



## UV-Waterless-Offset UV - SICURA 41-WL



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### 1. SHORT DESCRIPTION / APPLICATION

Overheadfoils, transparent packing, book covers, plastic displays, telephone -, cheque- and other IC cards, soft PVC stickers, self-adhesive labels, Deko Molding and In Mould labels etc..

For high requirements at the scratching and scrubbing resistance we recommend a following conversion, e.g. a UV lacquer finish or a foil lamination.

- for one- and multi-colors sheet-fed offset press
- for printing and application of drying offset
- for the Di-Litho employment suitable on according reequipped printing machines

The UV curing color series of 41-WL can be processed during appropriate machine settings and plate surface temperature with the Toray Waterless negative or positive plates or the Presstek CTP plates.

### 2. PROPERTIES / SUBSTRATES

- conditionally suitable for printing on absorbent materials such as paper and cardboard
- for hard and soft PVC
- for primed or Corona pre-treated PE and PP foils
- conditionally suitable for polystyrene polycarbonate and aluminum foils
- for ABS materials

- Low dot gain also at high color density
- Excellent printability
- Outstanding adhesion properties
- Very good product resistances
- Free of chlorinated binder resins and additives

Adhesion, scratch- and scuff resistance, water resistance (wet scratch and wet scuff resistance) and far-reaching resistances to cosmetics, lotions, shampoos, alcohol, cleaning agents and solvents are normally obtained, when compared to standard requirements, on the following substrates:

- **In-line Corona treated polyethylenes**, with surface tension level of at least 40-45 mN/m
- **In-line Corona treated polypropylenes**, with surface tension level of at least 42-45 mN/m
- **Lacquered/primered polyethylenes**
- **Lacquered/primered polypropylenes**
- **PVC soft**
- **Coated papers and cardboards**
- **Uncoated papers and cardboards**
- **Polyethylene "papers"** (e.g. Tyvek, Syntepe)
- **Top-Coat-papers**

**Other substrates after technical evaluation.**

Special applications:

- **Thermal papers:**

- Except for special new paper qualities, the inks of this series are **not** suitable for **economic thermal papers** due to the darkening of the thermo-sensitive layer.

Contact our technical department for more information.

To observe:

- *Before the print job is started, **new materials**, in particular plastic, must be checked for printability with the inks of this series or with the planned ink/overprinting varnish combination, even if their suitability on a comparable type of the same substrate group is proved.*

*The **test prints** are to be examined **after die-cutting** (in particular at the edges) for adhesion, resistance to scratching and water (resistance to wet scratching and scuffing), resistance of the printed ink to the packaging contents and other application-specific requirements.*

*Due to the after-curing process, these properties may change in during the first 24 hours after printing. Please do therefore an after-check.*

- *Before starting a new print job on a known material, but with new shades and/or new ink resp. ink/varnish combinations, please verify whether the **resistances** and, if applicable, other properties fulfill the **application-specific requirements**.*
- *If you intend to produce for packagings which are subsequently to be filled with odor-sensitive contents, please make sure that the **typical odor** of the prints will not affect them. If you want to print on materials which will later be used as an immediate food wrapper or which will be placed close to food, please contact Siegwerk. Read our Technical Information "UV- and electron-beam curing printing inks and varnishes: Physiological harmlessness and suitability for food packagings" (available on request).*
- *Unprimed polyethylene and PVC substrates sometimes contain **lubricants**, which **migrate** to the surface e.g. during storage. Such substances may be present even if the measured surface tension is higher than 42 mN/m; they can negatively influence the adhesion, the scratch and water resistance of the printed inks. These unwanted effects can also appear when the intensity of the in-line Corona treatment is excessive.*

In case of doubt, please contact in time our technical department.

### **3. INSTRUCTIONS FOR PRINTING AND PROCESSING**

#### **Basic shades**

The inks of this series are supplied in a range of basic shades, with which most of the desired shades can be self-mixed (cf. attached list of basic shades). The basic inks correspond in shade largely to those of the PANTONE mixing system.

Working with basic inks offers you the following **advantages**:

- The ink is available immediately.
- You are yourself in a position to prepare the correct amount of required ink: you will neither have to much nor too little ink.
- You can optimally rejuvenate the remaining minimum quantity of leftover ink with the pure basic inks into new shades.
- You are in a position to order basic inks in larger quantities and in larger containers, thus having less empty containers to dispose of.



Our technical department offers you assistance in your attempts for an optimized ink management.

To observe:

*As the choice of pigments for UV inks is limited and due to the migration resistance on PVC and to the fastnesses required for plastic labels, the inks in the range of the so-called "fanal" shades (Reflex Blue, Blue 072, Violet, Purple and Rhodamine Red) are **slightly less brilliant** than the correspondent PANTONE basic shades. Furthermore, differences in shade have to be expected when working with PANTONE mixing formulas.*

**Curing**

Suitable for curing the inks of this series are medium pressure mercury vapor UV emitters with a power of at least 120-200 W/linear cm. Optimum results can be achieved using high performance quartz coated aluminum reflectors, which reflect almost the total UV radiation across the whole spectrum, but eliminating the infrared portion (e.g. by the aid of the "cold mirror" technology). Such reflectors yield maximum radiation density at minimum web heat load.

For more power two or more units can be connected in series.

The printing speed depends not only on the power of the curing unit but also on the shade, colour strength and opacity. Generally, black, white and bronze inks will dry slower than yellow, red or varnishes.

**Printing**

Printing plates:

Toray plates for waterless inks. Negative plates are recommended.

**Cleaning**

The printing plates can be cleaned with the Cleaner 411-043.

**4. SHELF LIFE**

The inks and varnishes of this series have under normal conditions a shelf life of **at least 9 month**. Within this period the products are usable in conformity with the indications of this data sheet.

Normal conditions mean:

- storage in firmly closed, not yet tapped containers;
- temperatures not exceeding 20°C for weeks or 25°C for days.

The shelf life can be extended by cool storage below 15°C.

To observe:

- Do not expose open containers to direct sunlight or strong light sources.

"Over-stored" inks (typical symptoms: lumps or thickened part at the bottom) may normally be re-used by carefully removing this thickened ink with a spatula (not by mixing it in with a stirrer).

## 5. BASIC SHADES / LIST OF PRODUCTS

### Basic Shades

Product Name	Old Product Code	New Product Code	Light (IWS)	Alcohol	Solvent compound	Alcali
41-WL EURO YELLOW 1200	41-WL-1210	<b>70-380166-2.1180</b>	<b>5</b>	+	+	+
41-WL EURO RED 3000	41-WL-3000	<b>70-880160-0.1180</b>	<b>5</b>	+	+	-
41-WL EURO BLUE 5650	41-WL-5650	<b>70-113298-7.1180</b>	<b>8</b>	+	+	+
41-WL BLACK 9990	41-WL-9990	<b>70-980169-0.1180</b>	<b>8</b>	+	+	+
41-WL INTENSIV BLACK 9992	41-WL-9992	<b>71-980241-5.1180</b>	<b>8</b>	+	+	+
41-WL GREENISH YELLOW 0300	41-WL-0300	<b>71-380212-2.1180</b>	<b>6</b>	+	+	+
41-WL ORANGE PMS 021 C 1608	41-WL-1608	<b>71-710238-8.1180</b>	<b>4-5</b>	+	+	+
41-WL WARMRED 2050	41-WL-2050	<b>71-880337-2.1180</b>	<b>5</b>	+	+	+
41-WL RED PMS 032 C 2048	41-WL-2048	<b>71-880339-8.1180</b>	<b>5</b>	+	+	+
41-WL RHODAMINE RED 4500	41-WL-4500	<b>71-880334-9.1180</b>	<b>5-6</b>	+	+	+
41-WL PURPLE 5400	41-WL-5400	<b>71-100824-3.1180</b>	<b>5-6</b>	+	+	+
41-WL VIOLET 5501	41-WL-5501	<b>71-100823-5.1180</b>	<b>6-7</b>	+	+	+
41-WL REFLEX BLUE 6400	41-WL-6400	<b>71-113405-6.1180</b>	<b>7</b>	+	+	+
41-WL BLUE PMS 072 C 6413	41-WL-6413	<b>71-113397-5.1180</b>	<b>7</b>	+	+	+
41-WL GREEN 7900	41-WL-7900	<b>71-510516-9.1180</b>	<b>8</b>	+	+	+
41-WL TRANSPARENT WHITE	41-WL-1001	<b>71-004016-3.1180</b>		+	+	+
41-WL OPAQUE WHITE 1020	41-WL-1020	<b>71-013985-8.1180</b>	<b>7-8</b>	+	+	+

**Packing code: It concerns a standard cask. If you wish another packing size, we will be pleased to send you the appropriate packing code.**

### **Anti-clay/tone additive 71-470064-8.1020**

For elimination of toning.

Adding of anti-clay/tone additive absolutely only briefly before beginning of the printing.

The tackiness and viscosity reduces!

Auxiliary quantity: 0,5% - 2%, absolutely to weigh up!

## **6. SAFETY**

### **Classification:**

EU: Irritant (Xi). Irritating to eyes and skin (R36/38). May cause sensitization by skin contact (R43).  
Contains acrylates, hexanedioldiacrylate and trimethylolpropanetriacrylate.

Switzerland: Toxicity class 4

### **To observe:      *Safety data/Information on composition***

*Do not handle products without having consulted the corresponding safety data sheets. We supply them together with the first shipment to your safety manager.*

## **7. HSE**

### **Product Safety**

Intended Use

Food Packaging: no

Compliance Management

Only intended for food packaging if the processing conditions rule out the possibility of set-off in the reel or stack and the design of the final printed article ensures reliable functional barrier properties to migration.

The "Customer Guidance: Printing Inks for Food Packaging", in Appendix 2 "the Selection of the Ink Product"

<http://www.siegwerk.com/en/customer-segments/sheetfed-uv/service.html> has to be observed.

Because of the differences in materials for printing, processing conditions and test criteria this Technical Information **can only be of advisory character**.

Our data reflect the latest state of our knowledge and are based on the characteristics established in the laboratory and on practical experience.

**Your own tests with the original materials under the respective conditions are indispensable.**

We disclaim any liability for applications for which this ink series or this product is not foreseen.