot life will 12 – 14 hours. The final hardening of the film will be finished after 2 days.

Hardener, standard 2 parts of ink, with 1 part of hardener	100VR1433
Hardener 2 parts of ink with 1 part of hardener	100VR1431

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 during 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 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 38 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 (screen) 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 T38 series are grip dry within 5 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 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, squeegees and so on can be cleaned with the RUCO Universal cleaner 32335. 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 32335
Cleaner for cleaning equipment	WR 100VR1240C
Bio degradable Cleaner	BR 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 Technical Application Department.

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