

# Printing PSA tapes

As soon as the first PP tapes have been introduced in the market, **ICHEMCO** started to develop new dedicated systems for the printing of all sort of carton sealing tapes based on the BOPP technology.

Working in close cooperation with **SIAT**, primary manufacturer of PSA tapes printing machines, our goal has always been, and still is, to have a solution ready for all needs.

As a result of this research, we developed the following list of products:

## PRIMERS

- **Primer EPX-2 / EPX-2 ECO**
- **Primer EPX-2 DRY (100% dry version)**

## RELEASE AGENTS

- **Release PP25 DIL / PP25 DIL ECO**
- **Release ST1**
- **Release ST3 M**
- **Release ST4 M**
- **Release ST8 DRY**
- **Release ST9 HM DRY**
- **Release K100 D (100% dry version)**

## ADDITIVES

- **Additive ST 2**
- **Additive ST 2X**

## INKS

- **Color Ink PP NITRO**
- **Color Ink PP PAMC**
- **Color Ink PP PAM + ADD.**
- **Color Ink W (several series)**
- **Color Ink PVC**
- **Color Ink NS**
- **Color Ink WN**

For a correct choice of the printing system, the variables that have to be evaluated are:

### the type of adhesive

- solvent
- hot-melt
- water

### the surface treatment of the film

- corona untreated, with release coating
- corona untreated, without release coating
- corona untreated, with printable release
- corona treated
- corona treated, with printable release

**UNIVERSAL PRINTING PROCESS (3 passes)**

Type of tape	Printing machines
All PP (PET, PE) tapes: solvent / hot-melt / water adhesives, with or without release coat, corona treated or untreated.	SIAT L 36, SIAT L 36 C

Product	Packaging	Quantity to apply
PRIMER EPX-2 (ECO <sup>1</sup> )	Packed in 20 Kg drums	3-4 g/m <sup>2</sup> wet
COLOR INK PP NITRO <sup>2</sup>	Packed in 10 - 20 Kg drums	Depending upon printing necessity
RELEASE PP 25 DIL (ECO <sup>1</sup> )	Packed in 20 Kg drums	3-4 g/m <sup>2</sup> wet

<sup>1</sup> ECO version, based on non-aromatic solvents, is also available.

<sup>2</sup> To be preferred to PAM inks, it dries faster and is not soluble in toluene contained in most release agent solutions.

**SPECIAL PRINTING PROCESS (2 passes)**

Type of tape	Printing machines
BOPP, with waterborne acrylic adhesive, either <i>low-noise</i> or normal	SIAT L 36 C, SIAT L 33/200, SIAT L 44

Product	Packaging	Quantity to apply
CORONA TREATMENT		38 - 40 dyne/cm
COLOR INK PP PAM+ADD.	Packed in 10 - 20 Kg drums	Depending upon printing necessity

Normal PAM inks (**Color Ink PP PAMC**) can also be used, by adding our **Additive ST 2** (50% ink, 50% additive).

If normal PAM inks are used without additive, it becomes necessary to protect the printed surface with a release coat (our **Release PP 25 DIL** or **RELEASE K 100 D**), as indicated in the 3 passes process.

**SIMPLIFIED PROCESS (1 pass)**

PP tapes labelled "easy printable" are commercially available, which means they are already treated by producers with special lacquers, providing surface able to absorb inks (tapes produced with any of our **Release ST** series products fall also into this category: see below).

Type of tape	Printing machines
PP (PET, PE) pre-treated with <b>Release ST</b>	SIAT L 33 V, SIAT L 44

Product	Packaging	Quantity to apply
COLOR INK PP PAM+ADD.	Packed in 10 - 20 Kg drums	Depending upon printing necessity

Normal PAM inks (**Color Ink PP PAMC**) can also be used, by adding our **Additive ST 2** (50% ink, 50% additive).

**PVC PRINTING PROCESS**
**Printing machines**

SIAT L 33, SIAT L 44

Product	Packaging	Quantity to apply
COLOR INK PVC	Packed in 10 - 20 Kg drums	Depending upon printing necessity

**UNDER ADHESIVE "SANDWICH" PRINTING PROCESS (3 passes)**

Type of tape	Printing machines	
BOPP or PE corona treated (38 - 42 dyne/cm)	Flexographic printers	
Product	Packaging	Solvents
COLOR INK NS + 3-5% Additive NS	20-25-170 Kg drums; 500 Kg tanks	ethyl alcohol / ethyl acetate 80:20
or COLOR INK WN	25-200 Kg drums, 500-1000 Kg tanks	water

Three steps:

1. Flexographic printing on the corona treated side.
2. Drying perfectly (wait at least 24 hours).
3. Adhesive coating (acrylic water-based, hot-melt or solvent) on the printed side of the film.

**RELEASE ST SERIES (PRINTABLE RELEASE COATS)**

The ST release agent series has been developed for adhesive tapes producers. Jumbo rolls produced with this technology allow printers to adopt a single-pass printing process using specially formulated inks (**Color Ink PP PAM+ADD.**). Our specific technical brochures, available on our web site, gives tape producers all necessary information about the way to use them.

Product	Packaging	Properties
RELEASE ST 1	Packed in 50 Kg drums	Solventborne release coat to be used on BOPP films with double sided corona treatment (38-42 dynes/cm). To be diluted at 0.8% in toluene/IPA (70/30) or hexane/IPA (70/30). Designed for standard hot-melt and solventborne adhesives.
RELEASE ST 3M	Packed in 50 Kg drums	Solventborne release coat to be used on BOPP films on the untreated side. To be diluted at 3% in toluene. Designed for rubber based adhesives.
RELEASE ST 4M	Packed in 50 Kg drums	Solventborne release coat to be used on BOPP film on the untreated side. To be diluted at 0.8% in toluene/IPA (70/30) or hexane/IPA (70/30). Designed for standard hot-melt and solvent adhesives.
RELEASE ST 8 DRY	Packed in 25 Kg drums with 5-10 Kg bags inside	Dry release to be used on BOPP films with double sided corona treatment (38-42 dynes/cm). To be diluted at 12% in toluene. Designed for rubber based adhesives.
RELEASE ST 9 HM DRY	Packed in 25 Kg drums with 5-10 Kg bags inside	Dry release to be used on BOPP films with double sided corona treatment (38-42 dynes/cm). To be diluted at 12% in toluene/IPA (75/25) or hexane/IPA (75/25). Designed for hot-met adhesives.

**AVAILABLE DILUENTS**

<b>Product</b>	<b>Packaging</b>	<b>Composition (approximate)</b>
<b>DILUENT RP (Primer e Release)</b>	20 Kg drums	100% toluene
<b>DILUENT C NITRO</b>	15 Kg drums	100% ethyl acetate
<b>RETARDER C NITRO</b>	15 Kg drums	100% methoxy propanol
<b>DILUENT C PAM *</b>	15 Kg drums	50% isopropyl alcohol - 50% heptane
<b>RETARDER C PAM</b>	15 Kg drums	100% isobutyl alcohol
<b>DILUENT C PVC</b>	15 Kg drums	100% methyl ethyl ketone
<b>RETARDER C PVC</b>	15 Kg drums	100% cyclohexanone

\* When using **Color Inks PP PAM+ADD.**, we suggest to use **Thinning Varnish PP PAM+ADD.** instead of **Diluent C PAM.** Otherwise the additive will be diluted too much.

**FINAL REMARKS**

**Any product used for printing must always be very homogeneous and fluid.**

In case of printing defects (transfer of ink caused by low adhesion), please check the following points:

- Products must be homogeneous. There could be sedimentation or gelification. Even moderate cold temperatures (below +18°C) can generate these problems. Either way, warm the product up to 30-50°C and stir it well until it becomes homogenous. If the product is still rather thick at 20°C, add 15-20 % of the specific **DILUENT** (see table above).
- An incomplete drying process after the coating is also a common cause of problems. Incomplete drying can be caused by the addition of more than 5% of **RETARDER** (suggested to reduce evaporation speed and “spider net” effects in the ink tray).
- Verify that quantity applied (coat weight) is correct.
- Shelf-life of the products must not exceed the TDS indication.

The complete list of ink, and the product and safety data sheets of the above products are available on our web site at the address [www.ichemco.it/inks](http://www.ichemco.it/inks)

**FOR MORE INFORMATION**

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