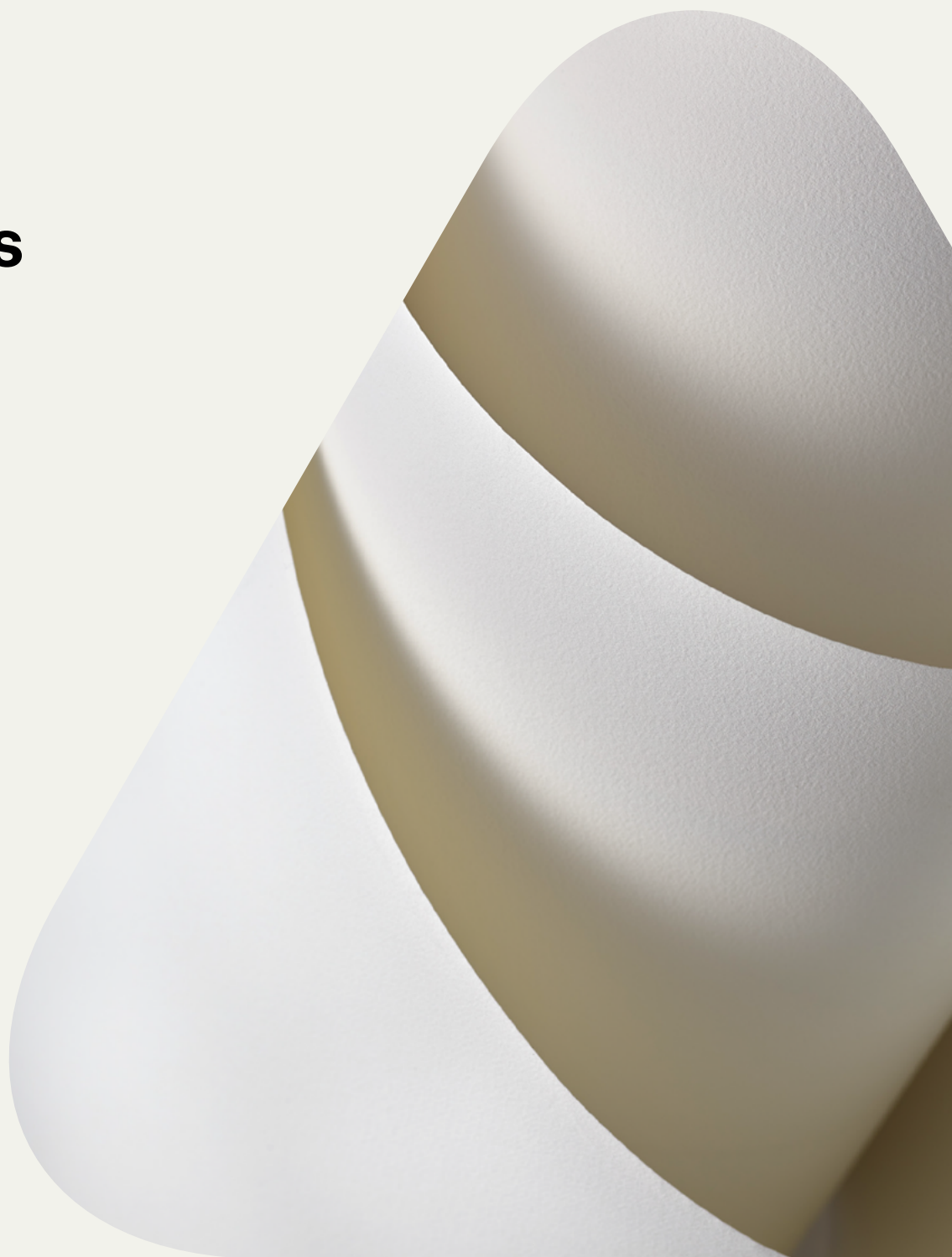


Avery Dennison
Label and Packaging Materials
Technical Guide

ASEAN
June 2024

Paper materials



We didn't invent paper, but we did invent the paper label.

The first paper label we created, more than eight decades ago, was the first self-adhesive label ever. We've been pushing the limits of paper's potential ever since, and we're not about to stop now.

We're always looking for new ways for paper and the rest of the label to work harder. For us, innovation is synonymous with sustainability, so we're especially focused on creating solutions that use fewer raw materials and contribute to the circular economy through responsible sourcing and the use of recycled content.

We created this guide to help you select the perfect material for your application. Take a look, and design your next label with confidence.



Why choose paper labels?

Brands and packaging designers have been using paper labels for eight decades. From printability to performance and sustainability profile, paper labels are often the best choice.

Avery Dennison offers the most comprehensive selection of paper materials and paper label constructions for virtually every application. Our global team of technical experts can also develop customized solutions to help you get the most out of your label.

Here are some of the many benefits offered by paper labels:

More options for embellishments

From hot-foil stamping to embossing and more, paper can take it all, giving your creativity freedom to roam.

A variety of finishes

Embellishments are just the beginning. Paper also lets you add finishing options, like varnishes or laminates, for performance or aesthetics.

More textures

Coarse. Velvety. Elegant. Rustic. Paper appeals to the fingertips as well as the eye, and one thoughtfully chosen texture can tell a whole brand story.

Sustainability

Paper comes from trees, a renewable resource, and can be easily recycled or composted. Recycled content can also easily be incorporated into paper labels with no loss in quality. A vast majority of the paper products we offer are made with certified-claim wood fiber, harvested from responsibly managed forests, and many of our papers contain recycled content.

Cost effectiveness

Paper materials deliver all the advantages of pressure-sensitive labels at a cost that fits most budgets.



Choosing the right paper

Selecting the right paper for your label depends on a mix of factors, including your application, package design, functionality needs, and more. Here's how to choose the right material in five easy steps.

1. Know your application

What is the item you're labeling? What kind of substrate (surface) will you apply the label to? And what are the conditions under which the label must perform? Our paper label materials are widely used in applications in the following industries (and more):



2. Specify your technical requirements

Paper facestocks come with a wide variety of characteristics that can ensure and enhance performance. Some of the options and variables to keep in mind:

- Weight / thickness of the base paper
- Coated or uncoated paper
- Resistance to humidity and water (splash proof)
- Resistance to oil and grease
- Resistance to ultraviolet light and heat
- Tensile/wet strength and tear resistance
- Stiffness (which determines the mandrel and dispensing performance of the label)
- Opacity (the degree to which light can pass through the material, determining its "clarity" or transparency)
- Whiteness and brightness (including OBA-free solutions)
- Gloss level, roughness, and smoothness
- Amount of recycled content (if required)
- Variable Information readability (for barcodes)
- Destructibility, tamper evident properties

3. Choose your optical properties

Your label is key to shelf appeal and to conveying brand look and feel. Its color and finish greatly influence the effect of the finished products. Options include:



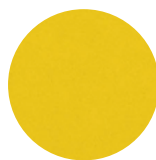
White matte



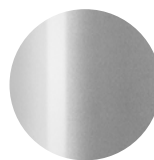
White semi-gloss



White gloss



Colored*



Metalized



Textured

*Comes in various radiant colors

4. Determine your printing process

What is the item you're labeling? What kind of substrate (surface) will you apply the label to? And what are the conditions under which the label must perform? Our paper label materials are widely used in applications in the following industries (and more):

Analog printing

- UV flexo
- Water-based flexo
- UV letterpress
- Offset / Lithography

Digital printing

- Electro photography
- Liquid toner
- Dry toner
- UV inkjet
- Water-based inkjet

Variable information

- Thermal transfer
- Direct thermal
- Laser printer

Complementary technologies / embellishments

- Cold foil
- Hot foil
- Embossing / debossing
- Screenprinting
- Spot varnish
- Security covert UV prints

5. Pick your label material

You now have the information you need to select the right material. You can view our available materials in our [Product Component Guide](#) while you can also view our service offerings in your country through our [Product Services Guide](#). If you have questions, reach out to your dedicated Avery Dennison sales representative.



Types of paper

There are various categories of paper, each with different aesthetic and performance characteristics. Here's a quick intro to the main types.



Uncoated Paper

No coating, just pure paper. These are designed to work with toner-based inks used in laser printers and copiers, liquid-based inks found in inkjet printers, and ribbon-based, thermal transfer printing. They're also often used with traditional printing methods.



Machine Coated Paper

These are papers with a semigloss finish obtained by applying a coating on the base paper. They work with the broadest range of applications, including unique label constructions on complex package shapes.



Cast Coated Paper

Coated paper with a luster or mirror-like finish which produce a professional, high-quality label.

Increasing gloss and ink hold-out →



Direct thermal paper

These are designed to display variable information (VI) printed with direct thermal printers. We offer a broad range of direct thermal papers to cater for different market needs. Linerless options are also available.



Thermal transfer paper

Designed to reliably display barcodes and variable information with high print quality. Our Thermal Transfer Paper offers a stable, durable and robust variable information printing option.



Special papers and foils

There is a wide variety of special label materials available, such as decorative labels, foils, radiants, metalized papers, and grease-proof papers.

Paper materials for common applications



E-commerce and logistics

We offer several solutions for e-commerce and logistics. These include thermal transfer and direct thermal papers perfect for variable information (VI) labeling; and our linerless solution, AD XeroLinr DT™ which use less materials and thereby reduce packaging waste. With supply chain visibility and inventory management being a need in the e-commerce and logistics industry, paper labels embedded with RFID technology to meet these needs are also available.

Another innovation of ours is “piggybacks”, label constructions built from several layers of label and adhesive. These allow the top label to be removed and applied on another surface, such as an e-commerce receipt, helping make product returns easier for consumers and warehouse operations more efficient.

[Learn more about our piggyback labels](#)

Use specialty papers where extra consumer attention is needed.



Packaging for luxury goods

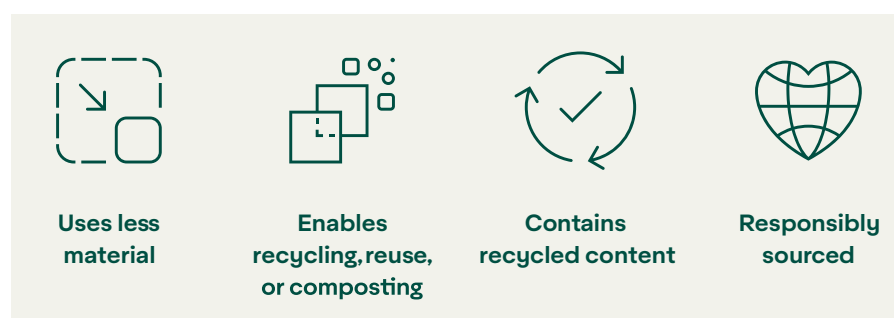
When shelf appeal really counts, you can rely on our premium paper solutions to help win consumers' attention. By offering a sensory feast of colors, textures, and coatings, our premium decorative papers help converters, designers, and brands create beautiful packaging that demands to be touched, read, and taken home, whether you're printing digitally or through conventional offset methods.

[Learn more about our premium paper labels](#)

Paper materials that advance circularity

Paper is made from wood fiber, a renewable and recyclable resource. While large amounts of paper are recycled, most recycled fiber is used to make cardboard and there's a shortage of recycling infrastructure and capacity to produce paper suited for labels. Fortunately, this is changing. Face materials and liners are increasingly being made with recycled content, including many in our portfolio.

Our Sustainable ADvantage range makes it easy for brand owners to reduce the environmental impact of packaging without sacrificing performance. For each paper in the range, one or more of the following applies:



Papers that use less material

We offer a variety of paper label components that use less material. For example, our new MC Elite FSC and Vellum Elite FSC papers offer the same performance as conventional products in a thinner package. This means they require less materials, resources, waste, transport, and storage space, resulting in reduced environmental impact as well as increased operational efficiency and productivity.

Meanwhile, AD XeroLInr DT™ is our new linerless direct thermal solution. It therefore uses less resources and less transportation, and has a lower carbon footprint as a result. Thanks to its linerless construction, AD XeroLInr DT makes it possible to fit up to 60% more labels on each roll. This means fewer roll changes, greater productivity, and improved warehouse utilization.

[Learn more about AD XeroLInr DT™](#)



Papers with recycled content

rMC

rMC is FSC-certified, containing 50% recycled content. It offers excellent print quality and an appealing, sustainable semi-gloss appearance. Because it's recycled, rMC requires less resources to manufacture, representing a solid step towards a circular economy.

rDT

rDT is a direct thermal, uncoated, BPA-free paper containing 15% recycled content, engineered for non-food retail applications. rDT offers the same appearance, converting performance, direct thermal printability, and barcode readability as our standard non-recycled direct thermal paper.

Our Sustainable Advantage range makes it easy for brand owners to reduce the environmental impact of packaging without sacrificing performance.

Sustainable
Advantage

[Click here](#) to learn more about our Sustainable ADvantage range.



Responsibly sourced papers

We're aiming to offer 100% certified-claim paper by 2025, of which at least 95% are already Forest Stewardship Council® (FSC)-certified. We offer hundreds of paper materials certified by FSC, so you can be confident that they come from pulp fiber harvested from responsibly managed forests.

Beyond facestocks: Adhesives and liners



Choosing a facestock is just the beginning of label design. The right adhesive and liner add invaluable functionality and performance.

Innovators in adhesives

We're the only company in the pressure-sensitive label industry that engineers and produces its own adhesives, and we've done it for almost 90 years. With 400 adhesive scientists working in seven R&D centers worldwide, we solve customer challenges in real time and offer high performing, innovative, customized adhesive solutions to every corner of the globe.

Adhesives for paper labels range from extra-permanent to ultra-removable and from general purpose to custom-engineered and application-specific.

Emulsion Acrylic — S1002, S1005, S1010, S2090, S2420

Emulsion adhesives provide clean converting and excellent bonding to various substrates across a wide temperature range. Our FDA-approved emulsion adhesives are ideal for grocery, beverage, and personal care applications.

Rubber Hotmelt — S2010N, S2025N, S2050N

Rubber hotmelt adhesives offer high initial tack, long-term adhesion on various surfaces, including corrugated boxes for logistics and e-commerce. Our adhesives contain up to 30% renewable content with low-ooze for clean converting. They are FDA approved for indirect food contact, ideal for food and grocery applications.

Removable — R450, R423

Removable adhesives are designed for either short-term repositionability or long-term removability. Promoting reuse, or recycling of the package, removables are commonly used for retail point-of-sale, promotions, logistics sorting, and shelf tags.

Biomass Emulsion Adhesive

Designed for converters or brands that are seeking a more sustainable alternative, our biomass emulsion adhesive contains 30% renewable material and is APEO-free, making it an ideal choice for those who are committed to promoting material circularity. Biomass emulsion adhesive is available on demand.



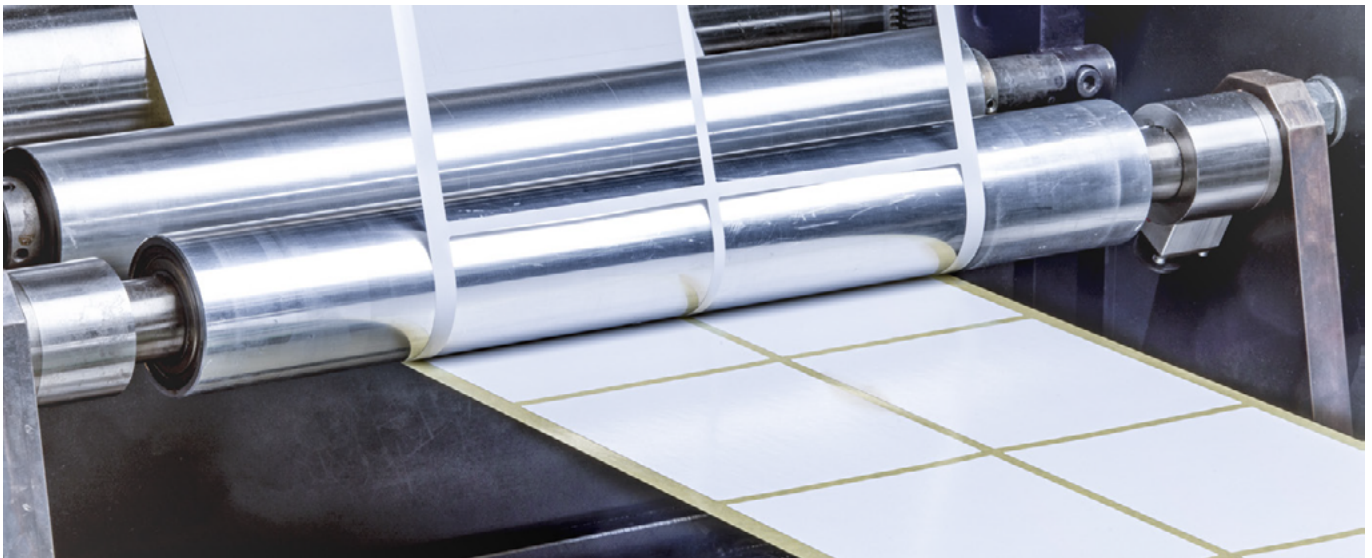
Liners that work for you

We regularly create new kinds of liners to help converters and end users label more efficiently, cost-effectively, and sustainably. Innovations include our PET liner with paper face, liners made with recycled content, and custom designs that optimize performance for customers' specific needs. An increasing number of products have moved to liners with recycled content. For example, our rPET23 liner contains 30% recycled content, while our rCCK liner is made with 5% recycled kraft.

AD Circular - Liner and matrix recycling program

Our AD Circular program makes liner and matrix recycling easier. Simply register for the program and get ready for a recycler to begin the waste collection. We provide regularly updated analytics on the amount of liner material you've recycled, the amount of CO2 emissions avoided as a result, and more. AD Circular processes liners regardless of who made them or where they were purchased.

[Learn more about AD Circular.](#)



Services to suit you

We've pioneered several flexible ordering programs that let you order material in the way that best fits your business, so you can maximize efficiency, productivity, and profitability.

EXACT™

Our EXACT program features more than 100 specifications for precise roll widths and lengths that match your slit patterns, enabling you to eliminate end-wasted roll remainders and offcuts.

Ready Width™

Low-volume products at standard widths and lengths currently not included in the EXACT program are available through our Ready Width program.

Mix & Match™

Choose from a set range of unconventional label constructions created to address your unique application and performance needs.

Engineered Solutions

Challenging problems require premium solutions, and our tailored solutions allow you to differentiate your products with custom-made labels that defy the norm.

Rapid Rolls

Most of our facestocks are available unlaminated, without adhesive, from our Rapid-Roll® Portfolio.





Who we are

As the pioneer in the pressure-sensitive industry, we bring one-of-a-kind capabilities to sustainable labeling. 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 performs.

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.

Work with us

You're the expert in your business; we're the expert in labeling. Contact your local Avery Dennison representative today or visit label.averydennison.com to find out how we can meet and exceed your needs.

For more information on technical performance and printing recommendations, please refer to the respective datasheets. Please note that the Avery Dennison product range and service offering can be subject to changes. For an accurate overview, please check our website label.averydennison.eu or contact your local Avery Dennison sales representative.

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