

PET BOTTLE with a PP sleeve-label



Introduction

According to the 2010 residential characterization study, plastic bottles made of polyethylene terephthalate (PET) have a high recovery rate, topping 55% in Quebec, and good recycling resale value. However, to ensure this type of bottle is recycled, the label applied to it must be compatible with recovery and recycling streams currently in place in Quebec.

As illustrated, sleeves are labels that shrink to bottle shape. It may be made from various plastics such as polypropylene (PP), polyethylene (PE) or polyvinyl chloride (PVC). Given the context of Quebec's current system, the following table demonstrates the impact and consequences of using PP sleeve-labels on PET bottles. Consequences are both environmental and operational and therefore generate economic costs.

Summary Table

	STEPS	LEVEL OF IMPACT	IDENTIFIED IMPACTS	IDENTIFIED CONSEQUENCES
CURBSIDE RECYCLING COLLECTION	Collection and transportation	○	None	None
	Sorting centre operations	○	None	None
	Sorting			
	- manual	○	None	None
	- mechanical	○	None	None
CONDITIONING AND RECYCLING	- optical	◐	• Increase in the percentage of bottles going into the wrong streams or being rejected due to equipment used	• Fewer PET bottles recycled • Contamination of other types of recyclable materials
	Grinding and washing	○	None	None
	Additional sorting	○	None	None
	Processing	○	None	None
	LEGEND: ○ No impact ◐ Caution (uncertainty or complication) ● Problem			

Recommendation

ÉEQ's research, available external studies and expert opinions all indicate that PP sleeves are compatible with the curbside recycling collection and recycling of PET bottles. ÉEQ has therefore formulated the following recommendation:

ÉEQ recommends using PP sleeve-labels on PET bottles given the current state of Quebec's curbside recycling collection and recycling system.

Note that ÉEQ encourages contributing companies to check* the compatibility of all design elements of the packaging they market in Quebec against curbside collection and recycling requirements. Among elements to monitor with regard to PET bottles with PP sleeve-labels are the colour and opacity of the bottle, the surface covered by the sleeve ("full sleeve") and the type of ink used.

*For more information relating to the compatibility of packaging components, companies may contact ÉEQ's Technical Services at reftechnique@ecoentreprises.qc.ca.

Additional information

PET bottle with PP sleeve-label

FACT SHEET DIRECTORY

ÉEQ's directory of fact sheets is growing and will soon contain recommendations on other types of sleeve-labels. In addition to PP and PVC (Fact Sheet 1), polyethylene terephthalate glycol (PETG) and low-density polyethylene (LDPE), among other types of plastic, may be used to make sleeves.

PP VS OPP

Note that two types of polypropylene are used for making sleeve-labels, i.e. non-oriented polypropylene (PP) and oriented polypropylene (OPP). ÉEQ's recommendation applies to both types of sleeve-labels.

Additional information to the summary table

OPTICAL SORTING

Optical sorting equipment is used by some Quebec sorting centres to separate plastic packaging according to component materials. For any type of optical sorting equipment, combination materials, e.g. PET bottles with PP sleeve-labels, increase the risk of errors in PET bottle sorting or their being rejected [Expert opinion].

PROCESSING

PP is not compatible with PET. However, as the two materials can be efficiently separated during previous steps, processing is not affected [Expert opinion].

ADDITIONAL SORTING

During sink/float tank separation, PET flakes from bottles sink in water while PP flakes from sleeve-labels float, enabling efficient separation of these two plastics [External studies]. Some sleeve-labels require little or no adhesive, further facilitating materials separation.

Main references

Association of Postconsumer Plastic Recyclers (2011). *Design for Recyclability Guidelines*, viewed on June 10, 2011, http://www.plasticsrecycling.org/images/stories/doc/dfr_2011_may.pdf

Éco Entreprises Québec and RECYC-QUÉBEC (2011). *2010 Characterization of residual materials in Quebec's residential sector*. (upcoming publication)

Recoup (2009). *Plastics Packaging - Recyclability by Design*, 2009 revised edition, viewed on September 24, 2010, http://www.recoup.org/design/docs/202July_09_APR_endorsement_RBD.pdf

van Dongen, Cees, Robert Dvorak, and Ed Kosior (2011). *Design Guide for PET Bottle Recyclability*. European Federation of Bottled Waters and Union of European Beverages Associations, viewed on November 28, 2011, http://www.efbw.eu/images/file/Design%20Guide%20for%20PET%20Bottle%20Recyclability_31%20March%202011.pdf