

# PUR

## 1 or 2 Component Ink, Satin Gloss ink

### Application:

Suitable for printing on PVC, pre-treated polyester and pre-treated polyolefins (PE and PP), acrylics, polycarbonate, wooden materials, metal, paper, cardboard, leather. Pre-tests are necessary for polystyrene, ABS and SAN because the solvents in the ink may be too aggressive for these materials.

### Properties:

PUR is a fast drying ink with a satin gloss finish. Depending on the intended use, PUR can be processed as a one-component or two-component ink system.

When printed as a one-component ink system on thermoplastic substrates, the prints can be thermoformed.

When used as a two-component ink system, PUR shows good resistance to chemicals, alcohol, cleaning agents, fuels and inorganic acids etc. (according to DIN ISO 2836) provided that the substrate is resistant to the testing medium.

### Weather Resistance:

When printing on suitable substrates PUR shows excellent weather resistance. To ensure outdoor durability screen printing mesh should not be any finer than 77 threads/cm (195 threads/inch). When pad printing, the ink layer will be thinner thus the outdoor life expectancy will be shorter. The thicker the ink layer the better with the exception of white ink. A high concentration of pigment in 945 standard white and 944 opaque white ink can cause chalking when used in outdoor purposes.

### Adjustments:

#### Pad Printing:

PUR inks are adjusted with 25-30% thinner depending on temperature and humidity.

#### Screen Printing:

PUR inks are adjusted with 10-20% thinner (primarily slow thinners).

NOTE: All of the below thinners can be blended to create different solvent evaporation speeds to suit your printing requirements.

#### Thinner Types: *(recommended for pad printing)*

Type	Suitable inks	Characteristics
6601	All "P" series inks	Very fast solvent, primarily used in automation or with inks that have slow drying speeds.
SK90	All "P" series inks	Fast solvent. Suitable for automatic production.
U90	All "P" series inks	Medium / Fast solvent evaporation. Most common solvent used with pad printing applications.

#### Thinner Types: *(recommended for screen printing)*

Type	Suitable inks	Characteristics
VZ	All "P" series inks	Slow solvent, normally used for screen printing. VZ can also be added to the recommended pad printing solvents to help with tacking.
VZ2	All "P" series inks	Very slow solvent used primarily for screen printing. Normally used in low humidity and or high temperature conditions.

#### Hardener Types:

Type	Characteristics	Remarks
Hardener #2	Best if cured <b>over</b> 10° C (50° F). however parts can be rack cured.	As a two component ink system the ink layer will be harder and adhesion will be improved on certain substrates.

In order to meet higher demands regarding mechanical and chemical resistance as well as adhesion, PUR inks may also be used as a 2-component printing ink.

Mixing ratio for PUR inks as a 2-component system:

PUR Colors (Basic/Standard/ High opaque colors)	9	Parts by weight
	1	Part by weight hardener

PUR Silver, Gold and Copper inks	8	Parts by weight
	1	Part by weight hardener
PUR Clear 093 ink	7	Parts by weight
	1	Part by weight hardener
PUR 941 and 945 White	10	Parts by weight
	1	Part by weight hardener
PUR 944 Opaque White	12.5	Parts by weight
	1	Part by weight hardener

In all cases the hardener and ink need to be mixed prior to adding any solvents for thinning.

Pot life of ink after adding hardener is approximately 6-8 hours. After this time adhesion and resistance might be reduced, even if the ink still seems to be liquid and processable.

#### *Drying:*

PUR dries fast on racks or in tunnel dryers. Cross linking also occurs when the prints are stacked.

Higher drying temperatures increases adhesion in many cases (e.g. when printing on metal). The following temperatures and drying times are recommended.

120°C (approx. 250°F) for 10 minutes

150°C (approx. 300°F) for 5 minutes

It will take approximately 24 hours to fully cure as a 1-component ink system.

If processed as a 2-component ink, mechanical and chemical resistance tests should not be conducted for at least 7 days. This amount of time is required to achieve total evaporation of solvents and proper cross linking from the 2-component ink system.

#### *Cleaning:*

For cleaning the stencils and tools our KJ-1525 cleaning thinner is suitable. KJ-1525 is also used for cleaning the stencils and tools when hardener is added to Thermo-Jet ink.

#### *Packaging:*

PUR inks are available in 1 kg/cans

Color matched inks are packaged as 1 kg./cans only.

#### *Shelf Life:*

Non opened cans of PUR inks are good for 1 years on all colors except for gold and silver. Gold and silver inks have a shelf life of 6 months.

#### *Risk Information:*

Read material safety data sheets prior to processing.

The material safety data sheets according to 91/155/EWG contain marking in compliance with the regulation on dangerous working materials as well as instructions for precautions when processing, handling, waste disposal and storing as well as first aid.

PUR ink color shades contain no heavy metals in their pigmentation and comply with the provisions of EN 71, part 3, safety of toys, migration of particular elements.

#### **Application Technology:**

If you have any further print or application-related questions, our application engineering team will be happy to help. Contact by E-mail: [info@diverprint.com](mailto:info@diverprint.com) or call the home office: 704-583-9433.

#### **Basic Colors**

Clear	093	Red Transparent	368	Green Transparent	669
Citron	102	Red Violet	429	Blending White	941
Yellow *2	104	Pink Transparent	467	Black	948
Orange *2	207	Violet	472		
Red	312	Blue Transparent	566		

#### **Standard Colors**

Light Yellow	101	Medium Red	315	Dark Blue	523
Dark Yellow	115	Violet	417	Medium Green	610
Ochre	135	Light Blue	518	Opaque White	944
Orange	209	Ultra Blue	520	White	945
Dark Red	314	Medium Blue	521		

Special Colors					
Yellow Transparent	171	Rich Gold	861	Pale Gold	863
Silver	733	Rich Pale Gold	862	Copper	864

Highly Opaque Colors For Pad Printing					
Yellow High Opaque	132	Red High Opaque	332	Blue High Opaque	532
Orange High Opaque	232	Violet High Opaque	432	Green High Opaque	632

\*2= Not to be used for printing on soft PVC or plastics containing high amounts of plasticizers. Not suitable for vacuum forming.

*The statements in our leaflets and safety data sheets are based on our present experiences, however they are no assurance of product properties and do not justify a contractual legal relationship. They serve to advise our business associates, but it is absolutely necessary to make your own printing tests under local conditions, with regard to the intended purpose prior to starting the job.*

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