

INTRODUCTORY TECHNICAL SHEET

1/ Printing techniques used on labels or sleeves

(Source : Association des Fabricants d'Encres d'Imprimerie, French printing inks manufacturers association)

Technique	Base		Ink type	Drying
	Paper	Plastic		
Offset	V	-	Viscous (resin or vegetal oil based, or UV ink)	Oxidation or reticulation (for UV inks)
Flexography	V	V	Very fluid (binder with organic solvent or water-based, UV ink)	Evaporation ou reticulation (for UV inks)
Rotogravure	V	V	Very fluid (binder with organic solvent or water-based)	Evaporation

Remark : UV inks do not contain organic solvents or water.

- The printing base may be overlacquered with a varnish.
- The most common technique for printing on paper is offset.
- The most common technique for printing on plastic is rotogravure.

For more information : www.fipec.org/afei

2/ Printing inks and plastic bottle recycling

General Comments

The key criteria in plastic bottle recycling are :

- Suitability in accordance with environment code (volume V)
- Nature and characteristics of inks
- Printed surface area

3/ Studies on ink behaviour

a) inks with organic or mineral pigments printed on paper

A specific procedure was drawn up and validated by COTREP's partners to study the behaviour of inks in washing operations. Studies carried out :

1° Nitrocellulosic ink for rotogravure printing on PP

=> see sheets FT 04 and FT 06

2° Nitrocellulosic ink for rotogravure printing on PET G

=> see sheet FT 07

Conclusions : Used on these base materials, colour hold mainly depends on the pigment's stability in heat and in an alkaline environment (some colours resist washing more than others.) Coupling agents, base primarizing and overlacquers can also have an impact on the ink's resistance to washing stages.

Given the complexity of inks' chemical formulae, printing inks manufacturers should be consulted for any specific question.

b) Inks with metallic pigments printed on plastic or paper

COTREP strongly advises against inks with metallic pigments on PET as they cause the removal of the relevant bottles at the sorting stage.

=> see sheet FT 13