RFID from A to Z: Everything You Need to Know

October 11-14, 2021

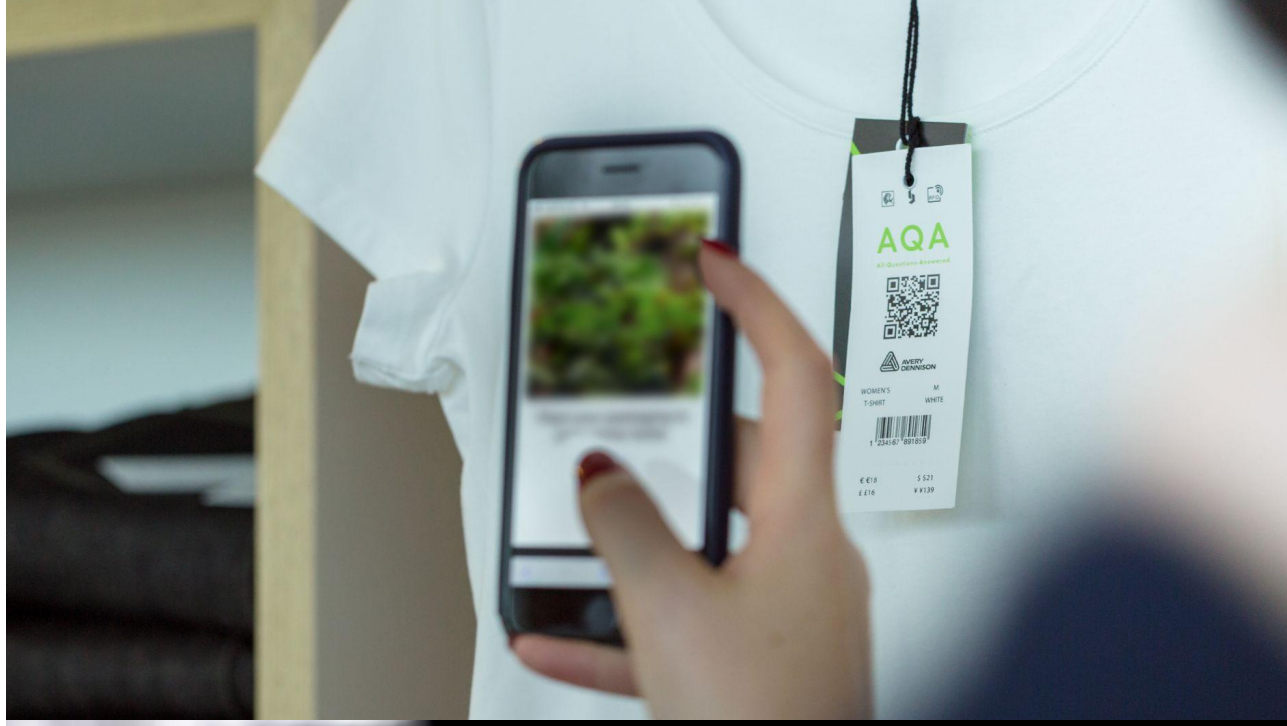
Agenda for today

14.00-14.05
Opening of the session

14.05-15.00
Panel discussion:
Understanding the ecosystem and imagining the future

15.00-15.45
atma.io & Sustainability

15.45-16.15
1-2-1 Networking session



Panel discussion: Understanding the ecosystem and imagining the future

- Explaining the connectivity ecosystem, future trends, potential changes and valuable partnerships that can impact your RFID business
- Analyzing current market conditions, including the impact of COVID-19
- Envision what the the future holds for the RFID Market
- Find your questions answered during a Q&A event

AVERY DENNISON

atma.io

Q & A

Presenting
atma.io, Avery Dennison's connected product cloud

Converters Academy
October 2021

Agenda

- Introduction
- What is atma.io
- How atma.io works
- Example
- Demo

Davide Redaelli

Market Development Manager atma.io

Avery Dennison Smartrac

Who we are

AVERY DENNISON

From MAKING PRODUCTS...

Avery Dennison is a materials science and manufacturing company specializing in the design and manufacture of a wide variety of labeling and functional materials.

Founded in 1990, Corporate headquarters in Glendale, California.

Ranked #427, Fortune 500 company.

Sales in 2020 was $7 billion.

Operations in more than 50 countries.

atma.io

...to CONNECTING PRODUCTS

Digital twin, digital life

Unique Digital IDs

Item level link between physical and digital worlds to create a connected consumer

A Single Source of Truth

Barcodes, QR codes, UHF RFID, NFC and BLE tags to digitize every instant of a product's life

Hardware & Software

Enhanced traceability and efficiency with IoT, readers, printers and field applications

Global Scale Support

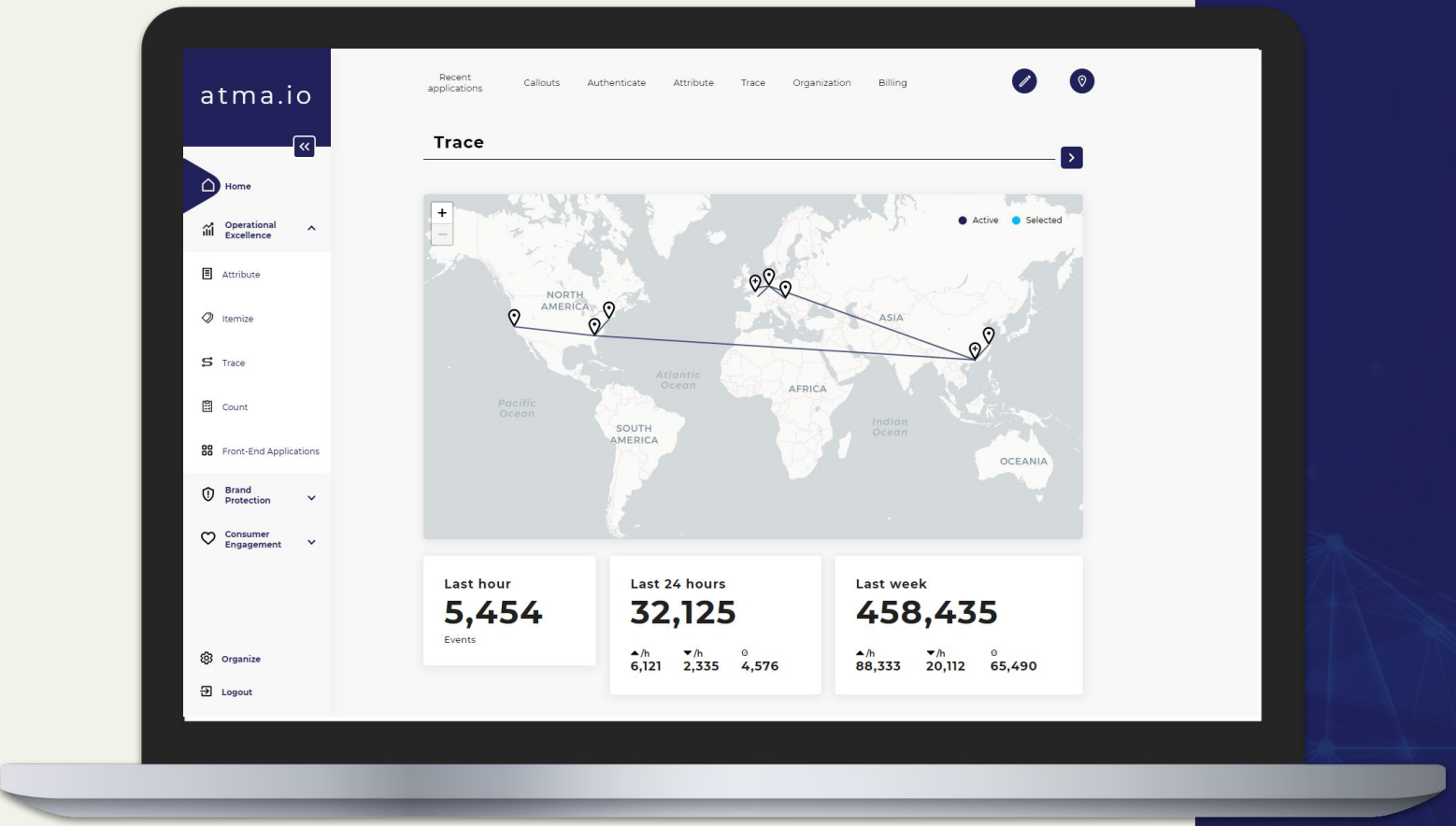
Access to a global network of over 5000 factory service and sales support experts

What is atma.io?

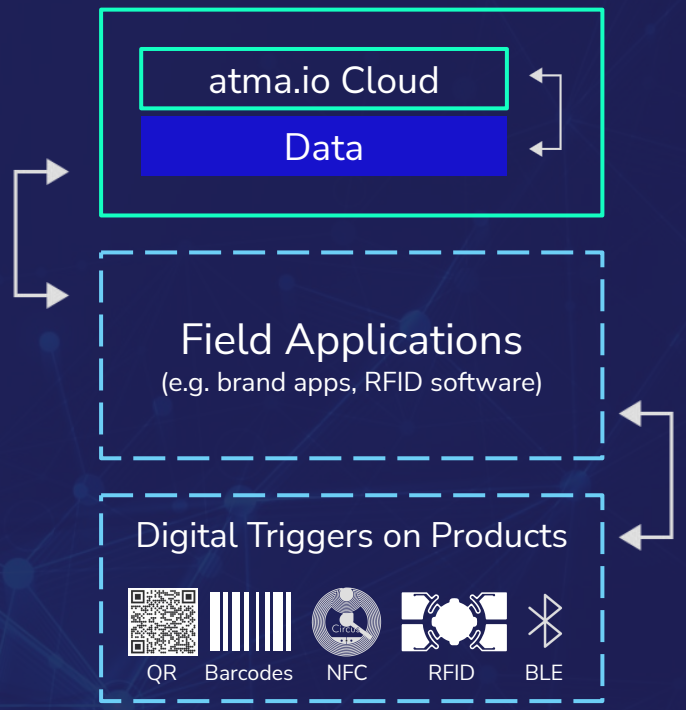
atma.io, connected product cloud by Avery Dennison

A platform that unlocks the power of **connected products** by assigning unique digital IDs to everyday items, providing unparalleled **end-to-end traceability and transparency** by enabling access to an **ecosystem of applications** designed for tracking, storing and managing all the events associated with each individual product – all the way from source to consumer and beyond, enabling circularity.

How atma.io works



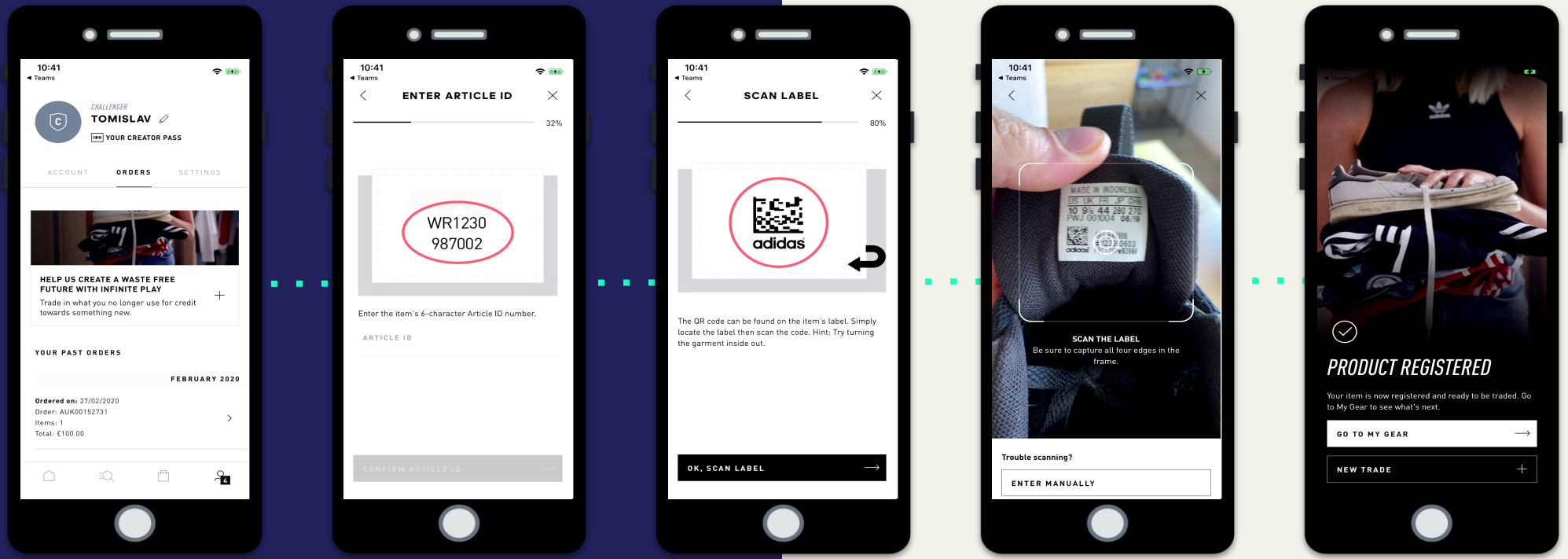
We bridge physical and digital worlds for every item



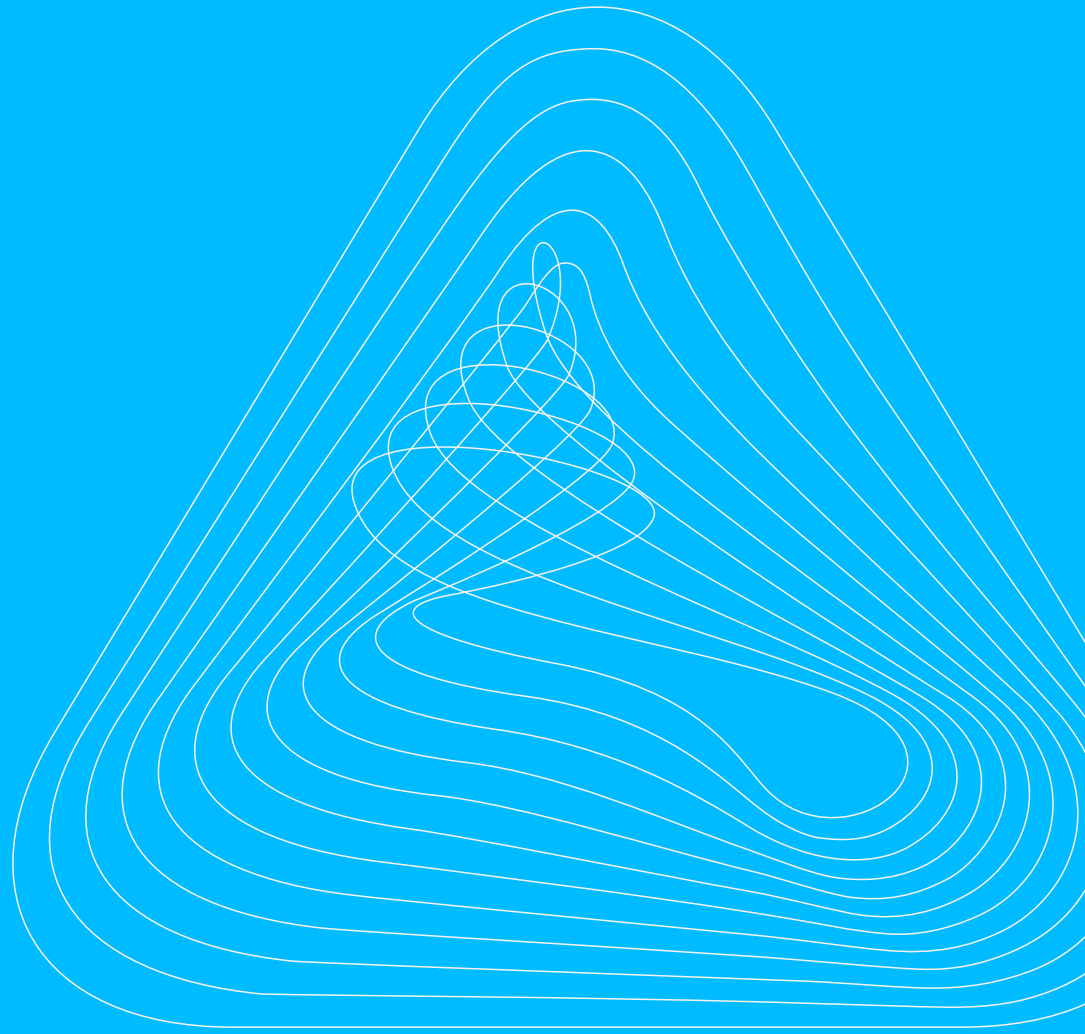
Example:

Adidas Infinite Play Program

atma.io back-end integrated into adidas mobile app



Demo time



AVERY DENNISON

atma.io

Q & A

Avery Dennison Smartrac Sustainability

October 11-14, 2021

Agenda

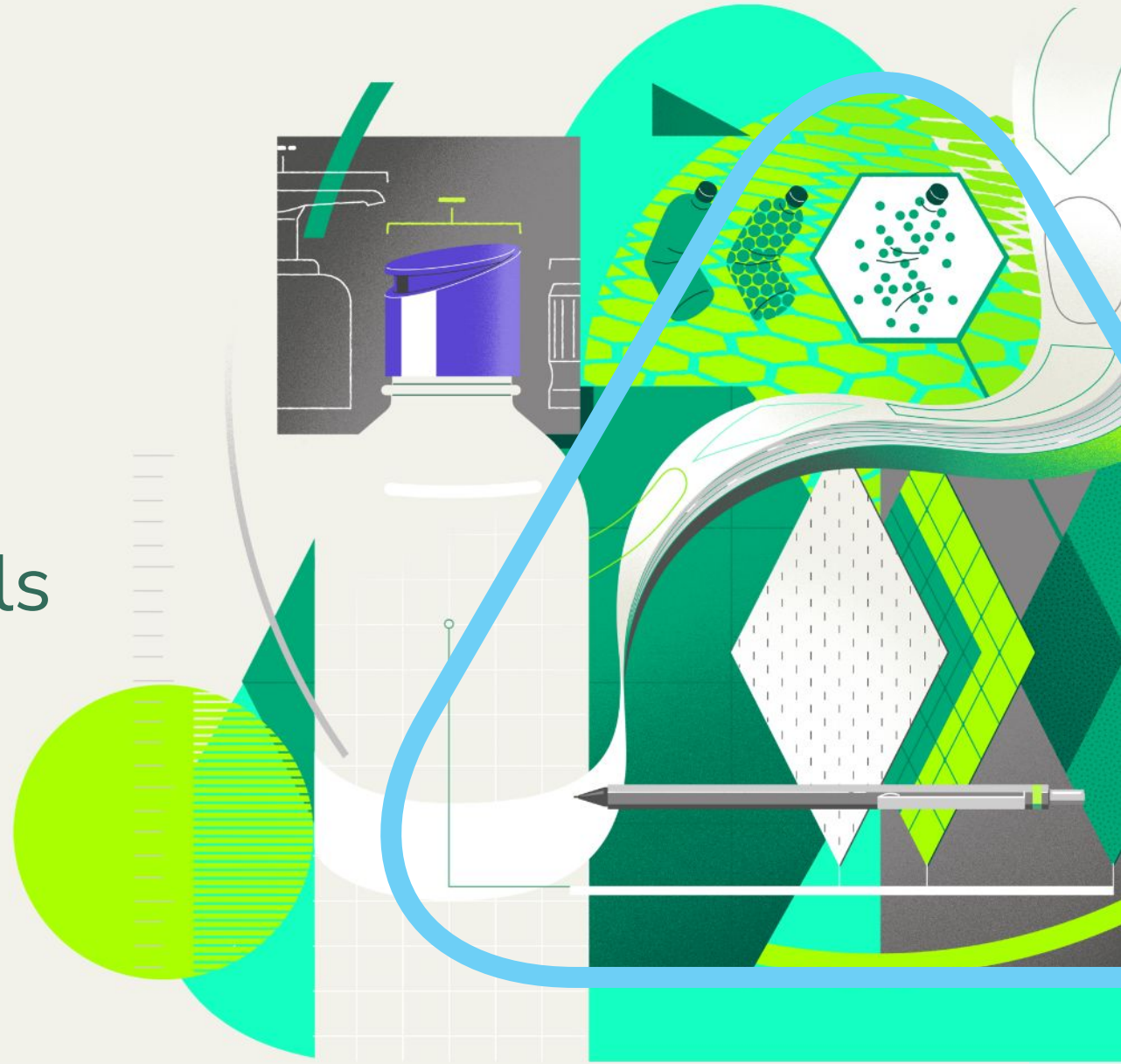
- Corporate Goals
- Product portfolio (what do we have and will have)
- Product Sustainability
- Product Portfolio
- LCA (life cycle assessment) of our product portfolio
- Recycling Strategy

Tyler Chaffo

Sustainability Manager,
IL, Retail Branding and
Information Solutions,

Avery Dennison Smartrac

Sustainability approach and how we are setting our goals

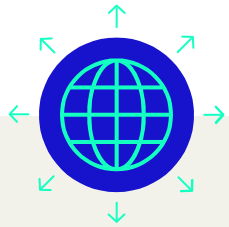


Improving sustainability and the bottom line

Sustainability is holistic to us, it starts with how we engage with our stakeholders and the focus on responsible sourcing materials, the products we make, how we engage with the broader ecosystem and ultimately the role that our solutions can play in our customers' value chains with enabling sustainability.

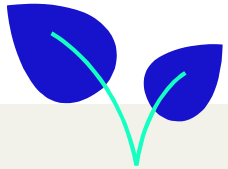
Doing business sustainably – growing while using fewer natural resources and reducing carbon emissions and other pollution – is now mandatory for companies, if not through regulation, then from a consuming public that expects the things they buy to have minimal impact on people and the planet.

As do our Avery Dennison 2030 sustainability goals: Partners and associations



Goal 1

Deliver innovations that advance the circular economy



Goal 2

Reduce the environmental impact in our operations and supply chain

Goal 3

Make a positive social impact by enhancing the livelihood of our people and communities

bluesign®

Sustainable Apparel Coalition

plasticbank

FSC

Rainforest Alliance

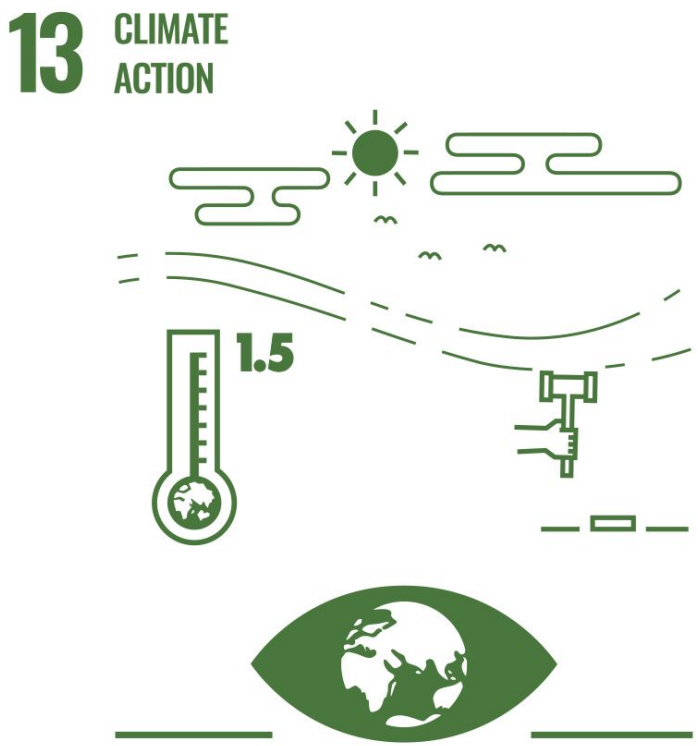
CLIMATE SAVERS
碳減排先锋
DEFENSORES DO CLIMA
クライメート・セイバーズ
WWF

UN GLOBAL COMPACT
United Nations Global Compact

UN SDG's

Alignment of Avery Dennison's 2025 Sustainability Goals to the UN's SDGs (**S**ustainable **D**evelopment **G**oals)

Click here to learn more



80%

of our top 10

customers have goals aligned with the UN SDG's

Goal#s 8, 12, 13 are the 3 most common aligned SDG's across top 20 customers

How are we making our products more sustainable?

Combining our innovation: Avery Dennison + Smartrac

With our combined organization we are now able to leverage the expertise that we have expanded over the years around sustainable innovation. With that in mind we focus on innovations that serve our customers and the communities we do business in.

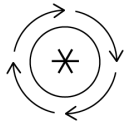
Our integrated philosophy:

- Products that align with our corporate goals reducing impacts in our operations and advance the circular economy
- Solutions that enable sustainability for our customers
- Life Cycle Assessment to identify the lowest carbon footprint solutions while not impacting our core strengths around cost, performance, quality and capacity

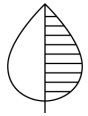
Sustainability innovation

- Focus on end users and what is a “sustainable” product by market segment.
- 3rd Party Life Cycle Assessment to verify our sustainable portfolio as one of the lowest carbon footprints in the market
- Strong R&D capabilities and network. Partnering with best-in-class 3rd parties around recyclability certification
- Successfully sharing innovation and best practices around the world
- Using our large scale to shift customers to more sustainable products and materials.

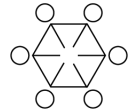
Sustainable ADvantage



Deliver innovations that advance the circular economy



Reduce our environmental impact in operations and supply chain



Make a positive social impact by enhancing the livelihood of our people and communities

Innovating Products

We innovate products that enable recyclability, extend the lifespan of materials, reduce waste and increase recycled content.

Enabling Circularity

We implement and advance technologies to enable our customers and suppliers to deliver a more sustainable circular future.

Holding ourselves to standard

We reduce our environmental footprint by decreasing our greenhouse gas emissions, increasing our water efficiency and protecting the forests from which our products are derived.

Providing Transparency

As a leader in our industry, we uphold transparency in our operations and promote safety through site/supplier audits and policies.

Supporting the community

We serve as a force for good in our communities by investing in programs that advance women's empowerment, sustainability and education.

Building an inclusive workplace

We champion equality, diversity and inclusion as well as pride ourselves on enhancing the employee experience.

What Makes Our Products Sustainable

Materials
Improve the sourcing and the use of certified materials, increasing recycled content and replacing less sustainable materials, such as PET, when applicable.

End of life
End of life product recyclability and impact on the recycling chain.

Manufacturing
Implementing best manufacturing processes available and managing our own operations and supply chains.

Measurement
Our Life Cycle Assessment will help to identify and improve the lowest carbon footprint solutions, this analysis is carried out with an external consultancy, providing visibility into the sustainability of our products.

Our definition of sustainable products

Material reduction
There must be at least a 30% reduction in PET.
Or 5% reduction in liners.

Enables reuse, or recyclability or compostability
The entire product is recyclable in a substantial majority of established recycling facilities in communities where the product is sold.

Increases recycled content
There must be 30% of the total product supplied contain recycled content.

Responsible sourcing
For paper, we classify the paper used as responsibly sourced if it has Forest Stewardship Council certification.

Manufacturing improvements

Manufacturing

Strategic focus on...

- Reducing materials used
- Enabling the recyclability of excess materials
- Increasing overall unit per hour

Reduce water usage

Reduce energy usage

Reduce greenhouse gases

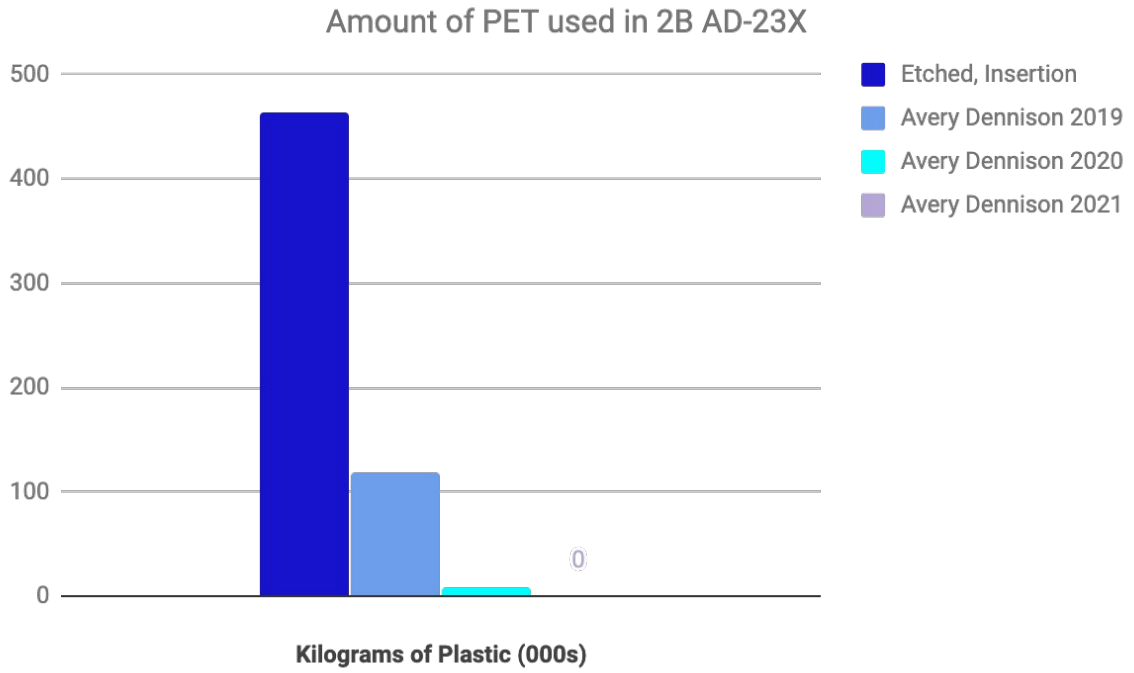
Greenprint Analysis, Avery Dennison

A roadmap to PET free

Materials

1/3

Less plastic used than other products with a roadmap to 0 PET solutions in 2021



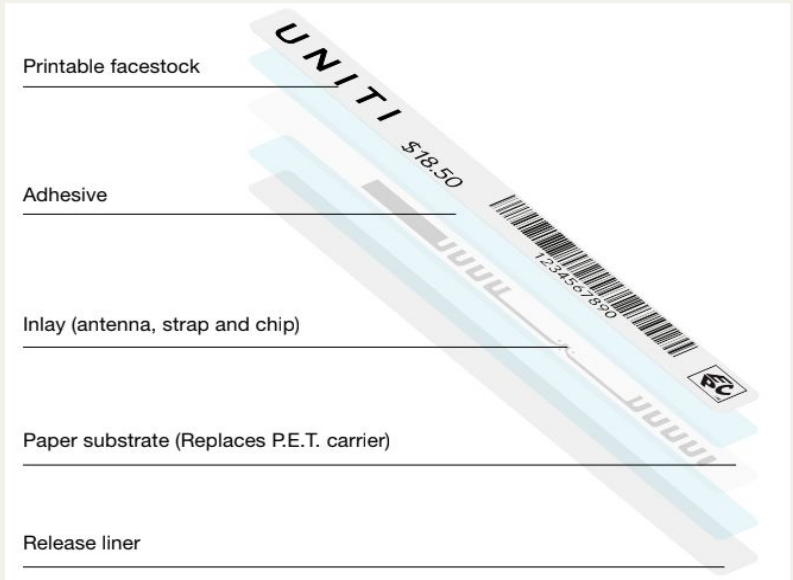
SmartFace™ Sustainable RFID Inlay Design

Materials

SmartFace™ technology, combined with 12-inch wafers (offered by our IC partners), create some of the most sustainable RFID solutions on the market through:

- **A sustainable RFID production model**
  Requires less energy and avoids the caustic chemicals with traditional etching
- **One of the most sustainable RFID solution: SmartFace™**
  Replaces the PET carrier with a paper one
- **All paper constructions can use FSC certified paper**

SmartFace™ Construction



Our antenna laser and die-cutting process **enables 100% aluminium recycling** during the manufacturing process

Up to 95% less plastic usage than standard etched inlays thanks to our proprietary strap attach process

We **source >50% FSC certified paper** for all our paper based inlays

Where are we going next?

Manufacturing Excellence

- Reduced water, energy and greenhouse gas emissions for our 2030 Goals
- Industry certifications and alignment with sustainable partners
- Roadmap for ISO 14001 certification
- Die Cut + Hybrid methods > etching

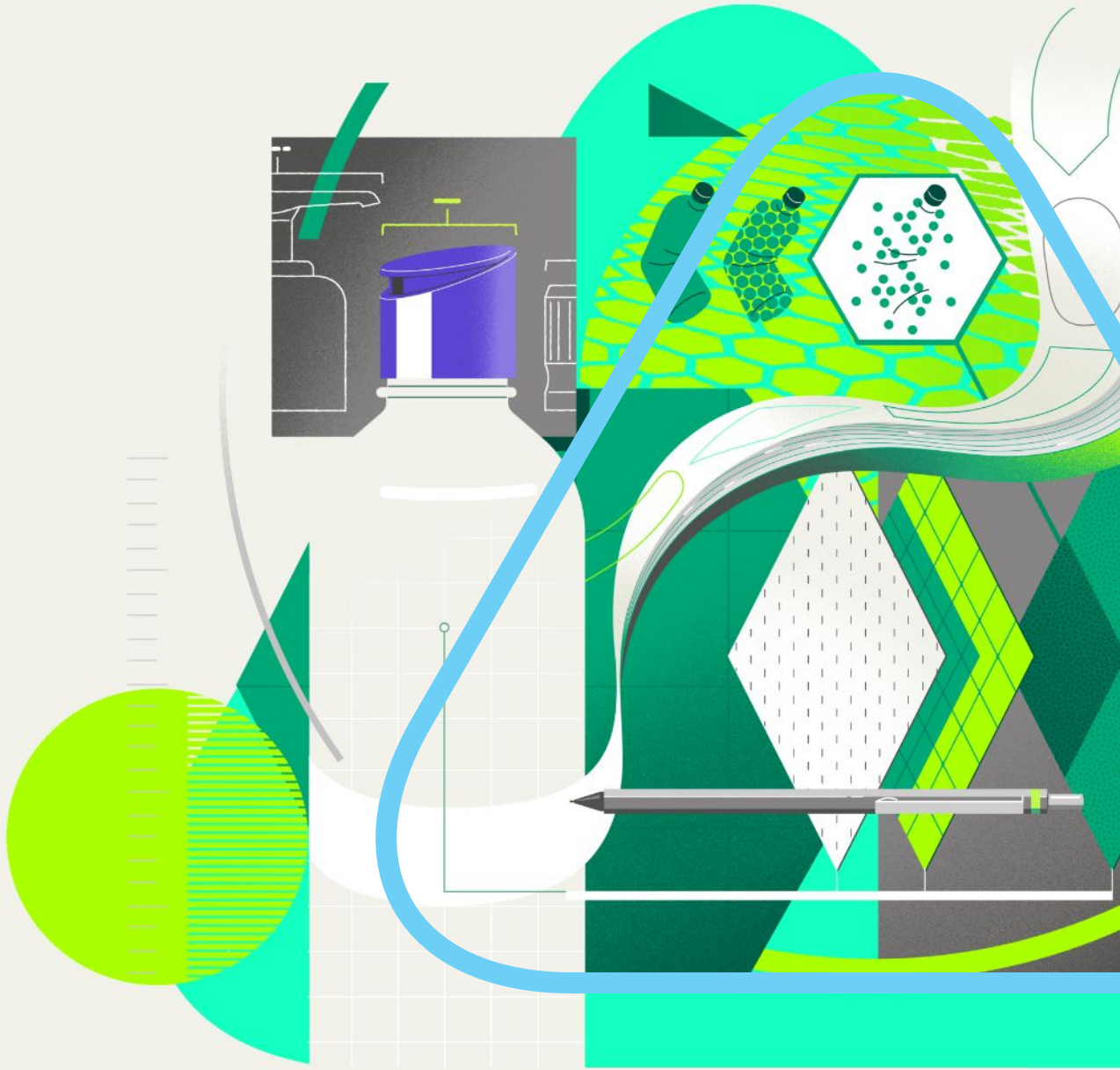
Material Selection

- Increased use of materials that enables recyclability while reducing carbon footprint.
- Roadmap for largest FSC certified supplier of UHF RFID
- Our vision is to replace PET for paper when is possible
- Increase recycle content of materials

3rd Party Validation

- The first business to receive the comprehensive and significant Auburn Research Center Quality Certification for the design and manufacturing of or RFID inlays and tags
- Gold rating by EcoVadis (SMT)
- Sustainable product standard for our inlays

Life Cycle Assessment



Our Inlays Have One of the Lowest Carbon Footprints

Through the use of materials and manufacturing methods mentioned, we've found that our inlays have up to a **90% lower carbon footprint compared to benchmarks on the market.**

For 2 billion inlays this innovation represents a substantial savings equivalent to :

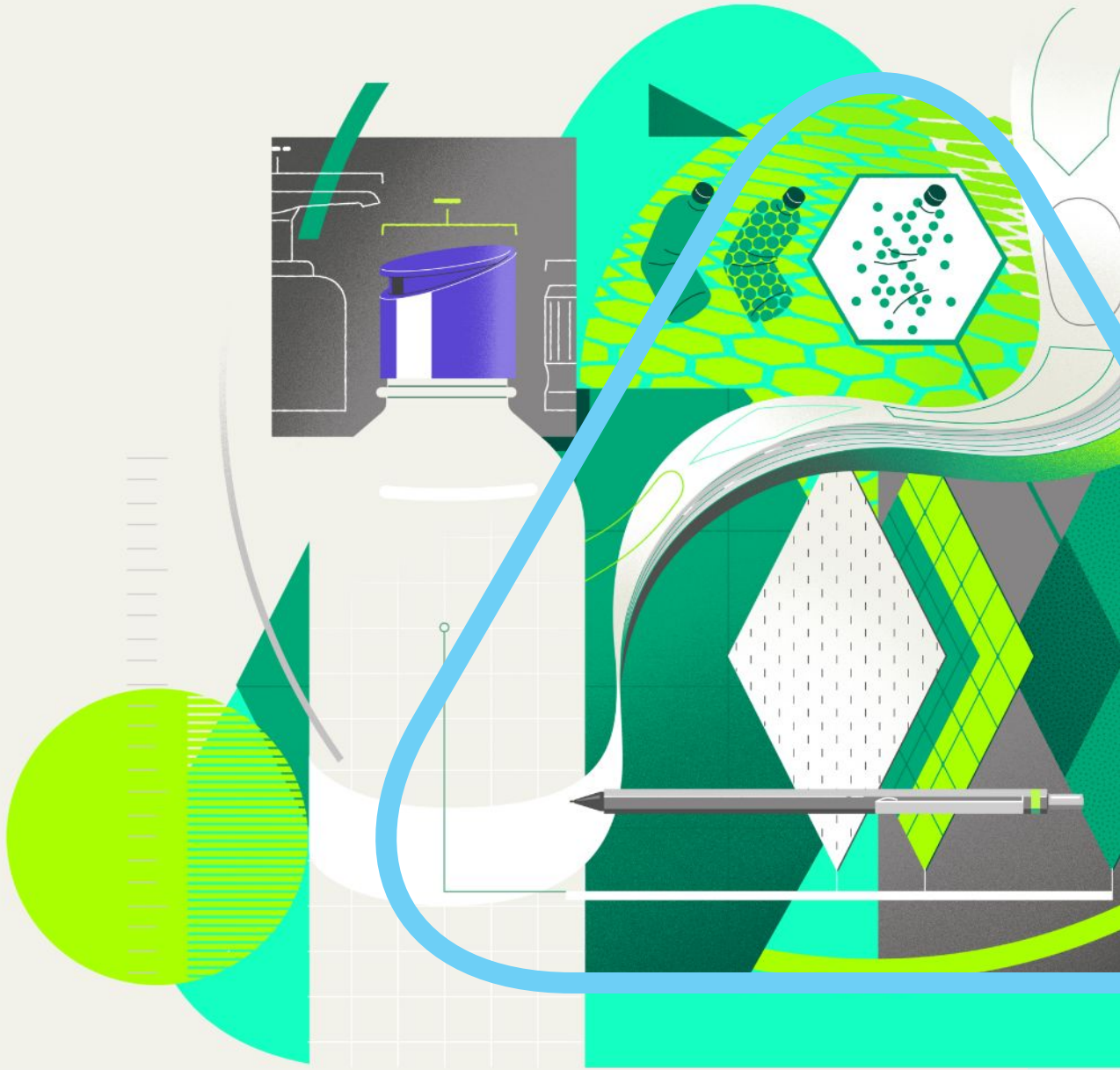
20,308 passenger cars driven for one year

CO2 emissions from **10,577,248 gallons** of gasoline consumed

A forest nearly **10x** the size of Manhattan

RFID Journal, Image Source: Temptalia , EPA.gov

Recycling Roadmap



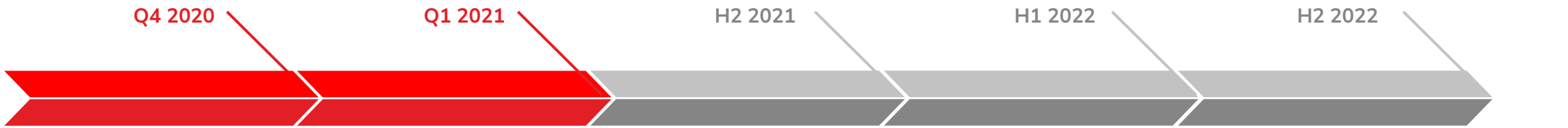
Inlay Recyclability Roadmap

We're a Materials Science Company

Materials are what we know and what we do It's from our materials, and from the contributions of the bold innovators behind them, that we're creating solutions to the sustainability challenges that matter most, along with a thriving future for our business.

Key Focus

- Short-term
  - Is the tag recyclable?
  - What happens to existing item's recyclability?
  - What happens to the different components of the inlay?
  - How does this vary by market segment?
- Long-term
  - Can we recover all components?
  - Biodegradable
  - RFID as an enabler



- Repulpability Testing PASSED
- Round One Testing at Lab

- 3rd Party Certification- NA (one design)*

- 3rd Party Certification- NA (one design)*
- 3rd Party- EU (one design)*
- 3rd Party- EU (one design)*

* Tentative Paper Recycling Stream Non-Paper Recycling Stream

Partners

SUSTAINABLE PACKAGING COALITION®

WESTERN MICHIGAN UNIVERSITY

3rd Party Validation

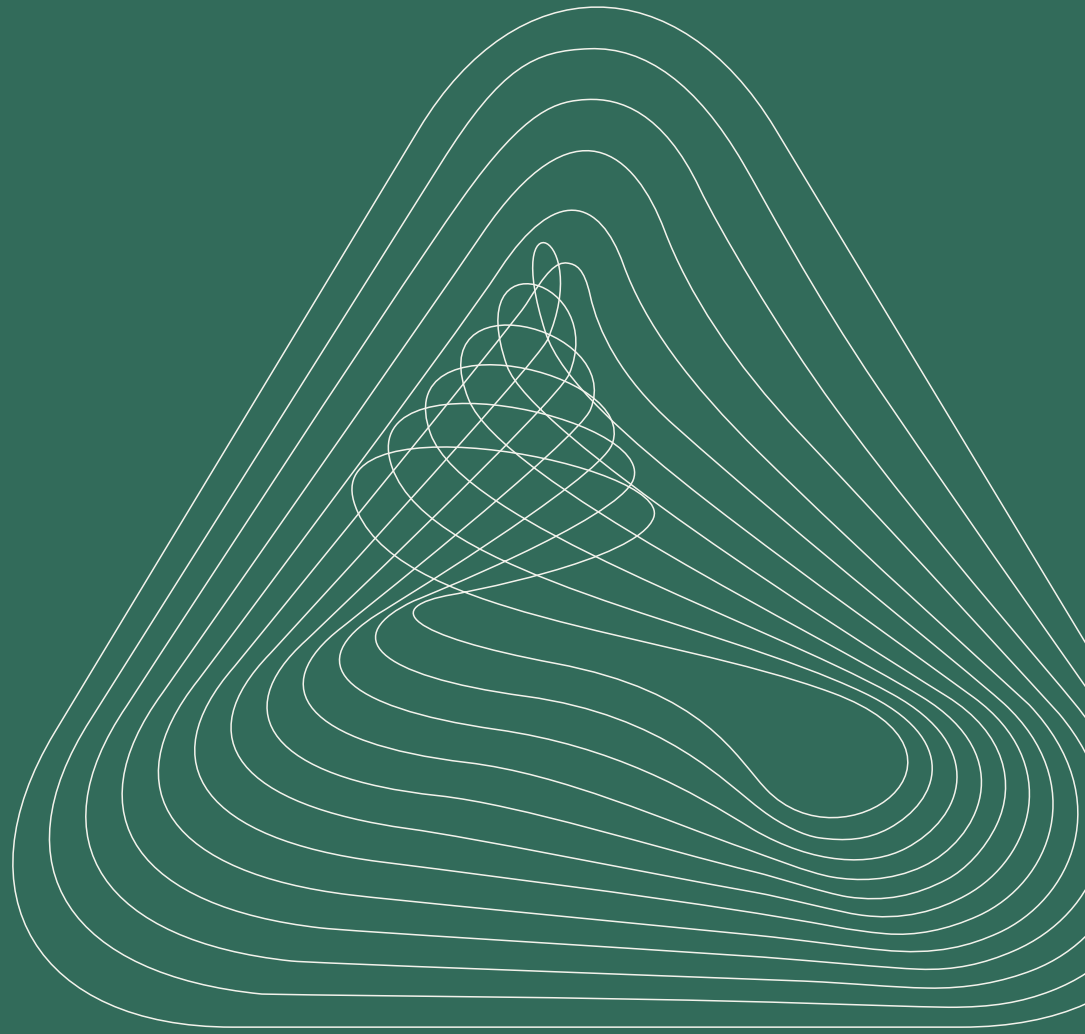
Avery Dennison only pre-qualified intelligent labels provider to receive How2Recycle® label for RFID paper hang tags

Avery Dennison Corporation announced it has become the first and only pre-qualified intelligent labels provider to receive the How2Recycle® label for RFID paper hang tags. The label has been assigned based on a number of factors that How2Recycle considers: applicable law, collection (access to recycling), sortation (MRF package flow), reprocessing (technical recyclability), end markets. This development follows many years of research and development within Avery Dennison Smartrac to develop a unique combination of materials, adhesives, and inlay construction to enable RFID labels to be recycled alongside any other residential recycling stream, meaning they can be transformed with any other paper-based materials.

Q & A

Time for networking!

Follow the link in the the chat to join us in the Zoom meeting rooms. You can close the current Ring Central meeting.



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