



Brussels, November 2021

The Technical Committee of the European PET Bottle Platform (EPBP) was requested to assess the effect of Innovia polyolefin film APO50 RayoFloat™ for shrink sleeve label application on the quality of recycled PET. The application refers to low density polyolefin film for shrink sleeve label applications without printing.

Innovia's polyolefin film APO50 RayoFloat™ shrink sleeves are designed to shrink to the bottle without the need for glues. During the recycling process they separate from the bottle after grinding and are removed from the rPET flakes by sink/float separation and elutriation.

Data supplied from tests carried out according to the EPBP testing protocol demonstrated removal of the label during the washing process and no negative impact on the colour and processing performance of the resulting rPET as far as the unprinted film is considered.

Based on the EPBP assessment's outcome and current market's knowledge in 2020, the European PET Bottle Platform (EPBP) concludes that polyolefin film APO50 RayoFloat™ will not have a negative impact on current European PET recycling provided it is used under the following conditions:

- (a) The presence of labels and sleeves on PET bottles should not lead to errors in identification and separation by NIR and optical detectors currently used in plastic packaging waste sorting plants. For that reason, labels and sleeves should not cover more than 70% of the bottle surface for PET bottles of 500 ml and above; and not more than 50% for PET bottles smaller than 500 ml.
- (b) The density of the printed sleeve (label + ink + coating when applied) is below 1 g/cm³, taking shrinking during label application, further shrinking after grinding due to hot caustic washing and batch to batch tolerances into consideration.
- (c) The label substrate or the printing ink are not metallised.
- (d) Since the EPBP evaluation refers to the unprinted film and several printing options are possible, it is the responsibility of the end user to choose an appropriate combination of inks and printing process to ensure that the inks:
 - a. Are non-bleeding;
 - b. Have high chemical resistance;
 - c. Have very low migration;
 - d. Comply with the European Legislation (e.g. Packaging and Packaging Waste Directive on the heavy metal concentration levels).
- (e) The concentration of shrink labelled bottles is limited to a maximum of 20% of the whole EU PET bottle market. This market penetration rate takes local accumulation effects into consideration.



The EPBP reserves the right to update and change the conditions of this technical opinion at any time, upon prior notice to Innovia, in accordance to the most recent technologies, assessments and experience.

The European PET Bottle Platform EPBP is a voluntary industry initiative that provides PET bottle design guidelines for recycling, evaluates PET bottle packaging solutions and technologies and facilitates understanding of the effects of new PET bottle innovations on recycling processes. This initiative fully supports the economic and environmental sustainability of the European PET value chain.