PET Thermoforms Workshop – Webinar Design-for-Recycling PET Thermoforms

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Recycling PET thermoforming trays

- What are PET trays?

Recycling PET thermoforming trays

- What are PET trays?

inks & direct printing

self-adhesive labels with strong glues

soaker pads attached with hotmelt glues

sealed blister packaging

Recycling PET thermoforming trays

Blister with cardboard & aluminium

Multilayer PET tray with PE layer for better sealing

Different types of lidding film (peelable, re-sealable, permanent)

Other complex PET packaging

Recycling PET thermoforming trays

Recycling challenge

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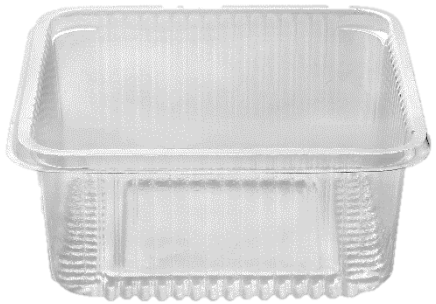
Recycling options

3,2 million tonnes



0,8 million tonnes

clear PET

blue PET

green PET

clear, monomaterial PET

coloured / multimaterial PET

Option 1
Bottles & trays
Effect? / Limit ?

Option 2
Trays seperately
End market ?

Option 3
mixed plastics or incineration?

Option 4
chemical recycling ?

Recycling studies

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> Actualités > Etude sur la recyclabilité des barquettes 100% PET

< RETOUR

ETUDE SUR LA RECYCLABILITÉ DES BARQUETTES 100% PET

25 juin 2015

Des barquettes recyclables dans le flux actuel PET clair, dans une limite de 20%

Lors de cette étude, les caractéristiques techniques de la matière recyclée ont été évaluées pour une régénération en plaques et en bouteilles, cette seconde application mettant en jeu des contraintes qualité particulièrement importantes. Les résultats de cette étude montrent en particulier qu'à 20% d'incorporation de barquettes mono-PET dans le flux actuel PET clair, les deux types de produits obtenus, plaques et bouteilles, présentent les propriétés mécaniques attendues ainsi qu'une couleur identique à celle du produit de référence. En conclusion, l'introduction de barquettes transparentes 100%-PET dans le flux PET clair ne génère pas d'impact sur le recyclage de ce flux.

PET trays existential dilemma

PLASTICS RECYCLERS EUROPE

Tuesday, May 13, 2014 - 10:37

In the last few years there has been a significant increase in the use of PET trays by the packaging industry. Unfortunately, this increase has not been adequately addressed in the end-of-life solutions for these trays. As a result of poor end-of-life thinking, most of these trays cannot be easily recycled.

None of the current recycling streams want to have PET trays in their incoming waste. PET recyclers cannot handle them because of their different composition (multi-layers, multi-material combinations etc.) when compared to beverage bottles. Mixed plastics recyclers do not want them because of their incompatibility with polyolefins.

This is a painful situation as the 700,000 tonnes of PET trays yearly put on the market should be a

- Petcore Europe hosts **workshops** on the Recycling of Rigid PET Thermoforms (mainly food trays)
- 34,4% of rPET is used to make new PET thermoforms, often containing **above 70% rPET** while fully complying with food contact regulations
- Industry, collection authorities and recyclers discuss ways to **improve PET thermoform recycling** efforts.
- the goal of the workshop is to **build a state-of-the-art life-cycle** for PET thermoforms life-cycle, including design-for-recycling, sorting and recycling technologies.

- Two options are under consideration:
  - Including the rigid PET thermoforms **into the existing PET bottle recycling streams**. But some PET trays cannot be accepted for recycling because of their different composition (multi-layer structure, presence of a lidding film, etc). Plus PET trays can be extremely brittle, which raises concerns over increased yield loss.
  - Creating **customised PET recycling processes** for rigid PET thermoforms. In that case, industry requires novel sorting technologies to distinguish PET trays from PET bottles.

Design-for-Recycling PET Thermoforms

MAKE PRODUCTS MORE RECYCLABLE

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Design for Recycling (DfR)

- Design for Recycling is a design concept that seeks to remove hazardous and non-recyclable materials from the production process through careful planning and design in order to promote material loops.
  - removal of toxic and hazardous substances
  - use of mono-materials
  - use of compatible materials
  - easy dismantling and separation
  - identification of materials that are difficult to recognise
- Design for Recycling helps protect the environment and creates a sustainable means for conserving our resources.

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EPBP

- Is a **voluntary** initiative
- Created in **2007**
- Grouping **technical experts** in the field of PET production, design, use, collection and recycling
- To provide an **objective evaluation** of the impact of new technologies on PET recycling processes across Europe.
- **Supported by** the European Association of Plastic Recycling and Recovery Organisations (EPRO), the Plastics Recyclers Europe (PRE), PETCORE-Europe, the European Federation of Bottled Waters (EFBW) and the European non-alcoholic beverages association (UNESDA).

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EPBP

- EPBP has established several **test procedures** in order to assess the recycling profile of new PET bottles, including barriers, additives, closures, labels, etc.
- The first set of test procedures are relatively rapid and low-cost techniques for the **quick assessment** of the recycling profile of PET bottles, including oven test, optical sorting test, glue separation, etc.
- In addition, the Platform establishes specific test procedures using **up-to-date testing methods** that produce qualitative and/or quantitative test results.
- For more information, visit www.petbottleplatform.eu.

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Traffic light approach

Full compatibility

materials that passed the testing protocols with no negative impact OR
materials that have not been tested (yet), but are known to be acceptable in PET recycling

Limited compatibility

materials that passed the testing protocols if certain conditions are met OR
materials that have not been tested (yet), but pose a low risk of interfering with PET recycling

Low compatibility

materials that failed the testing protocols
OR
materials that have not been tested (yet), but pose a high risk of interfering with PET recycling

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Want Not
&
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