



Improve  
Sustainability  
Index Score



Reduce  
Cost of Goods

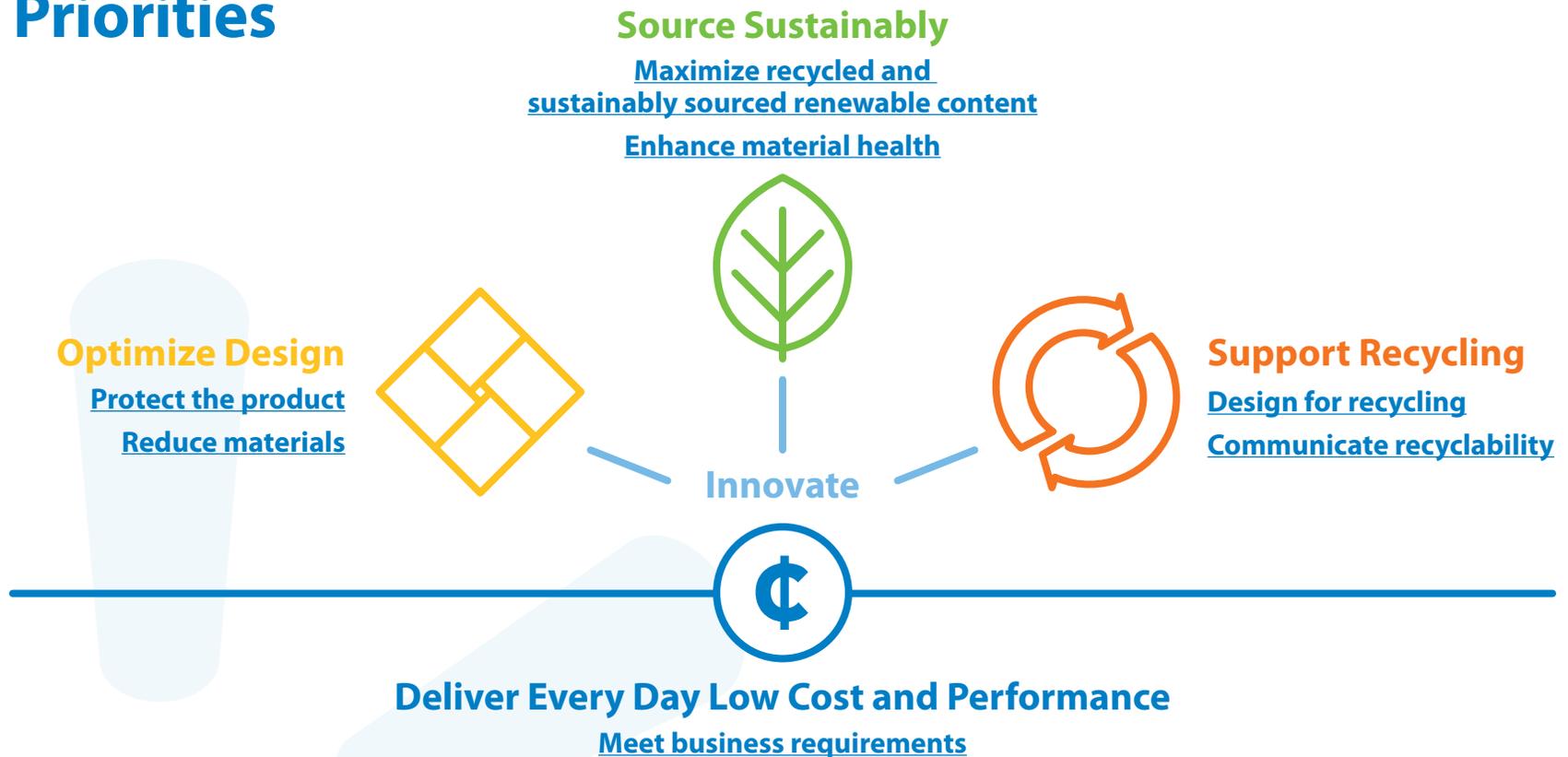
Deriver sales  
Prevent theft and tampering  
Satisfy consumers  
Conserve natural resources  
Protect the product  
Support human and  
environmental health  
Facilitate handling  
Minimize  
greenhouse gas emissions  
Communicate  
Close resource loops



## Sustainable Packaging Playbook

A guidebook for suppliers to improve packaging sustainability

# Priorities



Walmart [aims](#) to [reduce](#) environmental and social impacts of private brand and national brand packaging, while maintaining our ability to deliver quality products to customers.

This playbook provides an overview of sustainable packaging best practices for suppliers interested in improving and innovating packaging. While the focus is on consumer-facing packaging, practices may impact or also be applied across the entire packaging [system](#).

This playbook is not meant to replace [business requirements](#). Rather, sustainable packaging best practices may be used to complement business needs.

The [Sustainable Packaging Coalition](#) and the [Association of Plastic Recyclers](#) provided expert input for this guide and we greatly appreciate their support and assistance.

# Protect the Product

Does the packaging protect the product?

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**Best Practice** Design packaging that meets product protection [International Safe Transit Authority](#) (ISTA) standards while using the minimum amount of packaging.

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**Tip** Review the damage history of your products with your buyer and address any issues.



When eggs were moved to reusable plastic containers (RPCs) from cardboard containers, damage rates decreased, preventing 37 million eggs from being thrown out in the first year through this easy drop in display solution which folds flat when not in use

# Reduce Materials

Do you need all the materials used?

**Best Practice** [Source reduce](#) by eliminating packaging components or layers, “right sizing” packaging, and shifting to reusable containers.

**Tip** Consider product changes to reduce materials used in packaging (e.g., concentrating or dimension changes).

 Improve your [Sustainability Index](#) score by [determining](#) the reduction in environmental impact from packaging changes\*.



An outer bag holding three product pouches was removed and replaced by a pair of labels, for a 7.2g packaging material reduction

\* Many, but not all, categories have questions about packaging materials in the Sustainability Index.

# Maximize Recycled and Sustainably Sourced Renewable Content

Are materials sourced in a way that is environmentally and socially responsible?

**Best Practice** Increase the use of [recycled and sustainably sourced renewable content](#).

**Tip** Certify new/virgin tree fiber to ensure it aligns with Walmart's [commitment to zero net deforestation](#).

 Improve your [Sustainability Index](#) score by adding more post-consumer recycled content or renewable material that is sustainably sourced\*.

\* Many, but not all, categories have questions about packaging materials and deforestation in the Sustainability Index.



100% recycled paperboard, including 10% post-consumer content

Mix paper  
FSC



## Enhance Material Health

Have [priority chemicals](#) been removed, reduced, or restricted?

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**Best Practice** Identify if you have [priority chemicals](#) in packaging.

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**Tip** Begin by asking your suppliers if there are priority chemicals in your packaging.

A **priority chemical** meets the criteria for classification as a:

- carcinogen
- mutagen
- reproductive toxicant
- persistent, bio-accumulative, and toxic
- any chemical for which there is scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern

Source: [Registration, Evaluation, Authorization and Restriction of Chemicals \(REACH\) Title VII, Chapter 1, Article 57](#) [EACH Title VII, Chapter 1, Article 57](#)

## Design for Recycling

Is the package made with materials and in a form that can be recycled?

**Best Practice** Work with the [Sustainable Packaging Coalition](#) and the [Association of Plastic Recyclers](#) to design for recycling.

**Tip** Avoid [polyvinyl chloride](#) (PVC) or [biodegradable additives](#) in petroleum-based plastics.

 Improve your [Sustainability Index](#) score by increasing the amount of packaging that can be recycled\*.

About 30% of [polyethylene terephthalate](#) (PET) packaging collected for recycling in the U.S. is not recycled, in part due to issues with labels and adhesives. See the [Association of Plastic Recyclers](#) for solutions. (Source: [Resource Recycling](#))

\* Many, but not all, categories have questions about packaging materials in the Sustainability Index.

Food or food service products expected to be handled in compost waste streams could be more suited for certified compostable packaging than recyclable packaging. See the [Sustainable Packaging Coalition](#) for more information.



PET containers with new pressure sensitive labels compatible with recycling

# Communicate Recyclability

Are you clearly communicating what consumers should do with the used packaging?

**Best Practice** Use [consumer-friendly recycling labels](#) that meet [U.S. Federal Trade Commission \(FTC\) Green Guides](#), such as the [How2Recycle](#) label.

**Tip** Use market data to determine the appropriate message about recycling; ensuring that the package can be collected, recovered, and used again—the [Sustainable Packaging Coalition](#) and the [Association of Plastic Recyclers](#) can help.



Add the How2Recycle label to show off the recyclability of the package

# Walmart Sustainable Packaging Position Statement

We expect National and Private Brand suppliers to be in compliance with local, state and federal laws, and we encourage:

Optimize Design	Source Sustainably	Support Recycling
<ul style="list-style-type: none"> <li>• Eliminate unnecessary packaging, such as extra boxes, ties, or layers of packaging</li> <li>• “Right size” packages—designing appropriately for contents and merchandising requirements to prevent damage to the product</li> </ul>	<ul style="list-style-type: none"> <li>• Increase use of recycled and renewable content</li> <li>• Credibly certify products sourced in accordance with our <a href="#">corporate commitment to zero net deforestation</a></li> <li>• Remove/reduce/restrict use of materials that may present human health &amp; environmental toxicity risks</li> <li>• Eliminate use of biodegradable additives in petroleum-based plastics in compliance with state laws*</li> <li>• Certify that packaging and packaging components in compliance with state toxics in packaging laws</li> </ul>	<ul style="list-style-type: none"> <li>• Increase use of recyclable content</li> <li>• Ensure all recyclable/compostable/marine-degradable claims are supported with appropriate substantiation, including testing where appropriate, and meet all applicable federal, state and local requirements</li> <li>• Use consumer-friendly recycling label—SPC’s <a href="#">How2Recycle Label</a> preferred</li> <li>• Work to improve infrastructure for hard-to-recycle packaging and products</li> </ul>

## Commitment to Every Day Low Cost (EDLC) and Performance

\* Walmart U.S. and Sam’s Club U.S. support elimination of the use of biodegradable additives in petroleum-based plastics for all its products and packaging

## Additional Resources

### Walmart Resources

[Walmart Sustainability Hub](#)

[Walmart Retail-Ready Information](#)

### Measurement and Tracking

[The Sustainability Consortium](#)

[Sustainable Packaging Coalition](#)

[COMPASS tool](#)



### Protect the Product

[International Safe Transit Authority](#)

### Reduce Materials

[Sustainablepackdesign.com](#)

[Sustainable Packaging Coalition](#)



### Increase Sustainable Content

[Consumer Goods Forum](#)

[FTC Green Guides](#)

[Sustainablepackdesign.com](#)

[Sustainable Packaging Coalition](#)

### Enhance Material Health

[Chemical Footprint Program](#)

[GreenScreen List Translator](#)

[Material IQ](#)

[National Academy of Sciences](#)



### Design for Recycling

[Association of Plastic Recyclers](#)

[How2Recycle](#)

[FTC Green Guides](#)

[Sustainable Packaging Coalition](#)

### Communicate Recyclability

[Association of Plastic Recyclers](#)

[How2Recycle](#)

[FTC Green Guides](#)

[Sustainable Packaging Coalition](#)

# Meet Business Requirements

### Communicate with your buyer

Understand the buyer's priorities and meet business requirements (e.g., pack-and-a-half). Explore packaging changes with your buyer before implementing them.

- **Retail-ready solutions:** Using distribution packaging that also serves as a display has the potential to reduce total packaging material use across the packaging system and provide additional benefits. For more information, look at the [Walmart PDQ Resources](#).
- **Labeling compliance:** Refer to the Labeling and Packaging Guidelines on Retail Link.
- **Sam's Club guidance:** Refer to the packaging standards on Retail Link.

**For More Information:**  
[Walmart Sustainability Hub](#)



A shift to retail-ready reusable plastic containers in produce improved customer perception, with 60% saying the product looks fresher, and reduces environmental impacts (e.g., 85% lower solid waste)

# Measure Performance

Ensure that packaging changes are more sustainable, while considering potential [trade-offs](#). Measuring performance is critical.

Suppliers should evaluate key metrics and attributes across the system. These include:

- **Cost and performance**
- **[Sustainable Packaging Coalition Metrics and Attributes](#)** (use the [COMPASS tool](#) or life cycle assessment to evaluate), especially:
  - Water use
  - Greenhouse gas emissions
  - Material health
- **[The Sustainability Consortium](#) Key Performance Indicators**, especially:
  - Recyclable content
  - Post-consumer recycled content
  - Renewable content
  - Fiber from certified responsibly managed forests

### For More Information:

[COMPASS](#)

[The Sustainability Consortium](#)

[Sustainable Packaging Coalition](#)

## Improve Your Sustainability Index Score



### Consider

resource conservation, material and process efficiency, and weight or volume optimization as part of the packaging-product system design.



### Establish

goals to address the above factors and publicly report progress.



### Demonstrate

quantified environmental impact reduction.

Source: [The Sustainability Consortium](#)



## Consider the Entire Packaging System

Packaging is a “system,” beyond the product package on the shelf. One packaging change may impact other parts of the system: material sourcing, manufacturing, distribution, use/end-of-life. Be sure to [measure performance](#) and consider potential consequences across the packaging system to make informed decisions.



When developers used recycled content in cartonboard, thickness had to increase to retain integrity and quality and avoid product damages



Reducing the materials in a wine bottle also reduced the space needed on the truck for distribution

## The Packaging System



### Material Sourcing

Recycled  
Fossil Fuels  
Renewable



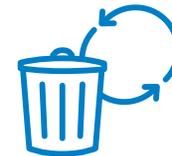
### Manufacturing



### Distribution and Retail



### Consumer Use



### Recycling and End-of Life

Recycling  
Reuse  
Compost  
Waste

# Protect the Product

[International Safe Transit Authority](#) (ISTA) establishes standards used to ensure that packaging provides adequate protection during transport. Key ISTA tests for Walmart and Sam's club include, but are not limited to:

- **ISTA 2A:** non-conveyable cases
- **ISTA 3A:** conveyable cases moving through the Walmart Regional Distribution Centers
- **ISTA 3E:** unitized loads of same product
- **ISTA 6:** Sam's Club

### Product types commonly with high damage rates:



### For More Information:

[International Safe Transit Authority](#)

# Source Reduce Packaging

Source reduction is reducing the amount of materials entering the waste stream by redesigning packaging or the product. This approach to using packaging materials more efficiently is a fundamental strategy of sustainable packaging.

### Source reduction packaging considerations

- Can the product be changed to reduce overall packaging needs (e.g., concentrating, dimension changes)?
- Are there extra layers or components that are unnecessary?
- Can the size, weight, or thickness of the package be reduced?
- Is the case count optimized?
- Are there unnecessary empty spaces within the package?
- Can reusable packaging be used?
- Has the transport packaging been considered?
- For larger packages, is there a way to include a handle so a bag doesn't need to be used to carry it home by the customer?

### Reducing extra space in packaging across the system

Take a look inside the package to see if there is extra space. If so, talk to your buyer about testing a smaller package design or see if the product can be compressed to remove excess air voids.

Minimize transportation of unneeded air by considering how the packages fit during distribution, aiming to remove extra space on the pallet and in the truck. The primary objective is to increase cube utilization (since distribution is in squared shapes).

### For More Information:

[Sustainablepackdesign.com](http://Sustainablepackdesign.com)

[Sustainable Packaging Coalition](http://SustainablePackagingCoalition)



Reduced amount of PET by 10% with redesign and included 30-50% post-consumer content



Clock package without the typical plastic window



The package was "right sized" with a one inch smaller width, reducing 6% of material and weight



Packaging shape was changed, improving efficiency in transportation packaging and reducing plastic use on average 3% across the category

# Recycled Content

## Use and label recycled content

Recycled materials that have been recovered or diverted from the waste stream, either during the manufacturing process (pre-consumer) or after consumer use (post-consumer) can offset the need for new, or virgin, resources. This may also reduce energy requirements for the production of packaging materials and reduce waste.

**Post-consumer recycled (PCR) content is preferred**, and includes material that has served its intended purpose and is diverted from the landfill. This may come from households or commercial facilities (e.g., returns of materials from the distribution chain).

**Label recycled content** by clearly identifying the percentage of total recycled content and, specifically, PCR content.

**1 ton**  
of recycled fiber saves

 **7,000**  
gallons of water

 **3.3** cubic yards  
of landfill space

 **1 MT**  
CO<sub>2</sub>e emissions

Source: [EPA](#)

## For More Information:

[Consumer Goods Forum](#)

[FTC Green Guides](#)

[Sustainablepackdesign.com](#)

[Sustainable Packaging Coalition](#)

 **Index Results:** Some suppliers include 100% post-consumer recycled content in packaging for:

- Infant consumables
- Toys
- Closet and organization
- Grocery dry goods
- Produce
- Grocery direct store delivery (DSD)
- Seafood

100% PCR may be an option for many products, but the industry averages are much lower, so there is opportunity to improve.

(Source: [Sustainablepackdesign.com](#))

Materials	Average PCR
PET	13%
HDPE	2%
Tree Fiber	41%

# Sustainably Sourced Renewable Content

### Use and label fiber from certified responsibly managed forests

Trees are the most common renewable source used in packaging. There are environmental concerns with harvesting trees. To address environmental concerns with deforestation, use fiber from sources recognized for their use of responsible management practices—certified sources. This strategy ensures that the productivity of natural systems is maintained and best practices are used to minimize unwanted impacts to soil, air, and water. Certification options for tree fiber include:

- [Forest Stewardship Council](#) (FSC)
- [Programme for the Endorsement of Forest Certification](#) (PEFC)
- [Sustainable Forestry Initiative](#) (SFI)

Tree fiber should be either recycled content or from certified responsibly managed forests, or a combination. The right balance depends on the product and package.

**Innovation:** New renewable materials, e.g., biobased plastics, are encouraged when there is an end market for the material.

### For More Information:

[Consumer Goods Forum](#)

[FTC Green Guides](#)

[Sustainablepackdesign.com](#)

[Sustainable Packaging Coalition](#)

 **Index Results:** Some suppliers include 100% sustainably sourced renewable content in packaging for:

- Household paper goods
- Household chemicals
- Infant consumables
- Pets
- Toys
- Closet and organization
- Grocery dry goods
- Produce
- Grocery direct store delivery (DSD)
- Bread
- Seafood

# Priority Chemicals

Continuous improvement is a hallmark of sustainability. We encourage suppliers to remove/reduce/restrict the use of materials that may present human health and environmental toxicity risks. Our customers expect that the products they buy are safe, affordable, and sustainable, and we're striving to meet and exceed those expectations.

**Priority chemicals** are substances with certain hazardous properties that can affect human health, and/or the environment. A priority chemical is defined as a chemical that meets the criteria for classification as a:

- Carcinogen
- Mutagen
- Reproductive toxicant
- Persistent, bioaccumulative, and toxic
- or any chemical for which there is "scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern

(Source: [Registration, Evaluation, Authorization and Restriction of Chemicals \(REACH\) Title VII, Chapter 1, Article 57](#))

### For More Information:

[Chemical Footprint Program](#)

[GreenScreen List Translator](#)

[Material IQ](#)

[National Academy of Sciences](#)

Once you know the chemicals in packaging, consider using tools to determine if they are priority chemicals, such as [GreenScreen List Translator](#) (and associated tools, e.g., Toxnot, Pharos), or having a third-party conduct the assessment, such as [Material IQ](#).

See the [National Academy of Sciences](#) for more information on assessing chemicals.

# Design for Recycling

**Recyclable packaging** can be collected, separated, or otherwise recovered from the waste stream through an established recycling program (available to at least 60% of consumers or communities where the item is sold) for reuse or use in manufacturing or assembling another item (i.e., an end market), preventing it from becoming waste. See [FTC Green Guides](#) for more information.

**Preferred materials** have high value end markets:

- Plastic: [PET](#), high density polyethylene (HDPE), polypropylene (PP), and recycled resins (ensure color is appropriate for recycling that specific plastic)
- Fibers: Paper/cardboard from certified responsibly managed forests or with high percentage of recycled content
- Metals: Aluminum and steel

**Avoid:**

- [Biodegradable additives in petroleum-based plastics](#)
- [PVC](#)
- Attachments, or make sure they can be easily separated
- Closures that are not the same material as parent package, or make sure they can easily be separated
- Inks that bleed in recovery stream wash water
- Adhesives that are not water soluble, or use as little as possible
- Paper labels on plastic packaging
- Black plastic

(Source: [Registration, Evaluation, Authorization and Restriction of Chemicals \(REACH\) Title VII, Chapter 1, Article 57](#))

**For More Information:**

[Association of Plastic Recyclers](#)

[How2Recycle](#)

[FTC Green Guides](#)

[Sustainable Packaging Coalition](#)

 **Index Results:** Every category has at least one supplier using 100% recyclable packaging



PVC was replaced with PET so the package is made from preferred materials for recycling

If your package does not have an end market, work to establish it or change your package to one that does

Plastic packaging should meet [Association of Plastic Recyclers'](#) tests for recycling compatibility

# Consumer-Friendly Recycling Label

Most recyclable packaging ends up in the landfill; approximately one-third of PET bottles and jars are recycled in the U.S. (Source: [EPA](#)). A key way to address this is to clearly communicate the recyclability of the package. The [How2Recycle](#) label is recommended in the U.S.

### Do's and Don'ts to creating a recycling label:

- Do ensure there is evidence to support recycling communication on the package (not just the material used for the package), considering:
  - Collection for recycling
  - Separating and reprocessing ability
  - End market
- Do communicate how each package component should be handled
- Do have a credible third party entity validate the label
- Do use clear, prominent, and consistent messaging to consumers
- Do meet FTC guidelines, using any necessary qualifying language
- Do not convey the recyclability of only part of your packaging
- Do not rely on the [Resin Identification Code](#) and chasing arrows
- Do not only use language saying "please recycle" or "recyclable"
- Do not confuse recyclable and recycled

### For More Information:

[Association of Plastic Recyclers](#)

[How2Recycle](#)

[FTC Green Guides](#)

[Sustainable Packaging Coalition](#)

The U. S. Federal Trade Commission (FTC) provides guidance for appropriate claims, including recyclable, recycled content, and others. The FTC states that "A product or package should not be marketed as recyclable unless it can be collected, separated, or otherwise recovered from the waste stream through an established recycling program." 16 CFR260 § 260.12. See the [FTC Guides for the Use of Environmental Marketing Claims](#), aka the "Green Guides".



(Source: [EPA](#))

# Glossary

**Biodegradable additives in petroleum-based plastics** do not offer any sustainability advantage and they may result in more environmental harm (See the Sustainable Packaging Coalition [position on these materials](#) for more information).

**Polyethylene terephthalate (PET)** a plastic that is commonly accepted for recycling.

**Polyvinyl chloride (PVC)** should not be used as a packaging material type, label, or used for closures or attachments since they may increase the contamination of other plastic recycling streams.

**Priority chemicals** are substances with certain hazardous properties that can affect human health, and/or the environment. A priority chemical is defined as a chemical that meets the criteria for classification as a carcinogen, mutagen, reproductive toxicant, or is persistent, bioaccumulative, and toxic; or any chemical for which there is

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“scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern.” (Source: [Registration, Evaluation, Authorization and Restriction of Chemicals \(REACH\) Title VII, Chapter 1, Article 57](#)) (See the [National Academy of Sciences](#) for more information on assessing chemicals).

**Recyclable** packaging can be collected, separated, or otherwise recovered from the waste stream through an established recycling program for reuse or use in manufacturing or assembling another item instead of becoming waste (See the [FTC Green Guides](#) and [Sustainable Packaging Coalition Centralized Availability of Recycling Study](#). Preferred materials, those that have high value end markets:

- Plastic: PET, high-density polyethylene (HDPE), polypropylene (PP), and recycled resins (ensure color is appropriate for recycling that specific plastic)

- Fibers: 100% paper/cardboard from certified responsibly managed forests and/or with high percentage of recycled content

- Metals: Aluminum and steel

**Recycled** materials have been recovered or diverted from the waste stream, either during the manufacturing process (pre-consumer) or after consumer use (post-consumer).

**Source reduction** refers to reducing the amount of materials entering the waste stream by redesigning packaging (e.g., lightweighting) or patterns of production or consumption (e.g., using returnable beverage containers).

**Sustainability Index** tracks progress against Walmart’s goal to sell products that sustain people and the environment through questionnaires that are based on Key Performance Indicators (KPIs) developed by [The Sustainability Consortium](#).