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Technical Data Sheet :

Product Identification:

Trulam PET Rev Series

Description: **Trulam PET Rev inks** are optimally pigmented; Vinyl based Gravure Inks, specially formulated for quality routine lamination jobs using various grades of Polyester films. These inks have excellent printability; maintain 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 the chemistry employed. These inks are highly stable on the printing machines, thereby enabling management of long as well short job runs with ease – a very commonly used ink system for the lamination work in Indian sub-continent.

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. HR and bond strength of these inks being not very high it is generally not expected to be used when these requirements are of highest importance. These inks also could be employed for reverse printing of the BOPP film, with addition of BOPP additive from TIL, in appropriate proportion.

Printing Machines & Press Speed: **Trulam PET Rev Series** is tailored to run effortlessly on Gravure printing machines. **Trulam PET Rev inks** may be printed at speeds of 100 to over 220m/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, when the printing speeds are above 200 M/Min. Additionally one needs to ensure that the re-wind reel pressure in kgs is within the limit to avoid any blocking or clinging of the film to the role.

Cylinders: Trulam PET Rev inks are suitable for all types of engraved cylinders (chemical, mechanical and laser engraving).

Printing Substrates:

Trulam PET Rev inks are suitable for reverse printing a number of films:

- ✓ PET(Normal)
- ✓ CT-PET
- ✓ CC-PET
- ✓ BOPP (>38 Dyne/Cm) – after addition of BOPP additive.1
- ✓ *Other films after verification*

Benefits:

- High color strength
- Good bond strengths
- Almost instant adhesion
- Low solvent retention
- 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 optimal 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

Bond Strength:

- ✓ Optimum lamination bond strength: superior to 120g/15 mm (under laboratory conditions) for most structures such as ; PET to LDPE Films – actual bond strengths depend on the films, adhesives and ink and ink and adhesive film weights employed for laminating.
- ✓ Good lamination bond strength on polyester (PET) structures chemical treated polyester films.

Precautions:

- ❖ Lamination of the printed film: Recommended time-lag - 24 hours after printing.

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 Colour Range:

Product Codes	Product Description	L.F. (1-8 Scale)
PRK 102 - 00	TRULAM PET REV BLACK SUPER	7
PRK 102 - 01	TRULAM PET REV BLACK SPL	7
PRY 103 - 00	TRULAM PET REV YELLOW TPT GREENER 1	4
PRY 103 - 01	TRULAM PET REV YELLOW TPT GREENER 2	4
PRC 104 - 11	TRULAM PET REV BLUE TR	7
PRM 105 - 00	TRULAM PET REV MAGENTA 1	4-5
PRM 105 - 03	TRULAM PET REV MAGENTA 3	4-5

White and Extender Medium:

Product Codes	Product Description	L.F. (1-8 Scale)
PRE 100 - 00	TRULAM PET REV MEDIUM 1	N. A
PRE 100 - 04	TRULAM PET REV MEDIUM 5	N. A.
PRW 101 - 00	TRULAM PET REV WHITE SUPER	7
PRW 101 - 04	TRULAM PET REV WHITE GAL	7

Support Additives:

Product Codes	Product Description	Active Content
PRA 118 - 00	TRULAM ANTI STATIC ADDITIVE	100
PRA 118 - 01	TRULAM BOPP ADHESION ADDITIVE	20

Standard Colour Range:

Product Codes	Product Description	L.F. (1-8 Scale)
PRY 103 - 03	TRULAM PET REV YELLOW GOLDEN (Chrome Based)	6-7
PRY 103 - 04	TRULAM PET REV YELLOW OPAQUE (Chrome Based)	6-7
PRY 103 - 05	TRULAM PET REV YELLOW ARSR	4-5
PRC 104 - 01	TRULAM PET REV BLUE REFLEX	3
PRC 104 - 02	TRULAM PET REV BLUE ROYAL	3
PRM 105 - 04	TRULAM PET REV ARSR GERANIUM	5-6
PRR 106 - 00	TRULAM PET REV RED TR	3-4
PRR 106 - 01	TRULAM PET REV RED BLOOD	4
PRR 106 - 02	TRULAM PET REV RED DEEP	4-5
PRR 106 - 03	TRULAM PET REV RED CHILLI	4
PRR 106 - 04	TRULAM PET REV RED OPAQUE	
PRR 106 - 06	TRULAM PET REV RED WARM	3
PRO 107 - 00	TRULAM PET REV ORANGE 1	5
PRO 107 - 01	TRULAM PET REV ORANGE OPAQUE	6-7
PRG 108 - 00	TRULAM PET REV GREEN TR	7
PRG 108 - 01	TRULAM PET REV GREEN DARK	5
PRV 109 - 00	TRULAM PET REV VIOLET	3
PRV 109 - 01	TRULAM PET REV VIOLET ARSR	7
PRP 111 - 00	TRULAM PET REV PURPLE	3
PRN 112 - 00	TRULAM PET REV PINK	3-4
PRZ 116 - 00	TRULAM PET REV GOLD INK	NA
PRX 117 - 00	TRULAM PET REV SILVER INK	NA

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

Slow: Toluene

Retarder: MIBK, Methoxy Propyl Acetate

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 alcohol levels are known to interfere with the performance of the laminating adhesive.

Reducing Systems:

We recommend as a basic ratio:

MIBK	10
TOLUENE	45
ETHYL ACETATE	45

TOLUENE	50
ETHYL ACETATE	50

***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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