

TPN

1 or 2 - Component Ink, High Gloss ink

Application:

For all kinds of thermoplastics, especially for ABS, polystyrene and its copolymers, rigid PVC, PMMA and polycarbonate. For sufficient adhesion on polyester, polyamide and other duroplastics pre-treatment (corona or flame treatment) may be required.

Properties:

Ink type TPN is a very quick drying ink system with a high gloss appearance. TPN ink has very little elasticity and should not be printed on substrates that will be stretched or flexed. The mechanical resistance and chemical resistance of TPN inks are very good but will improve even better with the addition of hardener TPWH or TPWH-N. TPN inks have good opacity and has good printability but dries very fast.

Adjustments:

Pad Printing:

Ink type TPN is adjusted with 15-30% Thinner depending on temperature and humidity. Normally TPWA and TPFA thinners are used.

Screen Printing:

Not recommended because of the ink drying speed.

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

Thinner Types:

Type	Evaporation Rate	Suitable inks	Characteristics
TPWA	1.0	All "K" ink -line pad printing inks.	Universal. Suitable for all pad printing inks.
TPWB	0.5	All "K" ink -line pad printing inks.	Fast drying solvent. Suitable for automatic production.
TPFA	5.0	All "K" ink -line pad printing inks.	Slow drying solvent.
POS/B	0.25	All "K" ink -line pad printing inks.	Very fast drying solvent also used with high speed automation printing.
TPWC	1.0	All "K" ink -line pad printing inks.	Aggressive solvent.
TPWD	25.0	All "K" ink -line pad printing inks.	Retarder. Used primarily in screen printing applications. 25 times slower than TPWA solvent.
CA262	0.6	Single component ink systems. With the exception of TPA/GL two component inks.	Fast drying solvent primarily used when printing on Acrylic, styrene or other plastics that have a tendency to craze or crack with other solvents.
/00 at the end of any of the solvents. Example: TPWA/00	Same as the original.	Same as the original.	Improves oxidation effect on metal cliché and or metal parts to be printed. NOTE: These thinners are only made on special requests and delivery time is longer.

TPN already has a very good mechanical and chemical resistance as a 1-component ink system. However, as a 2-component ink system the mechanical and chemical resistance gets even better.

Mixing ratio for ink type TPN (as a 2-component system):
hardener TPWH or TPWH/N is mixed 10:1 parts by weight.

Pot life of ink after adding hardener is approximately 5 hours. After this time adhesion and resistance might be reduced, even if the ink still seems to be liquid and processable.

Hardener Types:

Type	Characteristics	Remarks
TPWH	MUST be cured over 10° C (50° F). Slightly turns to yellow. Not suitable for outdoor applications.	Suitable for universal substrate and harder ink layer.
TPWH/N	MUST be cured over 20° C (68° F). Does not turn yellow and is suitable for outdoor applications.	Suitable for special substrate, example soft, coated surfaces.
TPWH-ON	Very good chemical resistance.	This hardener needs baking to cure. It will not cross link without high temperature.

Drying:

Ink type TPN air dries, i.e. by evaporation of solvents. At room temperature (20-25°C ; 68-77° F). Drying time is approximately 30-60 seconds.

With heat application and air circulation the drying time is reduced. Depending on the substrate, the inks are completely cured within a few hours as a 1-component ink system.

If processed as a 2-component ink, mechanical and chemical resistance will only be achieved after 2-3 days. This amount of time is required to achieve the proper cross linking between the hardener and the binder system in the inks.

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 TPW ink.

Packaging:

TPN inks are available in 1 liter (approximately 1.06 quarts) cans.

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

Shelf Life:

Non opened cans of TPN inks are good for 5 years. Each can will have a mixed and recommended use by date printed on the label.

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.

TPN ink type 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 or call the home office: 704-583-9433.

Standard Colors

Citric yellow	TPN/280	Red bright opaque	TPN/381-OP	Light green	TPN/680
Citric yellow opaque	TPN/280-OP	Carmine red	TPN/382	Light green opaque	TPN/680-OP
Medium yellow	TPN/281	Carmine red opaque	TPN/382-OP	Fir green	TPN/681
Medium yellow opaque	TPN/281-OP	Pink	TPN/385	Light brown	TPN/880
Dark yellow	TPN/282	Light blue	TPN/580	Dark brown	TPN/881
Dark yellow opaque	TPN/282-OP	Light blue opaque	TPN/580-OP	White	TPN/100
Orange	TPN/285	Medium blue	TPN/581	White opaque	TPN/100-OP
Orange opaque	TPN/285-OP	Ultra blue	TPN/582	White, mat finish	TPN/100-MT
Ochre yellow	TPN/287	Dark blue	TPN/583	Black	TPN/105
Light red	TPN/380	Turquoise	TPN/584	Black opaque	TPN/105-OP
Light red opaque	TPN/380-OP	Violet	TPN/587	Black, mat finish	TPN/105-MT
Red bright	TPN/381	Violet opaque	TPN/587-OP		

** Other color shades can be manufactured subject to our special ink shade regulations**

C-MIX 2000 Colors (12 color matching system)				
Primrose	TPN/Y30		Violet	TPN/V50
Golden yellow	TPN/Y50		Blue	TPN/B50
Orange	TPN/O50		Green	TPN/G50
Scarlet	TPN/R20		Black	TPN/N50
Red	TPN/R50		White	TPN/W50
Magenta	TPN/M50		Clear varnish	TPN/E50

Process Colors (according to Europe Scale)	
Yellow	TPN/200
Magenta	TPN/201
Cyan	TPN/202

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. - All former leaflets are no longer valid. April 2000 - Version No.1

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