Film Materials

Labels + Packaging
Technical Guide
Europe
2020

AVERY DENNISON

Pioneers in film

No other film performs like Avery Dennison film. Across the broadest range of applications, including food, drink, home, and personal care, our filmic labels set the standard for conversion efficiency, adhesion, and brand aesthetics.

From printing to converting and application, we continue to innovate and inspire as the industry's leading experts. Our filmic facestocks, groundbreaking adhesive technologies and sustainable innovations keep us one step ahead.

Why use filmic labels?

There are many reasons to choose filmic labels. When durability and aesthetics are of the highest importance, filmic labels provide the functionality required for home care, personal care, food, and beverage applications.

Clear no-label look
Filmic labels offer excellent shelf-appeal with clear rigid films.

Flexible and conformable
Filmic labels adhere perfectly to any shaped container, including squeezable bottles.

Enables multi-layer construction
Filmic labels can be used to add leaflets and booklets to extend the printed content of your label application.

Water and moisture resistant
Ideal for home care, personal care, food, and beverage applications.

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Past, present and future

Material science is at our core. The world didn't have self-adhesive labels until we invented them. And we've been advancing quality and innovation in material science ever since.

Rob Groen in't Wout
Marketing Manager, Films

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Sixty-plus years after their invention, film labels are so ubiquitous that it's easy to take them for granted. Yet their remarkable history is a story of continual innovation—one that has mirrored evolutions in consumer preferences, plastics, and the packaging industry itself. It's a story that is part materials science and part process engineering. And it's a story made possible not only by flashes of disruptive innovation, but also by ongoing collaboration among virtually all the players in global packaging, from raw materials providers, to converters, to end users.

Today, innovations in film labels are most often refinements driven by the same imperatives that gave rise to film in the first place— durability and conformability, conversion speed and efficiency, and brand aesthetics—punctuated by the occasional, industry-shifting breakthrough. At the same time, the urgent need for sustainability, and consumers' desire for corporate transparency, are increasingly influential in how film labels are being made and used.

At Avery Dennison, we're proud to be a pioneer of film's past as well as its future.

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A global leader in materials science for 85 years:

1935: the first Avery Dennison products were developed by our founder Stan Avery, when he created self-adhesive labels.

1970s: we introduced the first filmic labels in Europe.

1998: we launched our 'no-label' look with clear PP film on PET liners.

2000s: we started launching thinner and thinner facestocks, like our proprietary technology Global Co-Ex and Global MDO films.

2009: we introduced our patented Topcoat TC7007 to enhance the printability of our films.

2010s: we launched products that advance the circularity of packaging including CleanFlake™, monomaterials, rPE, and rPP.

Today: from our first film plant in Europe in 1976 to our current and future focus on sustainability, innovation, and intelligent labels, Stan Avery's bright idea continues to stick.

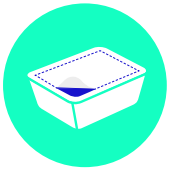
Choosing the right film

Just five simple steps are needed to select the right product for your needs.

1 Decide on the application

- Automotive
- Home care
- Beer & Beverage
- Pharmaceutical
- Beauty
- Reclosures
- Electronics & Industrials
- Wine & Spirits
- Food

2 Decide how flexible the label needs to be

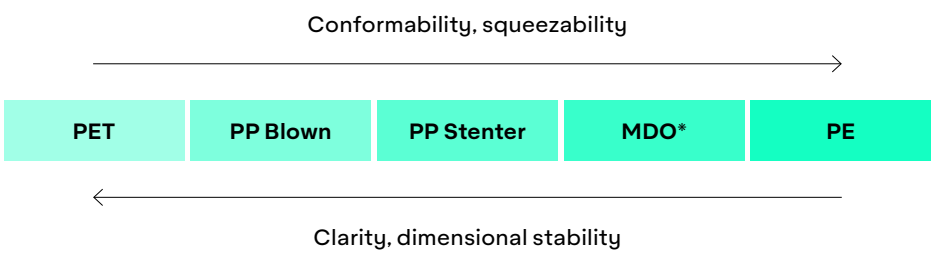


Rigid (PET)
- Highly rigid and ultra clear, used predominantly in specialized applications

Rigid (PP)
- For bottles with flat or simple curves, high clarity and (cavitated) white finishes

Semi-conformable (MDO*)
- For bottles with slight curvature and squeezeability
- Thinner calipers compared to PE

Conformable (PE)
- For the broadest application types involving unique label construction on complex label and packaging shapes



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*Machine direction oriented

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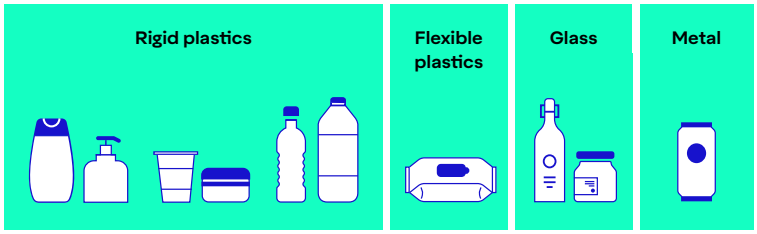
3 Specify the container material



Container material	HDPE	HDPE, PP, PET	PET, PP	PP/PE	Glass	Cans
Container characteristic	Conformable	Semi-conf.	Rigid	Flexible	Rigid	Rigid
Standard product	PE100	GCX, Global MDO	PP50, PP60	PP195	PP50, PP60	PP20, PP25
	PE85		PP40	HDPE200	PP40	PP30
			PET			PET
Sustainable solutions:						
Reduce materials						Thin films
Enabling recycling and re-usage		CleanFlake™ Flex	CleanFlake™	Mono-material	GRX*/ Wash-off	
Recycled content	rPE80	rPE80	rPP		rPP	

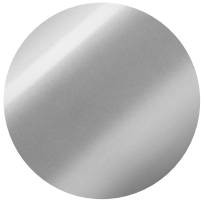
*Single use glass recycling solution

4 Choose your colour & finish

Clear Gloss

Solid White Gloss

Cavitated White Gloss
(only applicable for PP films)



Silver Gloss

Clear Matt

Solid White Matt

5 The final step: pick the right product

You now have all of the information needed to select the ideal film. Go straight to our product portfolio on pages 9-11.

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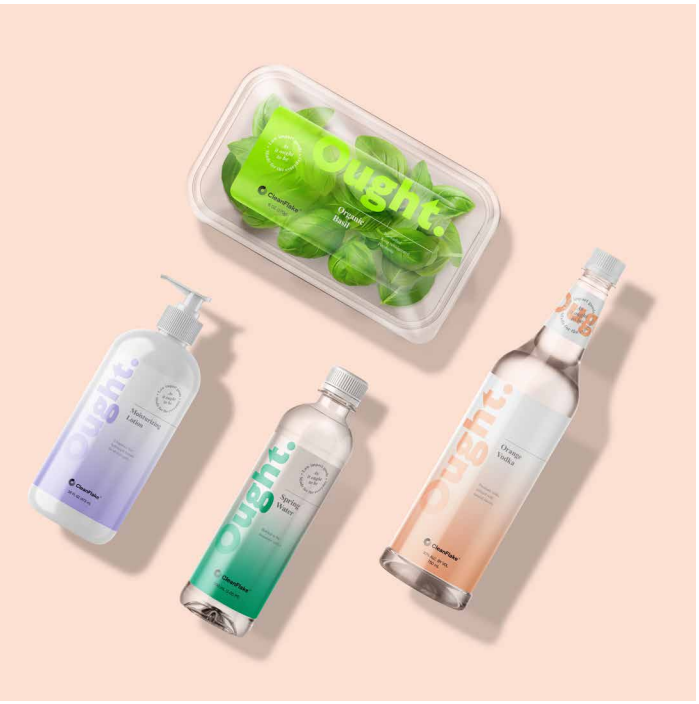
Sustainability & films

As the packaging industry increases their focus on sustainability, and as regulations point toward a more circular economy, we're constantly in search of sustainable alternatives to conventional approaches. At Avery Dennison, we're not just talking about what the future looks like, we are helping to shape it.

Helping brand owners reach sustainability goals
The future of labels is sustainable. Avery Dennison ensures you and your customers make sound decisions that meet environmentally friendly standards that go beyond films. We're committed to creating labels that improve recyclability. Whether it's with thinner films, films that enable recycling such as CleanFlake™ technology, films with recycled content like rPE and rPP, or monomaterials for flexible packaging.



Enabling PET recycling with CleanFlake™ technology
Many brand owners are seeking PET packaging that enables conventional recycling. Through our innovative label construction, CleanFlake™ technology provides a simple route to recycling PET packaging by enabling a clean removal during the washing process. The CleanFlake™ label will separate cleanly during the washing process and has excellent sink-float performance, leaving clean PET flakes.

In addition, we offer a wide product range of filmic labels with this technology including CleanFlake™ Flex, the first product specially designed for freshly blown PET bottles. The innovative label construction and the adhesive properties of our CleanFlake™ products helps to increase the availability of food-grade rPET without compromising shelf-appeal.

Monomaterial films for reclosures
These label constructions are specifically suited for monomaterial flexible packaging. With thick PP and PE that meet the monomaterial structure requirement, our films for reclosure functionality complement the recyclability of flexible packaging.

Designed specifically for wet wipes packaging, monomaterial films give the opportunity to replace the hard plastic lids traditionally used, reducing the amount of plastic used in packaging and delivering the reclosure functionality required.

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Recycled content facestock
With rPE and rPP solutions, you can reduce reliance on fossil-fuel based film and lay the foundation for a closed-loop economy by preventing plastics from going to waste.

rPE
rPE is the industry's first PE facestock with recycled content. rPE is made with 30% recycled PE resin from post-consumer waste and signals authenticity, since it has a slightly less uniform appearance. rPE facestocks print well with both conventional and digital printing techniques, and it's available with our proven TC7007 topcoat in clear and white.

rPP
- Mechanically recycled:
  rPP contains more than 20% recycled PP resin from post-industrial recycling, reducing waste from the packaging industry. rPP shows good printing quality and has an appearance similar to a standard cavitated film.

- Chemically recycled:
  rPP is made from raw material that contains up to 100% post-consumer waste, and is ISCC certified. Its properties are identical with standard film and it is food approved. In addition, chemical recycling enables the processing of post-consumer PP waste into food-approved film. It is available as clear, white, and cavitated film.

> The future of labels is sustainable. Avery Dennison ensures you and your customers make sound decisions that meet environmentally friendly standards that go beyond films.

Bio-based facestock materials
Reduce reliance on fossil-fuel based materials by using bio-based films made from renewable sources.

Bio-based PE
Bio-based PE filmic facestock is made from sugar cane ethanol. The resin used to produce the facestock is Bonsucro® certified, and the material converts in a similar way to conventional PE. It is available in white and clear and it can easily be exchanged for fossil-based PE. Additionally, plant-based PE film can be recycled in the same way as standard PE.

Bio-based PP
Bio-based PP labels are made from renewable, non-fossil based sources such as plant-based oils. Bio-based PP labels are made with raw materials that contain up to 100% bio-based ISCC certified content. The material has the same characteristics as conventional PP and is available as clear, white, and cavitated film.

Functionality & films

TC7007 topcoat
Achieve a sophisticated look through outstanding ink adhesion with our food-approved topcoat TC7007, the industry benchmark.

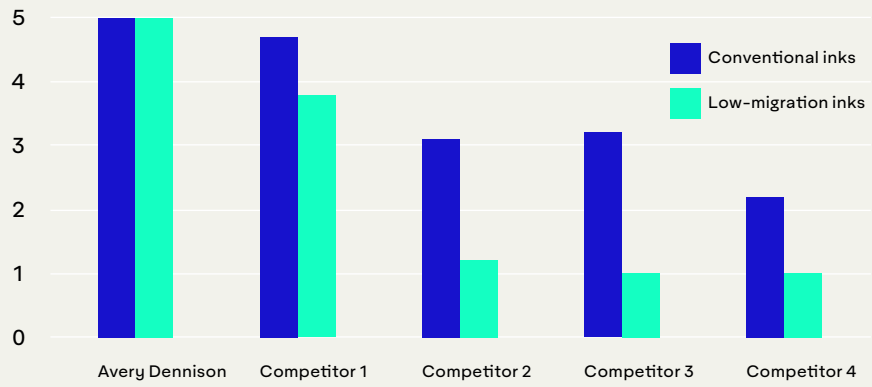
Our technology enables an extraordinarily strong bond between the film and UV-curable ink which allows for thicker ink layers, greater scratch resistance, and faster converting speeds up to four times faster than alternative topcoats. Improved print quality can be realized with both conventional and digital printing techniques, even with low-migration inks.

Printability TC7007

UV Flexo	●●●	UV Letterpress	●●●
UV Screen	●●●	UV Inkjet	●●●
Water-based Flexo	●●○	Solvent Gravure	●●○
Dry Toner	●●●		

Key: ●○○ Fair ●●○ Good ●●● Excellent

> “For premium matt looks and soft touch packages, TC7007 Matt topcoat delivers a matt look with the same high level ink anchorage and print speed.”



Scale 0.0-5.0, 0.0=0% ink anchorage, 5.0=100% ink anchorage, Speed: 80 meters/min UV flexo printing

Direct Thermal films
Direct Thermal films are designed to maximize shelf appeal for food packaging such as fresh fruit and prepackaged meat, among others. These labels are not affected by moisture, grease and fat like paper, and are optimized for direct thermal printing.

Thermal PP white offers a great alternative for Thermal papers where Thermal PP clear grades offer transparency for better visibility of the product. Thanks to the thin overlaminate film in our portfolio, any label can be made direct thermal printable.

Services to suit you

Avery Dennison introduced many of the services that have now become industry standard. It's now easier than ever to increase productivity, improve profitability and sustainability and grow your business with custom support.

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.

One Roll Unique Service (ORUS)
Create prototypes and try new Avery Dennison product combinations with reduced up-front costs and less waste with ORUS. ORUS makes business development easier and less expensive by enabling you to order a single roll of any of our one-meter products.

Mix & Match™ Portfolio
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 selective service allows you to differentiate your products with custom-made labels that defy the norm.

Technical Excellence team
The Technical Excellence team offers some of the industry's most experienced professionals, all ready to help walk you through developing a unique packaging solution in person. They work directly with you to understand your individual needs and product requirements, then help you differentiate your company and give your clients cutting-edge solutions. Contact your sales representative for more information.

Films portfolio overview

Rigid film – PET

	Code	Facestock	Adhesive	Liner	Sustainable category
Clear	AS440	PET50 Top Clear	S692N	BG40WH FSC	-
Rigid Reclosure Clear	BT758	PET180 COR Clear	R1490M	PET30HR	Reduce*
	BT982	PET180 COR Clear	UVR145	PET30HR	Reduce*

Rigid Film – PP

	Code	Facestock	Adhesive	Liner	Sustainable category
Clear	BS111	PP40 Top Clear	S692N	BG40WH FSC	Reduce
	AP480	PP40 Top Clear	S7000	rPET23	Reduce
	AT476	PP50 Top Clear	S7000	BG40WH FSC	Reduce
	AG659	PP50 Top Clear	S2045N	BG40WH FSC	Reduce
	AR107	PP50 Top Clear	S7000	rPET23	Reduce
	AL539	PP60 Top Clear	S692N	BG40WH FSC	-
	AX150	PP60 Top Clear	S4000N	rPET30	-
	BJ311	PP60 Matt Top Clear	S692N	BG40WH FSC	-
White	AT740	PP50 Top White	S7000	BG40WH FSC	Reduce
	AS539	PP50 Top White	S7000	rPET23	Reduce
	AL597	PP60 Top White	S692N	BG40WH FSC	-
	BJ310	PP60 Matt Top White	S692N	BG40WH FSC	-
	AY263	PP Top White	S4000N	rPET30	-
	AN072	PP NG Top White	S2045N	BG40WH FSC	-
White Cavitated	AQ849	PP40 Cavit Top White	S692N	BG40WH FSC	Reduce
	AR823	PP40 Cavit Top White	S7000	rPET23	Reduce
	BM461	PP60 Cavit Top White	S692N	BG40WH FSC	-
	BS198	PP60 Cavit Top White	S692N	PET23	-
	BV331	rPP60 Cavit Top White	S692N	BG40WH FSC	Recycled content
Metalized	BP805	PP50 Top Silver	S692N	rPET30	-
	AU180	PP50 Top Silver	S7000	rPET23	-
	BJ262	PP50 Top Silver	S692N	BG40WH FSC	-
CleanFlake Clear	BF557	CleanFlake™ Clear	SR3011	rPET23	Enables recycling
	BN925	CleanFlake™ Flex Clear	SR3011	rPET23	Enables recycling
	BT472	CleanFlake™ Clear	SR3011	BG40WH FSC	Enables recycling
CleanFlake White	BF558	CleanFlake™ White	SR3011	rPET23	Enables recycling
	BR237	CleanFlake™ Flex White	SR3011	rPET23	Enables recycling
	BN440	CleanFlake™ White	SR3011	BG40WH FSC	Enables recycling

* from plastic lid to rigid PET

Continued on next page →

	Code	Facestock	Adhesive	Liner	Sustainable category
Thermal Clear	AX158	Thermal PP25 Matt Clear	S692N	BG40WH	-
	BR524	Thermal PP70 Top Clear	C2040	BG40WH	-
Thermal White	AF708	Thermal PP75 Top White	S2045N	BG40BR	-
	AC628	Thermal PP100 Top White	S2045N	BG40BR	-
Reclosure Clear	AO633	PP Light Top Clear	R1490M	BG40WH FSC	-
	AV955	PP Light Top Clear	R1490M	PET23	-
	AF991	PP Top Clear	UVR145	BG40WH	-
	AQ687	PP90 Top Clear	R1490M	BG40WH FSC	-
	BR584	PP50 Top Clear OXYB PF	R5052	BG40WH FSC	Enables recycling (PVDC-free)
	BT981	PP195 Top Clear	MR980R	PET30HR	Enables recycling (monomaterial)
	BT984	PP195 Top Clear	UVR145	PET30HR	Enables recycling (monomaterial)
Reclosure White	AQ959	PP Light Top White	R1490M	BG40WH FSC	-
	AG748	PP Top White	UVR145	BG40WH FSC	-
	AQ961	PP90 Top White	R1490M	BG40WH FSC	-
Removable Clear	AX451	PP Top Clear	C3	BG40WH FSC	-
	BD996	PP Top Clear	C3NF	BG40WH FSC	-
	AU472	PP Top Clear	R5000N	BG40WH FSC	-
Removable White	AX452	PP Top White	C3	BG40WH FSC	-
	BD997	PP Top White	C3NF	BG40WH FSC	-
	AE165	PP Top White	R5000N	BG40WH FSC	-

Semi-Conformable Films

	Code	Facestock	Adhesive	Liner	Sustainable category
Clear	AM515	Global MDO Clear	S7000	rPET23	Reduce
	AO376	Global MDO Top Clear	S7000	rPET23	Reduce
	AU005	Global MDO Top Clear	S7000	BG40WH FSC	Reduce
	AI757	Global CoEx Clear	S692N	BG40WH FSC	Reduce
White	AM932	Global MDO White	S7000	rPET23	Reduce
	AO377	Global MDO Top White	S7000	rPET23	Reduce
	AU006	Global MDO Top White	S7000	BG40WH FSC	Reduce
	AI904	Global CoEx White	S692N	BG40WH FSC	Reduce

Conformable Films

	Code	Facestock	Adhesive	Liner	Sustainable category
Clear	AF183	PE85 Clear	S692N	BG40WH FSC	-
	AF187	PE85 Top Clear	S692N	BG40WH FSC	-
	BS165	rPE80 Top Clear	S692N	BG40WH FSC	Recycled content
	AD915	PE85 Top Clear	S4700	BG40WH FSC	-
	AI121	PE85 Clear	S692N	rPET23	-
	BE635	PE85 Matt Top Clear	S692N	BG40WH FSC	-
	BD380	PE85 Biobased Clear	S692N	BG40WH FSC	Responsibly sourced
	AG744	PE100 Top Clear	S692N	BG40WH FSC	-
White	AF185	PE85 White	S692N	BG40WH FSC	-
	AF186	PE85 Top White	S692N	BG40WH FSC	-
	BS166	rPE80 Top White	S692N	BG40WH FSC	Recycled content
	AH426	PE85 Top White	S4700	BG40WH FSC	-
	AI122	PE85 White	S692N	rPET23	-
	BF341	PE85 Matt Top White	S692N	BG40WH FSC	-
	BC449	PE85 Biobased White	S692N	BG40WH FSC	Responsibly sourced
	AG745	PE100 Top White	S692N	BG40WH FSC	-
	AA869	PE150 White	S692N	BG50WH FSC	-
Metalized	BN652	PE85 Top Gloss Silver	S692N	BG40WH FSC	-
Removable Clear	BV037	rPE80 Clear	C3NF	HF140	Recycled content
	BV018	rPE80 Clear	R5000N	BG40WH FSC	Recycled content
Removable White	BU807	rPE80 White	R5000N	BG40WH FSC	Recycled content
Reclosure Clear	BU332	PE150 Clear	R1490M	BG40WH	Enables recycling (monomaterial)
	BU893	PE150 Clear	R1490M	PET30MR	Enables recycling (monomaterial)

Let's imagine the possibilities together

All great solutions begin with a conversation. We're here to talk whenever you're ready. Reach us at label.averydennison.com.

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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