PLASTICS DESIGN FOR RECYCLABILITY WEBINAR SERIES

Part 3: PET Packaging

Hosted by:
Walmart
The Association of Plastic Recyclers
Registration links, presentation slides and recordings will be available on the APR Website and the Walmart Sustainability Hub.
TODAY’S PRESENTERS

Steve Alexander
President, APR

Ashley C. Hall
Senior Manager - Sustainability, Walmart

Curt Cozart
President, Common Sense Solutions, Inc

Kara Pochiro
VP of Communications & Public Affairs, APR
AGENDA

1. Reminders:
   a. What Is This Series?
   b. Walmarts goals
   c. Who is APR and what makes something recyclable.

2. Overview of PET – what packaging uses it and why?

3. When PET is not recyclable

4. Designing for Recyclability

5. Resources

6. Questions
A series of webinars hosted by Walmart, and presented by The Association of Plastic Recyclers, discussing design for plastics recyclability and communicating the common messages within the Walmart Recyclability Playbook and the APR Design® Guide for Plastics Recyclability.

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All webinars begin at 2:30 PM EST.
OUR SUSTAINABILITY PRIORITIES

Key Focus Areas for Walmart Sustainability in FY20

**PROJECT GIGATON**
Working with suppliers to reduce 1 billion metric tons of GHGs by 2030

**PACKAGING & PLASTICS**
- Use less plastic.
- Make it recyclable.
- Label it for the customer.

**SUSTAINABLE PRODUCTS**
Identify sustainability priorities based on your product category

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JOIN US!
WALMARTSUSTAINABILITYHUB.COM

USE SUSTAINABLE MATERIAL SPECS AND LABEL PACKAGING

ADVANCING EDLTC ACROSS ALL PRODUCT CATEGORIES
OUR SUSTAINABLE PACKAGING COMMITMENTS
For Private Brands, Encouraged for National Brands

USE LESS PLASTIC
Reduce the use of plastic when possible
Remove unnecessary packaging

MAKE IT RECYCLABLE
20% Recycled content in plastic packaging
Increased recycled content
100% Recyclable, reusable, or industrially compostable
Make packaging recyclable

LABEL IT
100% Packaging labeled for recyclability
Apply the How2Recycle label

INNOVATE TOGETHER
Project Gigaton is designed so that every supplier can participate in at least one pillar.
The Sustainability Hub, a one-stop shop

- Learn how to design for recyclability
- Download the recycling playbook
- Find webinar recordings
- Link to other resources

walmart sustainabilityhub.com
WHO IS APR?

International trade association

The Voice of Plastics Recycling®

Companies committed to the success of plastics recycling
WHO IS APR? ENSURING PACKAGE DESIGN FITS WITH RECYCLING INFRASTRUCTURE

- APR Design® Guide for Plastics Recyclability
- Test Methods
- Training
- Communication
- Advocacy
APR's DEFINITION OF RECYCLABLE

60% consumer access

Processed by existing infrastructure
- sort
- clean

Can be manufactured into identifiable product
Most recycled plastic if designed correctly!

- Stiff, strong, heat resistant
- Clear
- Good chemical resistance
- Good oxygen and CO₂ gas barrier
- Excellent food and beverage safety credentials
Can be Used For:
- Soft drink bottles
- Home cleaning products
- Clear handle ware jugs for juice
- Packaging for baked goods, produce, and other food
- Personal care products
- Clothing
- Carpet

Types of Plastic Packaging: PET

Can’t be Used For:
- Bottles that require high temperatures in filling or sterilization – greater than about 85°C / 185°F.
- Thermoforms that need to be frozen or microwavable/baked **without further processing the package**

The Association of Plastic Recyclers
PET PACKAGING MEETS 2 CRITERIA

60% consumer access

✓ PET

Can be manufactured into identifiable product

Processed by existing infrastructure
• sort
• clean

PET

The Association of Plastic Recyclers
2015-16 CENTRALIZED STUDY ON AVAILABILITY OF PLASTIC RECYCLING

Download the full report: sustainablepackaging.org
INFRASTRUCTURE COMPATIBILITY IS CRITICAL

- Processed by existing infrastructure
  - sort
  - clean

60% consumer access

Can be manufactured into identifiable product
NOT RECYCLABLE IN THE SORTING SYSTEM - small

Less than 2” x 2” must be tested

Definitions and test methods at www.plasticsrecycling.org
NOT RECYCLABLE IN THE SORTING SYSTEM - dark

Most blacks and near blacks cannot be detected

Definitions and test methods at www.plasticsrecycling.org
NOT RECYCLABLE IN THE SORTING SYSTEM – wrong full body labels

Thick labels covering more than 85% of the object might be sorted incorrectly

Definitions and test methods at www.plasticsrecycling.org
Large metal components are rejected

Definitions and test methods at www.plasticsrecycling.org
NOT RECYCLABLE IN THE SORTING SYSTEM – 2 dimensional

*Flat items sort like paper in the sorting system*

Definitions and test methods at [www.plasticsrecycling.org](http://www.plasticsrecycling.org)
COLORED AND OPAQUE PET

Colors other than clear, transparent light blue and green have extremely limited markets and most of them are currently discarded!!

Definitions and test methods at www.plasticsrecycling.org
Windows using PET

Plastic windows contaminate the paper stream and will not enter the PET recycling stream. PVC is particularly egregious.
Design Features that make PET NOT RECYCLABLE

• **Any PVC component** - Even miniscule amounts destroy RPET value
• **Degradable additives** – Follow on products made from RPET are expected to perform
• **PETG containers** – Difficult to remove and not compatible with PET
• **PET film & bags** – Not compatible with the sorting system or store drop off
• **Foamed PET** – floats rather than sinks like PET

Definitions and test methods at [www.plasticsrecycling.org](http://www.plasticsrecycling.org)
FIVE FOR FOCUS
(Most common issues affecting PET quality/yield)

1. Metal Components
2. PETG Shrink Sleeve Labels
3. Pressure Sensitive Labels
4. Barrier Layers
5. Extrusion Blow-Molded PETG Containers
Metal Components:
closures, lidding, dispensers or foils

ISSUES
• Create wear in process machinery
• Increase operation costs and yield loss
• Are a primary source of defects in products made with recycled PET (Aluminum)
• If removed by metal detectors the container will not be recycled

ACTION
• Use PET, PP or PE
PETG Shrink Sleeve Labels

ISSUES

• Difficult to identify and remove
• Reduces processability of RPET

ACTION

• Use APR-recognized labels, including commercially-available shrink sleeve label technologies.
Pressure Sensitive Labels

**ISSUES**
- Standard adhesive cannot be removed
- Inks can discolor PET

**ACTION**
- Use commercially-available APR-recognized adhesives, labels and printing processes.
  - Wash off during recycling
  - Inks stay attached to label
Barrier Layers: Extend Shelf life

ISSUES

• Stay adhered to the PET and cause discoloration

ACTION

• Use barrier technologies that have received APR Recognition
• Encourage your suppliers to innovate in this area.
Extrusion Blow- Molded PETG

ISSUES

• Difficult to identify and remove
• Reduces processability of RPET

ACTION

• Use commercially-available, APR-recognized PET (EPET)
APR Recognized Suppliers

Provide solutions for 5 for Focus Issues

**EPET:**
- Auriga Polymers (Indorama Ventures)
- DAK Americas
- Eastman Chemical

**Barriers:**
- Color Matrix (Poly One Corp.)
- KHS

**Labels:**
- American Fuji Seal
- Avery Dennison
- Brook & Whittle
- CCL
- Eastman Chemical
- Kennedy Group
- Klöckner Pentaplast
- Multi-Color Group
- Polysack
- SKC Inc.
- Taghleef Industries
- UPM Raflatac
SEE RESOURCE DOCUMENT

VISIT: plasticsrecycling.org
PET DESIGN FOR RECYCLABILITY

**DO NOT USE**
- Opaque or non clear, transparent, light blue or green PET
- Windows
- PETG bottles
- PVC components
- Degradable additives
- Foamed PET
- PET film/bags

**TEST**
- Small items
- Dark colors
- Flat items
- Large labels
- Metal attachments

**USE APR APPROVED**
- Pressure sensitive labels
- Barrier layers
- Shrink sleeve labels
- EPET, not PETG
DESIGNING FOR RECYCLABILITY - PET

- Leverage the Walmart Recycling Playbook and APR Design Guide for Plastics Recyclability
- Use the How2Recycle label for consumer messaging
DESIGNING FOR RECYCLABILITY - PET

Brand New Regional Training Program
October 22-23
Van Dyk's Technology and Material Test Center in Norwalk, CT, USA

Registration Limited to 50 Participants
Register Now:
http://events.r20.constantcontact.com/register/event?oeidk=a07egibtbpya79be945&llr=nu7bc4cab
QUESTIONS

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Steve@PlasticsRecycling.org
ccozart@c-sense-solutions.com *APR Design® Guide Training Program
Check out the following webinars for more information:

- September 12: HDPE and PP Packaging
- October 10: Flexible Packaging (Bags/Wraps/Films)
- October 31: Using More PCR

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