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## Technical Data Sheet :

### Product Identification:

#### Tru Superlam PV Series (Toluene/MEK Based & Dilutable)

**Description:** Tru Superlam PV inks are highly pigmented, Polyurethane based Gravure Inks, specially formulated for quality high performance lamination jobs. These inks have excellent printability, maintains stable adhesion, and minimum solvent retention levels. These inks are specially designed with a Solvent Balance optimized to give best results at high press speeds due to their excellent technical specifications and chemistry employed.

**End Use :** Very low odour and solvent retention characteristics make these inks highly suitable for the packaging of food products such as coffee, biscuits, snack foods, cooked foods, confectionery, etc.

**Printing Machines & Press Speed:** Tru Superlam PV Series is tailored to run effortlessly on Gravure printing machines. Tru Superlam PV inks may be printed at speeds of 150 to over 300m/min, depending upon press drying capabilities and the solvent used for reduction. End of the press Chilled Roller arrangement to cool down the printed web before it enters the “Rewind Web” is recommended.

**Cylinders:** Tru Superlam PV inks are suitable for all types of engraved cylinders (chemical, mechanical and laser engraving).

### Printing Substrates:

**Tru Superlam PV inks** are suitable for reverse printing a number of films:

- ✓ BOPP(Corona treated 38-42 Dyne/cm)
- ✓ CT-PET
- ✓ CC-PET
- ✓ *Other films after verification*

## Benefits:

- High color strength
- Very high bond strengths compared to Vinyl based ink systems
- Reasonably high HR properties in comparison to Vinyl based Ink systems
- Almost instant adhesion on various filmic substrates
- Low solvent retention
- Prints on wide range of plastic films
- Reliable, high performance results
- Free from migrating plasticizer resins.
- Does not contain pigments based on heavy metals.
- Does not contain plasticizers banned in certain countries

## Specific Print Related Features:

- Good Printing Stability and Excellent Dot Reproduction at higher print speeds.
- High yield and Very High Transparency
- Perfect ink system for transparent as well as Met Film laminated structures
- Excellent solvent release, enabling high press speeds to be used
- Excellent freeze thaw resistance properties: making the ink suitable for the extreme cold weather countries
- Good heat resistance (>180°C, 3bar, 1-sec., Treated PET, under standard lab conditions)

## Bond Strength:

- ✓ Good lamination bond strength: superior to 250g/15 mm (under laboratory conditions) for most structures such as BOPP/LDPE; BOPP/MET Films.
- ✓ Good lamination bond strength on polyester (PET) structures with corona or chemical treated polyester films.
- ✓ Suitable for polypropylene laminated with metalized films

## Precautions:

- ❖ Lamination of the printed film: Recommended time-lag - 24 hours after printing.
- ❖ To achieve good lamination bond strength and ink adhesion, surface treatment of OPP film must be at 38 - 40 dyneVcm.

## Colour Range:

A full range of colors is available, which may only occasionally be restricted by end user requirements. The pigments used have reasonable commercial fastness to light but they may not withstand prolonged exposure to direct sunlight. If this property is required, it should be requested while placing orders.

### Process Cololur Range:

Product Codes	Product Description	L.F. (1-8 Scale)	% Solids(±2)
PVK 3802 - 00	Tru Superlam PV Pro Black	7	23
PVY 3803 - 00	Tru Superlam PV Tr. Pro Yellow	4-5	22
PVC 3804 - 00	Tru Superlam PV Pro Cyan	7	23
PVM 3805 - 00	Tru Superlam PV Pro Magenta	3-4	22
PVM 3805 - 02	*Tru Superlam PV AR/SR Magenta	6	22

### Standard Colour Range:

Product Codes	Product Description	L.F. (1-8 Scale)	% Solids(±2)
PVY 3803 - 01	Tru Superlam PV Greener Yellow	6-7	22
PVY 3803 - 02	Tru Superlam PV Warm Yellow	6	22
PVY 3803 - 03	Tru Superlam PV Opaque Yellow	4 - 5	22
PVR 3806 - 01	Tru Superlam PV Warm Red	3	23
PVR 3806-00	Tru Superlam PV TR Red	5-6	23
PVR 3806 - 02	Tru Superlam PV Rhoda mine Red	6	22
PVO 3807 - 00	Tru Superlam PV Orange	5	22
PVG 3808 - 00	Tru Superlam PV Green	7	22
PVV 3809 - 00	Tru Superlam PV Non AR/SR Violet	5,d	23
PVV 3809 - 01	**Tru Superlam PV AR/SR Violet	7	22

\*Thixotropy Nature, adhesion Poor but Bond Strength –Good

\*\*Adhesion Poor but Bond Strength-Good

### Support Additives:

Product Codes	Product Description	% Active Content
PVE 3810 - 00	Tru Superlam PV Adhesion Promoter	30
PVE 3810 - 01	Tru Superlam PV Anti blocking Additive	10
PVE 3810 - 03	Tru Superlam PV Reducer	NA
PVE 3810 - 04	Tru Superlam PV Retarder	NA

### White and Extender Medium:

Product Codes	Product Description	L.F. (1-8 Scale)	% Solids
PVW 3800 - 00	Tru Superlam PV Extender Medium	N.A.	16
PVW 3801 - 00	Tru Superlam PV White	7	40

### Printing And Processing:

Cup Used:	DIN Cup 4	AFNOR Cup 4	Ford 4 Cup	Zahn 2 Cup
Viscosity :	15-19 sec	16-21sec	14-18 sec	20-23 sec

*\*The above figures are given for guidance only.*

Viscosity adjustment should be started only after the ink is well mixed and the ink is at room temperature. Viscosity is adjusted by adding solvents (or combination of solvent + Extender medium – in case of excessive dilution) slowly in small quantities. See under “Dilution”.

The Actual viscosity used will depend on a number of factors, including print design, press conditions, the machine running speed and the desired colour characteristics.

### Dilution:

Solvent and solvent blends used for dilution may need to be adjusted in accordance to printing conditions: Namely, printing process, printing speed, oven capability, and graphics such as solids, lines, half tone, vignette and process printing.

**To achieve good DOT RE-REPRODUCIBILITY @ below 8% level, Use of Extra Retarder is Recommended**

Depending on printing conditions, the following solvents may be used as retarder or accelerator

**Accelerator:** MEK, Ethyl Acetate

**Medium:** Toluene / IPA

**Retarder:** MIBK (For Standard Reducer), D-PM (For Optional Reducer)

It is essential to ensure solvent removal, especially while employing excessive slow drying solvents, to avoid blocking and to maintain the low odour properties of **these inks**. High retained solvent levels are known to interfere with the performance of the laminating adhesive.

## Reducing Systems:

We recommend as a basic ratio:

### Standard Reducers and Retarders :

<b>MEK</b>	<b>40</b>
<b>Toluene</b>	<b>40</b>
<b>IPA</b>	<b>20</b>

**With MIBK (Retarder)**

### Optional Reducers and Retarders :

<b>Ethyl Acetate</b>	<b>45</b>
<b>Toluene</b>	<b>45</b>
<b>D-PM</b>	<b>10</b>

**With D-PM (Retarder)**

**\*It is always better to mix the solvents before adding to the ink.**

No guarantees for our ink can be given if the above solvent reduction is not followed. The use of other solvents and solvent blends are known to cause problems such as blocking, odour and reduced bond strength. In extremely severe cases the wrong solvent can cause “Ink Curdling or Chuck Out” problems.

## Shelf Life:

The inks and varnishes of this series have under normal storage conditions a shelf life of at least 6 months.

Normal conditions means:

- Storage in tightly closed containers
- No admixtures
- Temperature not exceeding 25°C for weeks or 30°C for days.

Short time excess-temperatures e.g. at transport are not harmful. The products are not sensitive to frost.

“Over-stored“inks (typical symptoms: fall in gloss, shift in shade, formation of odour and / or viscosity increase) may normally – *off colour being exceptions* - be used the same way as residual inks by controlled admixture to fresh inks

Increased viscosity due to long-time storage of inks may generally be adjusted by addition of a slightly higher amount of thinner than the usual.

***Please take notice of the following:***

*1. The performance results indicated in this literature are only indicative under controlled conditions of laboratory with virgin & standard packaging grade films. Please do not use lower grades or substandard films. Tirupati Ink Ltd., will not take any responsibility for abnormal results*

*2. Liability: While the information outlined is given in good faith, it does not constitute a guarantee and neither is one implied as to the specific end use suitability of any product. The customers should always evaluate the suitability of products to their own satisfaction*

*2.1. Tirupati Inks is responsible only to the tune of replacing the ink consumed in case of any printing related problems clearly assigned to in-compatibility with the ink system recommended by Tirupati Inks for the print job under consideration.*

*If you require any further information please do not hesitate to contact us or visit our website.*



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