

# Sustainable Labelling Solutions

Labels + Packaging  
Innovations Guide  
Europe  
2020



“  
 We are committed  
 to making every product  
 we develop more  
 sustainable than its  
 predecessor.  
 ”

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## Labelling solutions that enable sustainability

As trailblazers and innovators in the labels and packaging industry, we aim to delight our consumers on all fronts – with advanced materials, design, aesthetics, experience, sustainability and technology. And while serious strides have been made already, the future is coming fast and change is a constant.

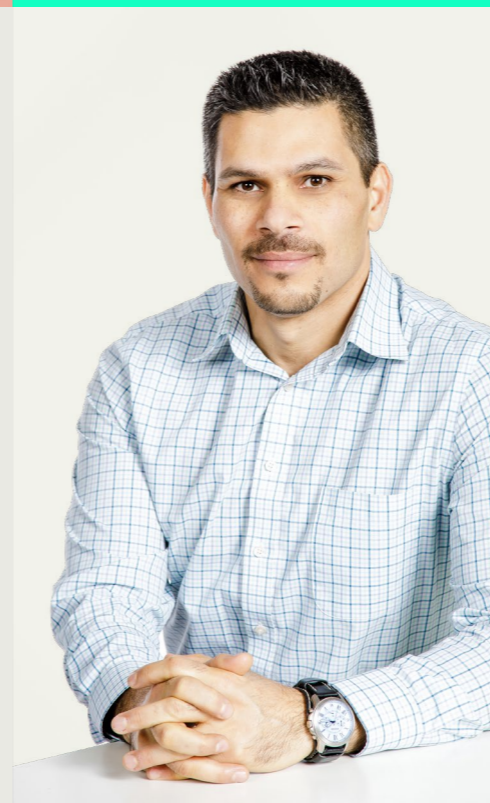
We always aspire to be at the forefront – to understand not only what our customers need today, but what they don't know that they need yet. Through our Eco-Design approach, we are committed to making every product we develop more sustainable than its predecessor. We believe working together with the industry, the ecosystem and our customers is key to delivering the sustainable and intelligent label solutions for the decades to come.

Whether it's packaging that vanishes, easily enters the circular economy, is digitally connected, or has longevity through up-cycling, brands need to be prepared and embrace new technologies, materials, and sustainable designs as more choice becomes available.

We strive to be sustainably conscious not just because the world expects us to do things sustainably, but because we do. And the future of labelling is now.

### **Hassan Rmaile**

Vice President and General Manager  
 Label and Graphic Materials EMEA  
 Avery Dennison



## Sustainable Packaging Trends

A growing focus on sustainability and carbon reduction is shifting the conversation in the labels and packaging industry. As demand for sustainable packaging increases, global brands must evolve or be left on the shelf.



## Sustainability Regulations

Globally, governments at the local and federal level are creating incentives for brands to cut their carbon footprint. Consumer packaged goods, with limited lifespan packaging, present a big opportunity to reduce waste on a global scale. The €6.2 billion Circular Economy Programme in Europe is one such program, which includes a commitment to increase packaging recycling to 75% by 2030.

## Closing the Loop

According to a recent study from GlobalWebIndex<sup>1</sup>, over 60% of consumers want packaging that is easier to recycle, and in the past nine years, are increasingly willing to pay more for eco-friendly or sustainable products. Reengineering recycling programs, creating packaging with high recycled content, and product re-filling programs are all landing well with consumers demanding less waste and a more circular economy.

## IoT (Internet of Things)

As consumers are increasingly connected to the digital world in their everyday lives, they are also steadily hungrier for products that do the same. Packaging that connects to the virtual world offers brands the opportunity to share information on provenance, ingredients, and packaging recyclability—all through the simplicity of a QR code, RFID-enabled label, or NFC tag.

## Reinventing the Box

Online shopping is one of the most popular shopping methods, as it makes the global marketplace accessible for the typical consumer, and delivery is fast and cheap. A rise in branded e-commerce packaging and packaging that helps combat theft is shifting how brands deliver their goods to consumers. Some brands are getting rid of the box altogether and using a durable, reusable tote or container for product delivery.

## Plastic Free

A 2019 PwC survey<sup>2</sup> of 1,000 UK supermarket shoppers found that 52% choose goods that are packaged in materials they know can be recycled, and 48% of millennial shoppers have started swapping their regular brands based on packaging. Alternatives to plastic packaging include pack switching and plastic-free private labelling.



1. GlobalWebIndex, *Report: Sustainable Packaging in 2019*, accessed April 2020.  
 2. PwC, *The Road to Circularity: Why a circular economy is becoming the new normal*, published July 2019.

## Labels and Packaging Legislation

On a global level, labels and packaging legislation is more focused than ever on sustainability. To remain on the shelf, it's important to stay up-to-date and compliant.



### European Green Deal

The European Green Deal is the European Union's new agenda for sustainable growth. The aim is to reach net-zero greenhouse gas emissions by 2050.

One of the main blocks of the Green Deal is the new Circular Economy Action Plan, which announces initiatives along the entire lifecycle of products. The plan targets product design, circular economy processes, sustainable consumption, and aims to ensure that the resources used are kept in the EU economy for as long as possible.

### Waste Framework Directive (WFD)

WFD is an environmental protection measure that establishes how waste should be managed within the EU. It aims to reduce the environmental impact of waste and to encourage efficient use of resources through reuse, recycling, and other forms of recovery.

### Single-Use Plastics (SUP) Directive

In May 2018, the European Commission adopted new EU-wide rules to target the 10 single-use plastic products most often found on Europe's beaches and seas. The directive includes significant national consumption reduction of plastic food containers, plastic packets and wrappers, and beverage containers.

It includes new product design requirements, such as attached caps and lids for beverage containers, and creates a 90% collection target for plastic bottles. Producers are required to contribute to raising awareness, cleanup, collection, and waste treatment.

### Packaging and Packaging Waste Directive (PPWD)

PPWD is an EU harmonisation measure that establishes common rules to enable free trade of packaging and packaged goods throughout the EU. The objective is to help prevent obstacles to trade and to reduce the environmental impact of packaging.

The directive defines essential requirements on design that packaging must meet to benefit from the free movement guarantee. And it sets targets for the amount of used packaging that must be recycled or otherwise recovered in all EU member states.

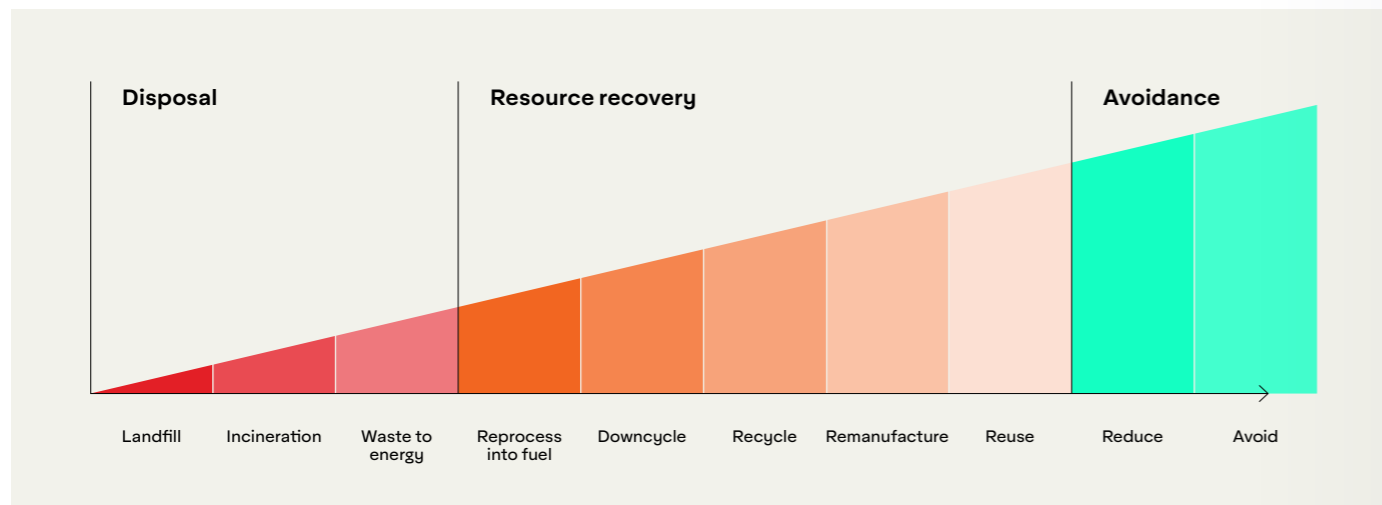
National differences in transposition have led to different ways of implementing the PPWD. As a result, there is wide variation in packaging waste management performance in the EU-28.

## Packaging Recyclability

To create sustainable packaging, we must adopt label technologies that reflect a whole systems approach—from materials design to end-use—and work in harmony with the existing recycling stream.

## The waste hierarchy

The waste hierarchy is a set of priorities for the efficient use of resources that advances the circular economy. In place of the traditional waste management approach consisting of three Rs (Reduce, Reuse, Recycle), it shows a more elaborate waste management hierarchy – listing actions in order of priority, from least to most favourable from an environmental perspective.



### Downcycling

Packaging is recycled for lower grade applications

Example:

Food grade packaging fibers are recycled into industrial grade fibers

### Recycling

Packaging is recycled for alternate applications

Example:

Food grade packaging fibers are recycled into non-food grade fibers

### Remanufacturing

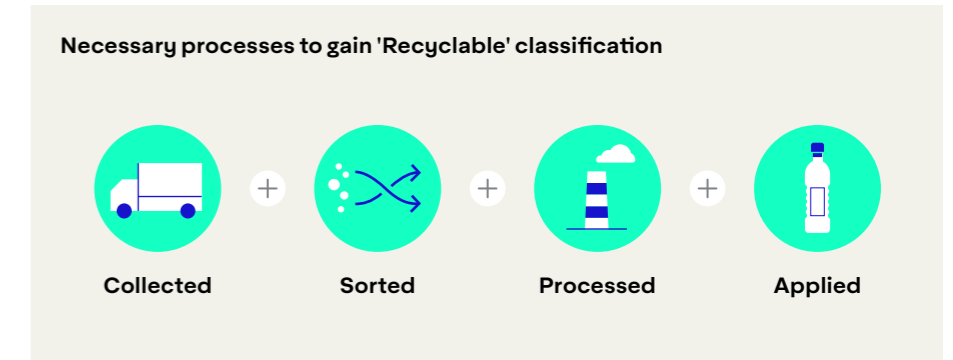
Packaging is recycled back into the same applications

Example:

Food grade packaging is remade into food grade packaging

## What does it mean to be recyclable?

To be considered “recyclable”, a product has to be collected, sorted, processed, and applied – none of these processes can be missing.



### Ease of recycling various material types

|                                    | Paper and Cardboard | Glass | Metal Cans | PET | HDPE | PP | PS |
|------------------------------------|---------------------|-------|------------|-----|------|----|----|
| Organised collection               | ●                   | ●     | ●          | ●   | ●    | ●  | ●  |
| Easy to separate                   | ●                   | ●     | ●          | ●   | ●    | ●  | ●  |
| Availability of recyclers          | ●                   | ●     | ●          | ●   | ●    | ●  | ●  |
| Outlets for recycled materials     | ●                   | ●     | ●          | ●   | ●    | ●  | ●  |
| Food grade options for recyclates  | ●                   | ●     | ●          | ●   | ●    | ●  | ●  |
| Decoration impact on recyclability | ●                   | ●     | ●          | ●   | ●    | ●  | ●  |

Key: ● Technical challenges ● Some challenges ● Fully established

### Main plastics types, applications and recycling potential


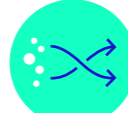


| PET  | HDPE  | PVC  | LDPE   | PP   | PS  | EPS  | OTHER  |
|--|---|--|--|--|---|--|--|
| ●  | ●   | ●  | ●  | ●  | ●   | ●  | ●  |
| Bottle to bottle   | Bottle to bottle  | Limited options                            | Downcycled   | Downcycled   | Limited options   | Limited options  | Limited options  |
| Water & soft drink bottles, salad domes, biscuit trays, salad dressing and peanut butter dressings | Milk bottles/ jugs, freezer bags, dip tubs, shopping bags, ice cream containers, juice bottles, shampoo bottles, chemical & detergent | Cosmetic containers, commercial cling wrap | Squeeze bottles, cling wrap, shrink wrap, rubbish/trash bags | Microwave dishes, ice cream tubs, potato chip bags, dip tubs | CD cases, water station cups, plastic cutlery, imitation crystal glassware, video cases | Foamed polystyrene hot drink cups, hamburger take-away clamshells, foamed meat trays, protective packaging for fragile items | Water cooler bottles, flexible films, multi-material packaging |

## What is the difference between chemical and mechanical recycling?

**Chemical recycling** describes innovative technologies where plastic waste is converted into feedstock that can be used to create new plastic products. Because chemical recycling methods and output varies, its environmental and economic impact are still being evaluated by the industry.

**Mechanical recycling** is a method by which waste materials are recycled into secondary raw materials without changing its basic structure. The material passes extensive manual or automated mechanical sorting processes in specialised facilities, designed to separate the different material streams. After the cleaning and grinding processes, the material is recovered by remelting and re-granulating.

In terms of use, chemical recycling is a complementary solution to mechanical recycling, where the latter proves to be inefficient in case of difficult to recycle plastics, i.e. not properly sorted, multilayered, or heavily contaminated waste.

| Recycling methods  |   |   |  |   |
|--|---|---|--|---|
|  | <br>Collected | <br>Sorted                              | <br>Processed | <br>Applied |
| <b>Mechanical recycling</b><br>The four steps are part of the recycling process. Depending on these steps the waste finds its route either to: |   |   |  |   |
| Bottle-to-bottle recycling   |   | Perfect sorting and no contamination. Preferred route for circularity in the future.                                      |  | Remanufactured into the same object, i.e. bottles   |
| General plastic recycling  |   | Sorting is not perfect but can be used in alternate applications. This is commonly the existing route.                    |  | Recycled into other applications, i.e. clothing, outdoor furniture, automotive parts            |
| <b>Chemical recycling</b><br>Mixed plastics to virgin material quality   |   | Sorting still required. Mixed material can be recycled back to its base and make material equivalent to virgin standards. |  |   |

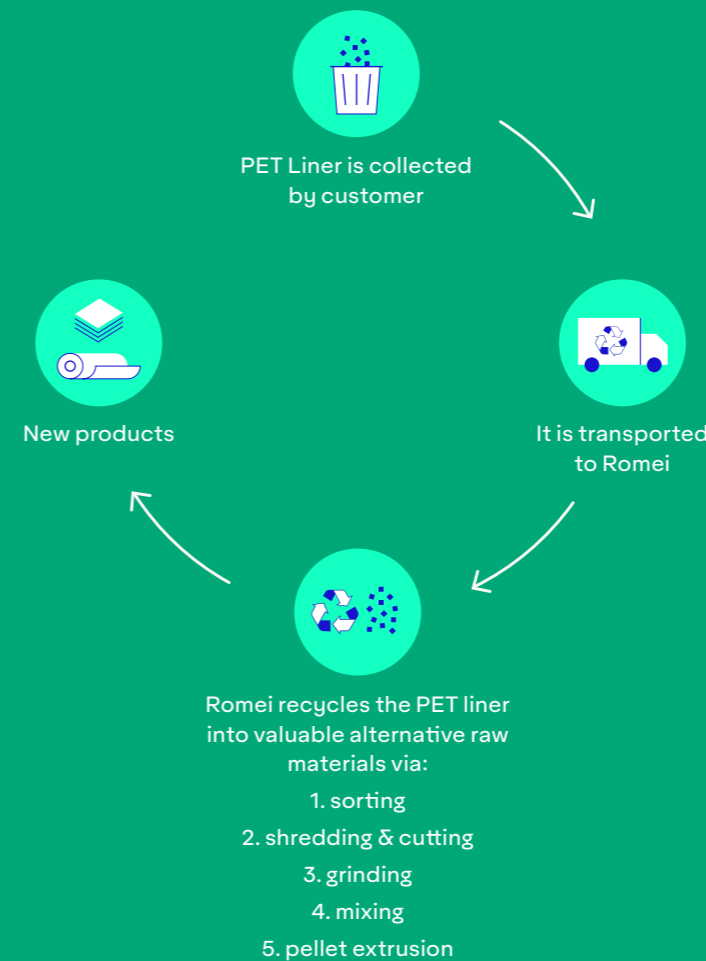
## Creating a circular economy with Romei Replastics

To support our customers in finding solutions that enable recycling, Avery Dennison has partnered with Romei Replastics to convert waste material from the labelling process into new raw materials. The process includes collecting PET liner from customers, reshaping into flakes and high performance compounds, and recycling into new products.

Romei Replastics has 6,000 sqm of recycling facilities in Scarperia e San Piero, Italy, with a production capacity of 10 tons per hour. Their facility uses only renewable energy, including energy produced by 3,000 sqm of photovoltaic panels. The company also collects, purifies, and reuses rainwater that is used in the extrusion process.

Two main challenges for recycling PET liners are the quality of the material delivered and local legislation. To be reshaped, scraps must be clean, homogeneous, and properly palletized before transportation. The presence of contaminants or other polymers makes them not recyclable through mechanical recycling. In terms of legislation, PET liner scrap collected from label producers is considered industrial waste and can be legally recycled. The same scrap collected from end-users is considered a waste material and must be handled in compliance with waste regulation, which limits recycling capacity and transportability.

If three quality requirements are respected - no contaminants, no mixing with other plastics, and proper packaging - PET Liners material becomes a reusable resource.



“ Avery Dennison's employees have a sincere interest in environmental issues and sustainability. Beyond the slogans, what makes the difference is the real motivation behind the efforts to find sustainable solutions. We are happy to work together and contribute to a circular economy. ”

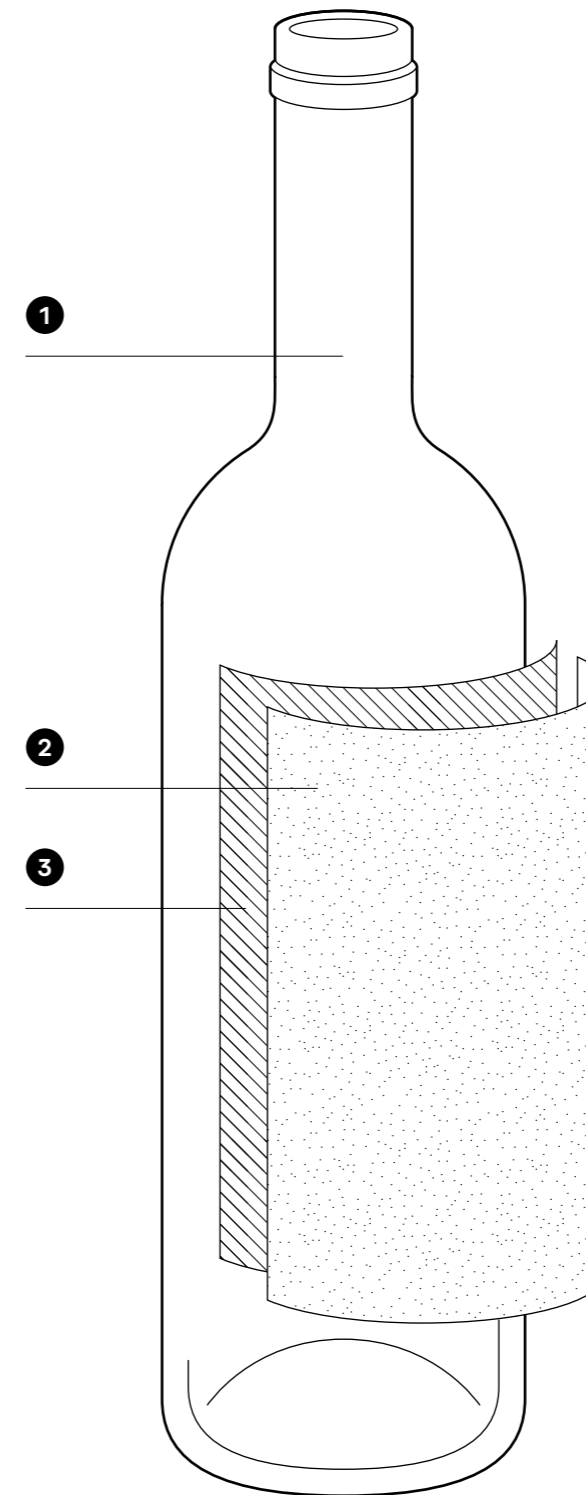
**Daria Romei**  
Managing Director  
Romei Replastics

Designing for Recyclability

# Choosing the right label design for your product starts with understanding how the packaging protects your product, enhances consumer use, and enables a sustainable end-life.

| 1   | 2  | 3   |
|---|--|---|
| The container   | The label material   | The adhesive  |
| <b>Product</b>  |  |   |
| <p>Choosing a container starts with the requirements of your product, including safe delivery of your product to the consumer, and meeting safety requirements and compliance regulations.</p>  | <p>After the label material has met its compliance requirements, consider how its appearance will communicate the sustainability of your brand, product, and packaging. What material will convey your brand's sustainability focus best and look best on the shelf?</p>   | <p>The combination of container, adhesive, and label can affect the legibility of the label, which could affect compliance, sustainability, and consumer use. If these are important to your product, you'll need to choose an adhesive that works with you.</p>  |
| <b>Use</b>  |  |   |
| <p>Considering how consumers use your product is crucial for choosing the right container. Single-use products might do better in a plain, functional container, while products used daily may need a durable container that's more aesthetically pleasing to the consumer.</p>     | <p>Ensuring the label can stand up to the use of the packaging is incredibly important for sustainability. If a label must be readable throughout the lifecycle of the product, a more durable material may be necessary. But for everyday products that consumers repeatedly buy and know how to use, perhaps a more minimal approach is appropriate.</p> | <p>Ensuring the label stays adhered for as long as necessary is an important consideration. A member of our team can help you choose an adhesive that works with your application and helps your brand meet your sustainability goals.</p>  |
| <b>Afterlife</b>  |  |   |
| <p>The lifecycle analysis of your product should include the packaging, as governments and consumers are looking to brands to create products that enable sustainability. If the container can't be recycled or reused, consumers may choose a product with packaging that can.</p> | <p>When the product comes to the end of its life, how will the label material affect the recyclability of the packaging? For sustainable brands looking to make a meaningful waste reduction, a recyclable or compostable label could be the right choice.</p>   | <p>A label shouldn't hinder the recyclability or reusability of the packaging material. When a product has finished its consumer life and is ready for the waste (or recycle) stream, how will the adhesive affect its sustainability? Make sure you choose an adhesive technology like CleanFlake technology that enables the recyclability of your product.</p> |

## What is Eco-Design?



We are committed to making every product we develop more sustainable than its predecessor, taking into account the whole product life cycle from the use of raw materials to the end of life.

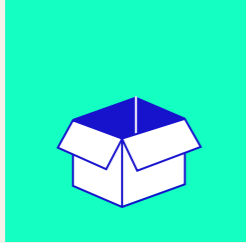



To promote proactive thinking, create awareness, and empower our teams to make bold decisions in product development, we have included Eco-Design in our approach to designing products. We have followed the basic steps of a standard life cycle analysis tool (LCA) and the guidelines we already have for our sustainable materials portfolio.

“Eco-Design is a multi-disciplinary and criteria-based process to develop products that have the best positive social, environmental, and financial impact.

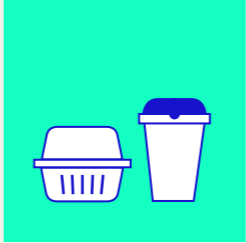

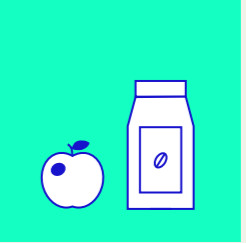
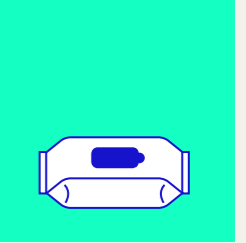
Eco-design is the guideline for the whole development process, from ideation to implementation, on how our products impact the entire value chain.

”

# Our sustainable solutions for each packaging substrate

|   | Cardboard  | PET  | HDPE  | PP   |
|---|--|--|---|--|
| <b>Packaging Substrate</b>              |   |                                   |                                       |                               |
| <b>Key end use segments</b>             | <ul style="list-style-type: none"> <li>• Transport</li> <li>• Logistics</li> </ul> | <ul style="list-style-type: none"> <li>• Beverage</li> <li>• Food</li> <li>• HPC</li> </ul>                        | <ul style="list-style-type: none"> <li>• Food</li> <li>• Beverage</li> <li>• HPC</li> </ul>                             | <ul style="list-style-type: none"> <li>• Dairy</li> <li>• HPC (minor)</li> </ul>                                 |
| <b>Label types and technologies</b>     | <ul style="list-style-type: none"> <li>• Paper DT (PSL)</li> </ul>                 | <ul style="list-style-type: none"> <li>• PP (Wrap around)</li> <li>• PP, Paper (PSL)</li> <li>• Sleeves</li> </ul> | <ul style="list-style-type: none"> <li>• Paper (Wet glue)</li> <li>• PE, MDO, Paper (PSL)</li> <li>• Sleeves</li> </ul> | <ul style="list-style-type: none"> <li>• Direct print</li> <li>• Paper (Wet glue)</li> <li>• PP (PSL)</li> </ul> |
| <b>Label separation process</b>         | Repulping  | Sink Float   | Sink Float & Air Blow (bottle to bottle)*   | Sink Float & Air Blow  |
| <b>Current Avery Dennison solutions</b> | Standard paper/VI labels   | CleanFlake™ technology   | Monomaterial packaging (HDPE)   | Monomaterial packaging (PP)  |

\* Only available in 2 facilities in Europe

|   | PS   | Glass   | Compostable Foil  | Flexible Packaging  |
|---|--|---|---|---|
| <b>Packaging Substrate</b>              |           |              |  |    |
| <b>Key end use segments</b>             | <ul style="list-style-type: none"> <li>• Food</li> <li>• Beverage</li> </ul>                 | <ul style="list-style-type: none"> <li>• Beverage</li> <li>• Food</li> </ul>                    | <ul style="list-style-type: none"> <li>• Food</li> <li>• Retail</li> </ul>          | <ul style="list-style-type: none"> <li>• HPC (wet wipes);</li> <li>• Food</li> </ul>  |
| <b>Label types and technologies</b>     | <ul style="list-style-type: none"> <li>• Direct print</li> <li>• Paper (Wet glue)</li> </ul> | <ul style="list-style-type: none"> <li>• Paper (Wet glue)</li> <li>• Paper, PP (PSL)</li> </ul> | <ul style="list-style-type: none"> <li>• Paper (PSL)</li> </ul>                     | <ul style="list-style-type: none"> <li>• PP, PET, PE (PSL)</li> <li>Or</li> <li>• In some cases combination of PET and PP or PET and PE label layers</li> </ul> |
| <b>Label separation process</b>         | Brush off paper label  | Washing, Sorting (visual & mechanical)  | Industrial composting   | No established recycling so far, CEFLEX advocating for Mono PE / Mono PP<br><br>In food PVDC-free OXYB solutions are preferred                                  |
| <b>Current Avery Dennison solutions</b> | Monomaterial packaging (PS)  | Wash off/ glass recycling solutions   | Monomaterial and compostable labels   | Monomaterial PE / Mono PP labels<br><br>PVDC-free OXYB PP labels  |



“ Working together with the industry and our customers is key to delivering the sustainable label solutions of the future.

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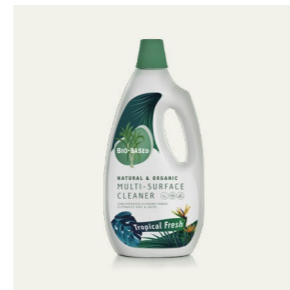
## Sustainable Labelling Products

### Responsibly Sourced

**Products sourced from a supply chain that shows care for people and the environment**  
Using existing production methods, our responsibly-sourced labelling solutions help brands communicate positive values, reduce dependency on fossil fuels by protecting scarce resources, and reduce the carbon footprint of the label.



**FSC®-certified**  
We offer the industry's widest selection of Forestry Stewardship Council® -certified facestocks. More than 80% of the paper products we purchase are made with wood fiber certified by FSC.



**Bio-based PE**  
This bio-based PE filmic facestock is made from sugarcane ethanol. The resin used to produce the facestock is Bonsucro® certified and the biobased content is minimum 80%.



**Bio-based PP**  
PP label made from renewable, non-fossil based sources – such as plant-based oils – with up to 100% bio-based content and ISCC certified.



**Cane Fiber Paper**  
Paper made with a minimum of 90% bagasse fiber, sourced from sugar cane waste.



**Cotton**  
Face material made from 100% cotton linters. Cotton linters are the short fibers remaining on the cotton seed after ginning and are a by-product of the textile industry.



**MarbleBase**  
Facestock made from calcium carbonate derived from marble mining waste (80%) and HDPE.

Labelling with sustainability in mind has different meanings for different companies. From responsible sourcing to enabling end-user and commercial recycling, we have solutions that meet your goals.

### Contains Recycled Content

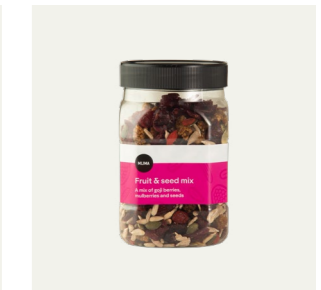
**Give a second life to what we have already used**  
Our sustainable labelling solutions leverage the circular economy concept with products made with up to 30% recycled content, which saves resources including water, energy, and greenhouse gases.



**rCrush**  
The rCrush range is produced with 15 percent agri-industrial by-products and 40 percent post-consumer recycled paper. Choose from facestock made with organic by-products including grape, citrus, and barley.



**rDT eco**  
Thermal eco BPA-free and contains 15% recycled content from post-consumer waste with the same converting performance and DT printability as standard grade.



**rMC**  
FSC-certified recycled facestock made from 30% recycled post-consumer waste. Smooth semi gloss appearance, printing quality, and converting performance which are comparable to standard grade.



**rPE**  
Made with 30% recycled PE resin, rPE reduces reliance on fossil-fuel based films, consumes fewer resources and helps to keep plastic out of the waste stream.



**rPP Post-Consumer Recycled**  
ISCC-certified label material made with certified circular polymer (up to 100% chemically recycled resin from post-consumer waste).



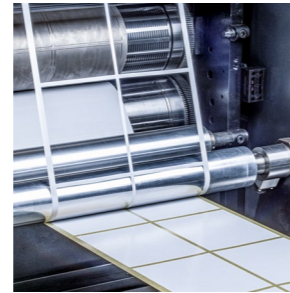
**rPP Post Industrial Waste**  
The first pressure-sensitive label from mechanically recycled PP. White cavitated PP produced from up to 22% post-industrial waste.

## Sustainable Labelling Products

### Contains Recycled Content



**Recycled wine labels**  
A range of paper facestocks, with 30% to 100% recycled content, and unique finishes ready to inspire creativity.



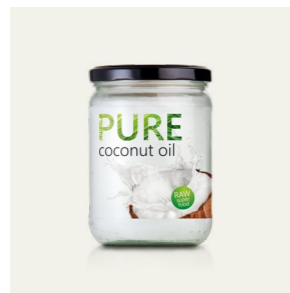
**rBG Liner**  
Made from 15% recycled content coming from liner waste, this liner offers the same conversion and dispensing performance as conventional liners.



**rPET Liner**  
Partially made from post-consumer waste from PET bottle flakes, rPET liner is available in 23 and 30 microns, with PET liner recycling options available.

### Reduction of Materials

**Uses only what is necessary**  
Products in our portfolio made with a reduction in materials are produced with less oil, water, and energy, resulting in a reduced carbon footprint compared to conventional label materials.



**ThinkThin**  
ThinkThin portfolio offers facestocks and liners that are up to 50% thinner than comparable constructions.

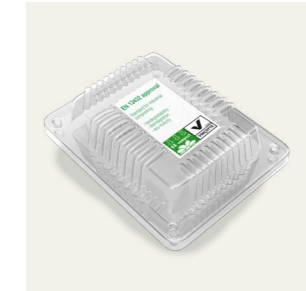
### Enables Recycling, Reuse or Compostability

#### What we use can be used again

Our labelling solutions support more effective recycling of containers with adhesives that facilitate easy removal in bottle washers without contamination of the washing water.



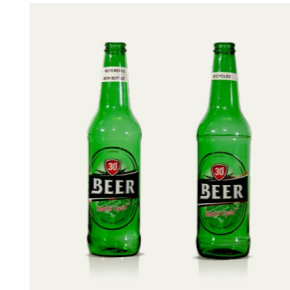
**CleanFlake™ Technology**  
A breakthrough adhesive solution that reduces contamination of PET flakes by allowing the label and container to neatly separate during the recycling process.



**Compostable Labels**  
Biodegradable and compostable solution approved for direct contact for dry, non-fatty foods, which enables standard conversion using conventional printing techniques.



**Glass Recycling**  
A label solution that separates cleanly from the glass cullets during the recycling process, removing unwanted material from entering the recycling stream.



**MultiCycle**  
An ultra permanent self adhesive label solution for returnable beer and beverage containers that withstands 30+ product life cycles.



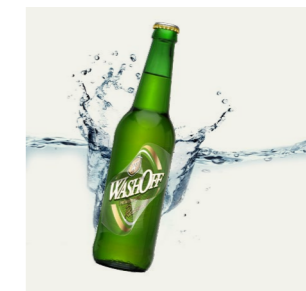
**Reclosures solutions— PP and PE**  
Functional reclosure polypropylene and polyethylene labels to enable PE and PP monomaterial packaging design and recycling for home and personal care.



**Reclosures solutions— Oxygen Barrier PP**  
PP reclosure that is PVDC-free, which supports the recycling process and helps to reduce food waste.



**Wash-off paper adhesives**  
Adhesives that create a wash-off label for various applications enabling reusability of the glass and plastic packaging.



**Wash-off labels**  
A label construction for returnable beer and beverage bottles, that allows labels to easily and cleanly detach from the bottle in a conventional bottle washer.

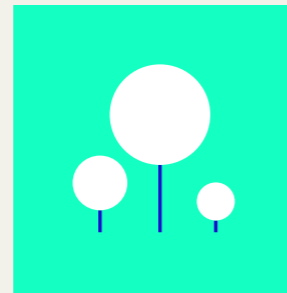
## Avery Dennison Life Cycle Assessment Tool

Environmentally responsible labelling and packaging can make for a greener world—and a greener bottom line, too. That’s why Avery Dennison has created a product life cycle assessment (LCA) tool that helps our customers understand the environmental consequences of their labelling and packaging decisions.

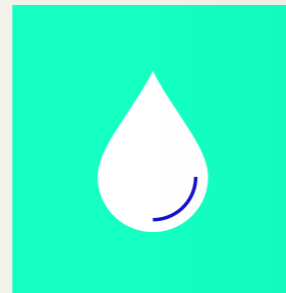
The tool compares two of our products and provides directional information on environmental impacts across six impact categories, from material extraction, to processing by Avery Dennison, to end of life.



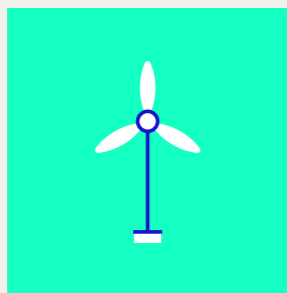
**Fossil material**  
A measure of the depletion of fossil resources for material inputs in barrels of oil equivalent. A barrel of oil is equivalent to 42 gallons or 158,98 liters.



**Materials from biobased sources**  
The amount of biobased sources required to produce a material.



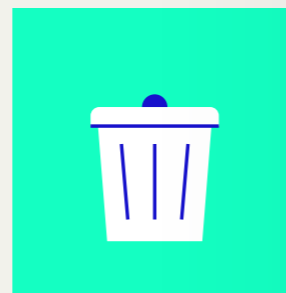
**Water**  
The amount of process water that is treated and discharged to receiving waters. This measure does not include water used for the generation of electricity via hydro power or water used for process cooling.



**Energy**  
A measure of the total amount of primary energy extracted from the earth, including petroleum, hydropower, and renewable sources such as solar power, wind power, and biomass. This does not include the amount of fossil material used as feedstock. The efficiency of electric power and heating processes is taken into consideration.



**Greenhouse Gases (GHG)**  
A measure of greenhouse gas emissions, such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O)



**Solid waste**  
A measure of the total amount of solid waste generated that is disposed of offsite. This does include waste prior to incineration..

## A Word on Sustainability

Sustainability is the highest point on the Avery Dennison agenda. We’re taking a wholly new approach right now because we see a real need for change in our industry. Our portfolio development with new products is driven by the concept of sustainability.

In the past, we innovated a product so it fit within the existing supply chain—for conversion and print, we made products that printed easily and looked nice. But in recent years, we’ve been thinking beyond the conversion and labelling process, taking into account the lifecycle of the label.

We realized that to create real sustainable solutions, we have to think about our products in a new way, beyond the point of use, into the afterlife and after use. This is where innovation starts. For example, if you understand how recycling is taking place globally, you realize the need for materials dedicated to each recycling stream, which means the product range today looks much different than it did years ago.

In terms of innovation, we have added to our sustainable design features so that with every new product we develop, the sustainability factor is higher. We’re focused on ensuring that each successive generation of product is more sustainable than the last, and we’re working in that direction as a team. Across our business, we’re focusing on getting the word out to customers, so they are aware of the function of a label in enabling sustainability.

The biggest change I see in terms of sustainability and innovation in our business is that we are not alone in thinking this way anymore. More often than not, we are approached by brand owners who are coming to us as the market leader for a labelling solution that meets their sustainability goals. Working together with the industry and our customers is key to delivering the sustainable label solutions of the future.

**Jan ‘t Hart**  
Senior Director  
Sustainability, Innovation  
and Compliance for Labels  
and Packaging Materials Europe



## Glossary of Terms

### **Biomass**

Material of biological origin, excluding material embedded in geological formations or transformed to fossilized material and excluding peat.

### **Closed loop system**

A system in which materials are reclaimed, returned to, and reused at the same material technical application equivalence or performance specifications as when the material was first used.

### **Compostability**

A characteristic of a product, packaging, or associated component that allows it to biodegrade, generating a relatively homogeneous and stable humus-like substance.

### **Degradable**

A characteristic of a product or packaging that, with respect to specific conditions, allows it to break down to a specific extent within a given time.

### **Eco Design**

A multi-disciplinary and criteria-based process to develop products that have the best positive social, environmental, and financial impact. The guideline for the whole development process, from ideation to implementation, on how our products impact the value chain.

### **Extended Producer Responsibility (EPR)**

A policy tool that extends the producer's full or partial financial and/or operational responsibility for a product to the post-consumer state of a product's life cycle in order to help meet national or EU recycling and recovery targets.

### **Greenhouse Gas (GHG)**

Gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by Earth's surface, atmosphere, and clouds.

### **Green chemistry**

The utilisation of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture, and application of chemical products.

### **Life cycle**

Consecutive and interlinked stages of a product system, from raw material acquisition or generation from natural resources to final disposal.

### **Pre-consumer/post industrial waste**

Material diverted from the waste stream during a manufacturing process. Excludes reutilization of materials such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it.

### **Post-consumer waste / post consumer recycled**

Material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. Includes returns of material from the distribution chain.

### **Post consumer resin**

A plastic that has been re-processed to be re-used in manufacturing, and consists of blended or recycled resins that would have otherwise become waste.

### **Post industrial resin**

Plastic waste recovered from industrial processes. Consists of blend or recycled resins coming from industrial waste. In contrast to PCR, PIR is recycled plastic that never left the manufacturing floor (and therefore never made it to the consumer).

### **Recovered material**

Material that would have otherwise been disposed of as waste or used for energy recovery, but has instead been collected and recovered as a material input, in lieu of new primary material, for a recycling or a manufacturing process.

### **Recyclable**

A characteristic of a product, packaging, or associated component that can be diverted from the waste stream through available processes and programmes and can be collected, processed, and returned to use in the form of raw materials or products.

### **Recycled content**

Proportion, by mass, of recycled material in a product or packaging; only pre-consumer and post-consumer materials are considered recycled content.

### **Recycled material**

Material that has been reprocessed from recovered [reclaimed] material by means of a manufacturing process and made into a final product or into a component for incorporation into a product.

### **Refillable**

A characteristic of a product or packaging that can be filled with the same or similar product more than once, in its original form and without additional processing, except for specified requirements such as cleaning or washing.

### **Renewable material**

Material that is composed of biomass from a living source and that can be continually replenished.

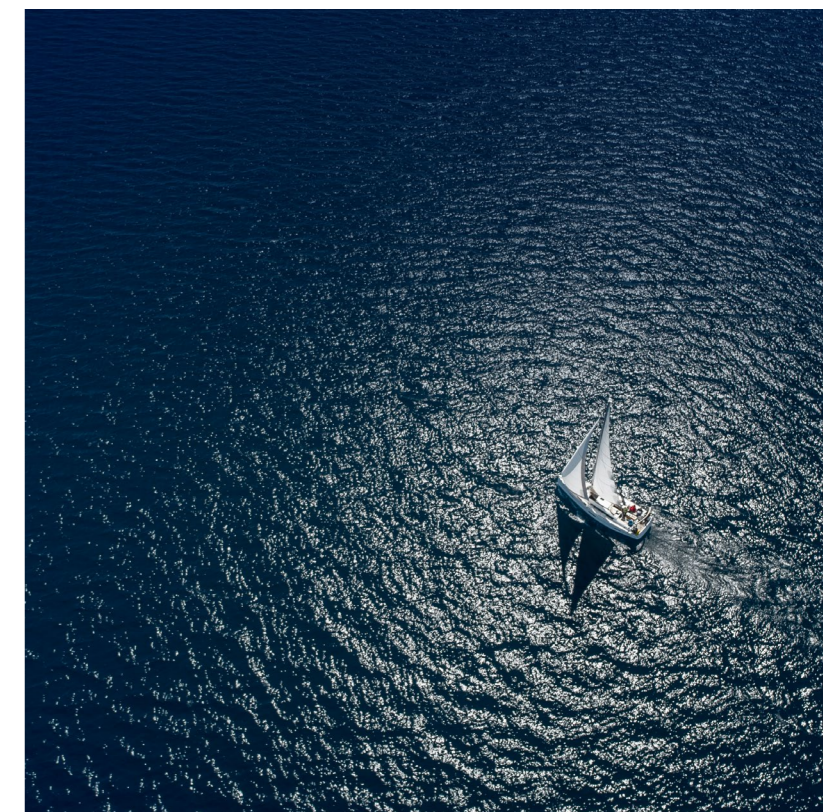
### **Reusable**

A characteristic of a product or packaging that has been conceived and designed to accomplish within its life cycle a certain number of trips, rotations or uses for the same purpose for which it was conceived.

### **Upgradability**

Characteristics of a product that allows its modules or parts to be separately upgraded or replaced without having to replace the entire product.

Definitions ISO 14021:2016(E) and UL 2809: 2019



# Avery Dennison: Your Partner for Sustainable Labelling Solutions

With an abundance of sustainable labelling solutions and a focus on driving sustainability in the labels and packaging industry, we help brands and manufacturers meet their sustainability goals.

Whether you're looking for a sustainable solution for an existing application, or you're looking to reinvent your packaging to be more sustainable, we want to work with you.



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## Who we are

As the pioneer in the pressure-sensitive industry, we bring one-of-a-kind capabilities to sustainable labelling. We combine decades of innovation with deep knowledge of both regulatory and legal requirements. We know about the real-world conditions in which our labels must perform, and the technical challenges they have to meet. Whatever your product, wherever it's going, we can help you develop a sustainable label that sticks with it.

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## What we stand for

**Sustainability. Innovation. Quality. Service.**

In 1935, we invented the first self-adhesive label, and we've never looked back. With each passing decade, our innovations have further shaped our industry by lifting the limits on what labels can do. The world's most successful brands know that innovation and evolution are the lifeblood of longevity and success. We're proud to help our clients continually expand the boundaries of what's possible.

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## Work with us

You're the expert in your business; we're the expert in labelling. Contact us today to find out how Avery Dennison can meet and exceed your needs.

[label.averydennison.com](http://label.averydennison.com)

Avery Dennison Corporate (NYSE:AVY) is a global materials science manufacturing company specializing in the design and manufacture of a wide variety of labeling and functional materials. The company's products, which are used in nearly every major industry, include pressure-sensitive materials for labels and graphic applications; tapes and other bonding solutions for industrial, medical, and retail applications; tags, labels, and embellishments for apparel; and radio frequency identification (RFID) solutions serving retail apparel and other markets. Headquartered in Glendale, California, the company employs approximately 30,000 employees in more than 50 countries. Reported sales in 2018 were \$7.2 billion.

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