
# ITX FREE / LOW MIGRATION

**Technical Data Sheet** **UV Dry Offset printing ink**

## 1. APPLICATIONS FIELDS:

Especially designed UV dry offset inks for printing onto cups, pails, buckets and lids made of Polyolefines (PE/PP) and polystyrene.
Other materials can be also printed.
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:

The highly reactive UV dry offset printing inks of series 080 UV show high abrasion resistance properties and are formulated for high machine speeds (up to 600 pieces/ min). Due to the high colour density of ink series 080 UV it is possible to print with reduced ink film layers. A special product test is recommended prior to production.
The inks of the 080 UV series are constitutionally free from toxic elements and solvents. 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 are ITX free and suitable for printing on the outside of food packaging. The ink exhibits excellent printing properties and provides low migration values that should not exceed 10 ppb provided the inks are properly applied.

## 3. RANGE OF COLOURS:

### 3.1 Basic Colours:

| | | |
|---|---|---|
| Yellow | P 01 | 080 UV 2019 |
| Orange | P 03 | 080 UV 3048 |
| Red | P 04 | 080 UV 3050 |
| Red | P 05 | 080 UV 3049 |
| Pink | P 06 | 080 UV 3051 |
| Violet | P 07 | 080 UV 5035 |
| Reflex blue | P 08 | 080 UV 5037 |
| Blue | P 09 | 080 UV 5036 |
| Green | P 10 | 080 UV 6009 |
| White | P 11 | 080 UV 1009 |
| Black | P 12 | 080 UV 9012 |

### 3.2 High Opacity Formulations:

| | | |
|---|---|---|
| White | (high opacity) | 080 UV 1010 |
| Black | (high opacity) | 080 UV 9013 |

### 3.3 Bronze Colours

Bronze colours can be delivered by request.
See separate datasheet.

## 4. ADDITIVES:

The 080 UV ink series is 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 %) 080 UV 0014

Transparent White can be used to reduce colour intensity.
Raster paste can be added to reduce “Dot Gain” and to achieve sharper dots.

| | | |
|---|---|---|
| Transparent White | (max. addition: 10 %) | 080 UV 0024 |
| Raster Paste | (max. addition: 10 %) | 080 UV 0023 |

## 5. PRODUCT RESISTANCE AND LIGHT FASTNESS:

| Basic colour | | Light fast-ness | H2O | H+ | OH- | soap | butter |
|---|---|---|---|---|---|---|---|
| 080UV2016 | P1 | 7 | 5 | 5 | 5 | - | 5 |
| 080UV3048 | P3 | 6-7 | 5 | 5 | 5 | 5 | 5 |
| 080UV3050 | P4 | 7 | 5 | 5 | 5 | 4,9 | 5 |
| 080UV3049 | P5 | 5 | 5 | 4 | 4-5 | 3-4 | 5 |
| 080UV3051 | P6 | 6-7 | - | 5 | 5 | 5 | - |
| 080UV5035 | P7 | 7-8 | 5 | 5 | 5 | - | - |
| 080UV5037 | P8 | 7-8 | 5 | 5 | 5 | - | - |
| 080UV5036 | P9 | 8 | 5 | 5 | 5 | 5 | 5 |
| 080UV6009 | P10 | 8 | 5 | 5 | 5 | 5 | 5 |
| 080UV1009 | P11 | 8 | 5 | 5 | 5 | 5 | 5 |
| 080UV9012 | P12 | 8 | 5 | 5 | 5 | 5 | 5 |

resistance : 1 = bad 5 = good
light fastness : 1 = bad 8 = good
- : not tested
(These details are based on publications of pigment suppliers.)

# 080 UV

## 6. PROCESSING INSTRUCTIONS:

### 6.1 Pre-treatment:

Pre-treatment of polyolefines (PE/PP) must be performed by CORONA-discharge or by flame in order to insure the adhesion of the UV 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 44-48 mN/ m (in particular case 42 mN/ m) as optimal surface tension.

However pre-treatment is not the only parameter to be taken into consideration for adhesion. A special product test is recommended prior to production.

### 6.2 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 080 UV series can be cured by the use of medium pressure mercury vapour lamps (at 120 - 160 W/cm).

The minimum recommended energy output is 100 Millijoule/cm$^2$ (measured with Kühnast-Integrator under Lab condition) Ink film shows its final properties 12 hour after UV curing.

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 can be cleaned with the plate cleaner 35352 and the rollers of the ink fountains should be cleaned with the roller cleaner 34622. If cleaning is not performed by fully automatic cleaning equipment, protective gloves must be worn.

Cleaning liquids that are contaminated with UV products should not be used for the washing of working materials that were used with conventional screen printing inks. Solvents that contain UV residue are not suitable for reclamation and must be treated as a separate waste.

| | |
|---|---|
| Plate cleaner | 35352 |
| Roller cleaner | 34622 |

## 8. SHELF LIFE:

A shelf life of 12 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:

UV inks may cause irritations and can increase the sensitivity of the skin, possibly leading to hypersensitivity. Therefore, the use of disposable gloves and protective goggles is strongly recommended.
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.

A.M. RAMP & Co. GmbH
Lorsbacher Strasse 28
D-65817 Eppstein

Tel: +49 (0) 6198-304-0 Fax: +49 (0) 6198-304-287
E-Mail:info@ruco-inks.com
www.ruco.de