VINYBLAN® for Ink-Jet Ink Absorbing Layer

VINYBLAN is a copolymerized resin consisting of vinyl chloride with acrylic acid ester. Due to the characteristics of vinyl chloride and acrylic, VINYBLAN has many great features suitable for the ink-jet ink absorbing layer.

Why is VINYBLAN good for the Ink-Jet Ink receiving layer?

- **It has excellent chromogenic properties.**
- **It has excellent alcohol and water resistance properties.**
- **It has good adhesion to various substrates, e.g, synthetic paper, PVC film and PET film.**
- **It is miscible with silica.**

Grades

Grade	Solid Content (%)	VC (%)	Viscosity (mPa·s)	PH	Particle Size (nm)	Tg (℃)	MFT (℃)	Film Appearance
701	30	50	50	7.5	30	73	min. 80	High-Gloss type
745	30	50	20	7.5	70	57	58	Gloss type
747	30	70	50	7.5	50	66	min. 80	
278	43	80	200	8.5	180	33	46	Semi-Gloss type
985	37	100	50	6	70	80	min. 80	—*

* 985 cannot form a film by itself. It is used as an additive to improve chromogenic properties.

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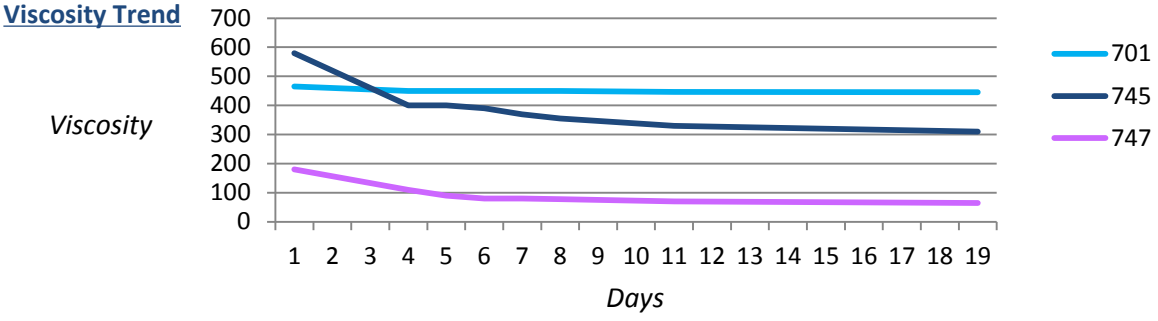
Miscibility with Silica

VINYBLAN 700series (701, 745, 747) is especially miscible with silica. This series has good adhesion and abrasion resistance when it is mixed with silica.
The following shows how VINYBLAN works when it is mixed with silica.

1. Viscosity Stability Test

- Add 10g of silica to 100g of each VINYBLAN emulsion. (Silica: CARPLEX BS-510BJ (10μ) by Evonik Japan)
- Stir the emulsion at 1500rpm x 30min
- Adjust the solution temperature at 23C and observe the viscosity with BM type viscometer at 6rpm

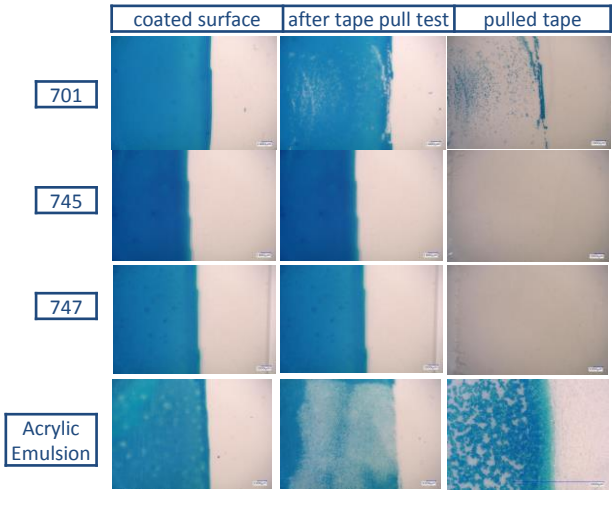


<Notes>
The viscosity value should increase when silica is added. We checked if the viscosity values were stable or if they changed.

Grade Name	original	soon after adding silica	30min after adding silica
701	10	500	465
745	10	650	580
747	10	250	180

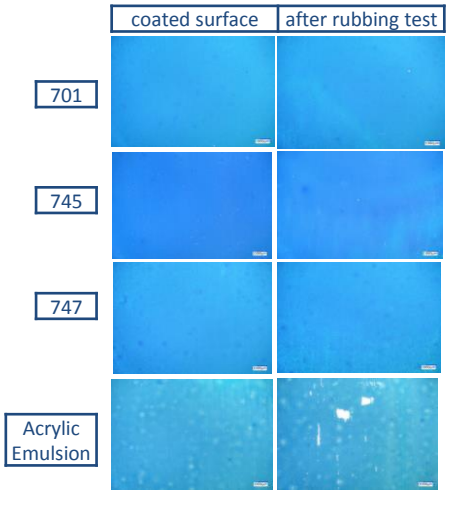
2. Good Adhesion to PET – Tape pull test

- Prepare the solution according to the following formulation
  Each emulsion : Silica : IPA : PG : Pigment = 30 : 3 : 10 : 5 : 2 by wet (g)
- Apply the solution on PET film 10g-dry/m2
- Dry it under 105C x 5min
- Evaluate by conducting tape pull test



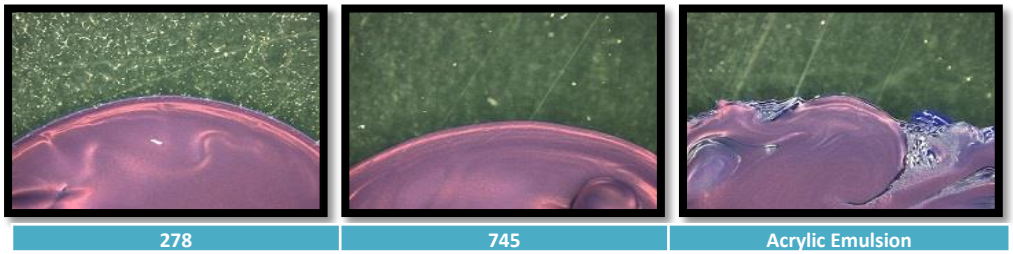
3.Good Abrasion Resistance – Rubbing test

- Make specimens using same method as No.2 left
- Evaluate by conducting rubbing test with gauze (Load:200g x 30 times repeat)



Printability

When compared with other acrylic emulsions, VINYBLAN will better prevent ink from bleeding.



278	745	Acrylic Emulsion
No bleeding	No bleeding	Bleeding

Specimen Preparation
- Apply each emulsion (278, 745 and acrylic emulsion) on PET film approximately 10g-dry/m2.
- Dry it under 105C x 5min
- Drop solvent-based ink and check the appearance under microscope 100x magnification