



Pröll KG  
P.O. Box 4 29  
D-91773 Weissenburg i. Bay.  
Germany  
Phone: +49 9141 906-0  
Fax: +49 9141 906-49  
E-mail: [info@proell.de](mailto:info@proell.de)  
Internet: [www.proell.de](http://www.proell.de)

# PUR<sup>®</sup>-ZK

## Single- or Two-Component Screen- and Pad Printing Ink

### Area of Application and General Characteristics

**PUR<sup>®</sup>-ZK is a fast drying universal printing ink. It is suitable for printing on PVC, pre-treated polyester, acrylics, polycarbonate, wood, metal, leather, paper, cardboard and various grades of ABS.**

Depending on the intended use, PUR<sup>®</sup>-ZK can be processed as a single-component or two-component ink. When printed as a single-component ink on thermoplastic substrates, the prints can be thermoformed.

When used as a two-component ink, PUR<sup>®</sup>-ZK exhibits good resistance to chemicals, cleaning agents and fuels.

### Important

Printing results, to a large extent, depend on the substrate as well as the printing and application conditions. We recommend checking your printing materials under your conditions of use before performing any production runs. Materials that are supposed to be identical may vary from manufacturer to manufacturer and even from batch to batch. Some substrates may have been treated with or contain sliding agents, antistatics or other additives which may impair the adhesion of the inks.

Metals must be absolutely grease-free in order to achieve good adhesion of the ink.

Important  
(Continued)

In general please refer to our technical leaflet "General Information on Screen Printing Inks" which may be downloaded from our website [www.proell.de](http://www.proell.de), click Download ⇒ Screen Printing Inks ⇒ General information on screen printing inks.

**Weather Resistance**

When printed on suitable substrates, PUR<sup>®</sup>-ZK exhibits excellent weather resistance (with the exception of Opaque White 944). For long-term outdoor use a 77-55 mesh (77 threads/cm being equivalent to 195 threads/inch) is recommended.

**Gloss**

Satin glossy/glossy

**Mixing Ratio and Pot Life**

Two hardeners are available for the PUR<sup>®</sup>-ZK ink system. Inks mixed with Hardener PUR<sup>®</sup>-ZK No. 1 have a relatively short pot life (time period suitable for using the prepared mixture), depending on the temperature and the reactivity of the hardener.

Consequently, the quantity of ink which is mixed should be limited in accordance with the amount which is actually required. The mixture should be used within 1 - 2 hours at a temperature of about 20 °C (68 °F), higher temperatures accelerate curing and shorten the pot life.

The pot life can be extended up to 6 - 8 hours by using Hardener PUR<sup>®</sup>-ZK No. 2.

Prior to thinning the two components, ink and hardener, have to be mixed in the following ratio:

White 945:	10 1	parts by weight Ink part by weight Hardener
Opaque White 944:	12.5 1	parts by weight Ink part by weight Hardener
Lacquer 093:	7 1	parts by weight Lacquer part by weight Hardener
Other Color shades:	9 1	parts by weight Ink part by weight Hardener

In any case, the mixture should be stirred thoroughly in order to achieve a homogeneous dispersion of the components.

**Range of Colors**

The Basic Colors for the Pröll Matching System are available (please see the corresponding Technical Information). For other Standard and Special Colors to be delivered from stock refer to the valid price list.

For pad printing high opaque formulations are available (see leaflet "PUR<sup>®</sup>-ZK High Opaque Inks, Resistances").

## **Thinning**

For Screen Printing: Thinner Norilit® U 90, Retarder VZ or K 97 or a corresponding mixture.  
Quantity: approx. 10 - 20 %

For Pad Printing: Thinner 6601, Tampo Jet SK 90, Norilit® U 90, Retarder VZ or VZ 2 (from very fast to very slow)  
Quantity: approx. 30 %

Special Colors: Please refer to label on the can for thinner quantity.

## **Drying and Curing**

PUR®-ZK dries fast on racks or in tunnel dryers. Crosslinking also occurs when the prints are stacked.

Higher drying temperatures increase adhesion in many cases (e.g. when printing on metal). The following temperatures (substrate temperature, baking oven preheated) and drying times are recommended:

120 °C (approx. 250 °F) for 10 minutes  
150 °C (approx. 300 °F) for 5 minutes

When printed as a two-component ink on metal and dried at the above mentioned higher temperature, PUR®-ZK provides good resistance against bending and shows high impact strength.

Pigments used in the basic colors 104 and 207 are not stable under special conditions. When printing on materials with a high content of plasticizers these color shades should not be used as well as for applications where temperatures exceed 60 °C (140 °F). Especially when used in mixtures in only low concentrations these colors will cause color shifts when exposed to such temperatures.

## **Other Directions for Processing**

On polyolefines, PUR®-ZK should always be processed as a two-component ink in order to achieve adequate adhesion and scratch resistance. The polyolefines must be pretreated for printing.

Completely cured PUR®-ZK inks exhibit good resistance to chemicals such as fuels, alcohol, inorganic acids etc. (according to DIN 16 524) provided that the printing substrate is resistant to the testing medium, too (s. Technical Information "Resistance Test Results").

Resistance tests should be carried out after the prints have been stored for at least 7 days at ambient temperature or for 2 days at 50 – 60 °C (120 – 140 °F).

## **Overprinting**

For overprinting PUR<sup>®</sup>-ZK or color sequences Overprinting Lacquer PUR<sup>®</sup>-ZK 093 is recommended. For overprinting PUR<sup>®</sup>-ZK one-component systems, PUR<sup>®</sup>-ZK 093 with or without hardener can be used. For overprinting PUR<sup>®</sup>-ZK two-component systems only using PUR<sup>®</sup>-ZK 093 plus hardener make sense. In the latter case overprinting has to be conducted without delay.

Mixing ratio: 7 parts by weight  
Lacquer PUR<sup>®</sup>-ZK 093  
1 part by weight Hardener  
PUR<sup>®</sup>-ZK No. 1 or No. 2

For outdoor use UV-protective Lacquer PUR<sup>®</sup>-ZK 093/025 is recommended.

PUR<sup>®</sup>-ZK 093/025 is not suitable for direct printing on polycarbonate.

PUR<sup>®</sup>-ZK 093/025 is suitable for the protection of other Pröll ink series like Thermo-Jet<sup>®</sup>, Noriprint<sup>®</sup> PS, Noristar PG, NoriJet S, NoriJet Process Inks and others.

## **Cleaning**

Screens and utensils which came into contact with two-component inks must be cleaned immediately because cured two-component inks become solvent resistant.

Thinner Norilit<sup>®</sup> U 090, UNI-REIN A III or UNI-CLEANER FP61 are recommended as cleaning agents.

## **Shelf Life**

Allow the ink as well as all the auxiliaries to be added to adjust to room temperature in the closed container before use.

The shelf life stated on the label assures the ink's quality and refers to unopened original cans stored in a dry place at temperatures between 5 °C (40 °F) and 25 °C (75 °F).

Opened containers of hardener must be tightly sealed immediately after use as the hardener reacts with moisture in the air.

The information contained in the technical information/instruction sheets or other product information sheets is based on product testing conducted by Pröll. Because printing and environmental factors critically affect each individual ink application, the above mentioned information and instructions represent only general recommendations concerning product characteristics and directions for use and should not be construed as representing express warranties regarding the product. The information and instructions in no way release the purchaser from his obligation to verify and test the inks and their application for the specific request, regarding: product characteristics, weather resistance, mixing proportions, gloss, thinning, special mixtures, printability, drying speed, cleaning, effects on or of other materials to be contacted and safety precautions. All details contained in the instruction sheet "General Information on Screen Printing Inks" are to be considered. The further manufacture and use of products containing our inks by the purchaser takes place beyond our control, and the responsibility for further application and use of our product resides solely with the purchaser. Pröll disclaims any warranties, express or implied.

This information supersedes all previous technical information.