

Wipe up the competition.

Discover the value of polyethylene-based wipes.

Want to hear a secret? Using polyethylene (PE) as the substrate for nonwoven wipes can offer tremendous opportunities for:

- Exceptional performance and processability
- Enhanced sustainability
- Simplified sourcing

Specifically, **ASPUN™ AT Advanced Technology Fiber Resins** are changing the game with excellent liquid and oil absorption, premium touch and feel, actives stability and good durability. What's more, this mono-material breakthrough supports sustainability efforts and can even help reduce your carbon footprint.

A trusted solution for nonwovens

For decades, our PE-based ASPUN™ Fiber Resins have delivered outstanding performance in a wide range of nonwoven hygiene applications that include:

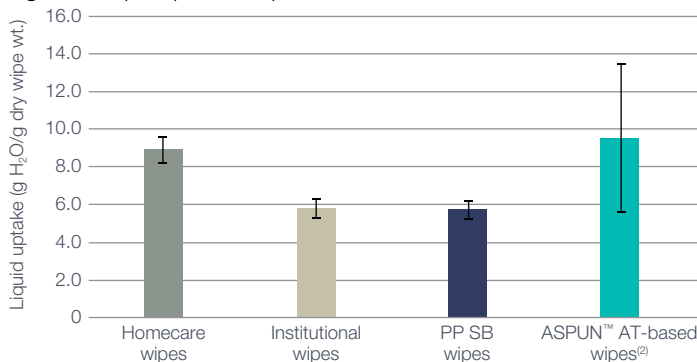
- Monocomponent spunbonds
- Bicomponent staple fibers
- Bicomponent spunbonds
- Meltblown fabrics
- Bicomponent binder fibers
- Spunblown fabrics

Now, ASPUN™ AT Resins are taking another step ahead for spunblown wipes.

Exceptional performance and processability

Excellent liquid and oil absorption – A recent study (Figure 1) shows that wipes made with ASPUN™ AT Resins offer comparable or better liquid uptake than commercial homecare and institutional wipes – and better uptake compared to PP wipes.

Figure 1: Liquid uptake comparison⁽¹⁾



⁽¹⁾ Typical values, not to be construed as specifications. Users should confirm results by their own tests.
⁽²⁾ 40 gsm (grams per square meter) spunbond substrates with hydrophilic treatment.

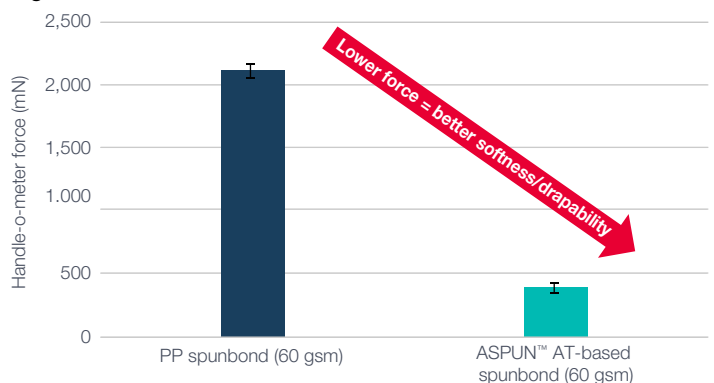


This points toward using less liquid for the same basis weight fabric, downgauging to smaller basis weight fabric for the same amount of liquid or adding more wipe sheets per package. Both downgauging and package weight reduction can offer sustainability advantages that help reduce carbon footprint.

Stability with active ingredients – The inert nature of PE supports compatibility with sporicidal hydrogen peroxide and other active ingredients. This creates the potential for extended shelf life, unlike substrates made of natural fibers.

Premium touch and feel – Figure 2 clearly demonstrates the exceptional softness and drapability that help differentiate nonwovens made with ASPUN™ Resins from those made with PP or other materials. For wipes, this translates to enhanced user experience, especially when used on sensitive surfaces or skin.

Figure 2: Handle-o-meter evaluation⁽¹⁾



Good durability – Figure 3 compares PE-based wipes with the market average performance of commercial baby, personal, homecare and institutional wipes. As you can see, the wipes featuring ASPUN™ AT Resins provided comparable or better tensile strength, while generating significantly less fuzz/lint – which correlates directly with increased abrasion resistance.

Good dirt pick-up – Wipes made with ASPUN™ AT Resins also offer good dirt pick-up capabilities.

Potential for greater production efficiency – The typically higher production rates of spunblown processes create the potential for increased productivity and cost efficiencies compared to meltblown PP fabrics.

Enhanced sustainability

Mono-material PE construction – Wipes produced with ASPUN™ AT Resins support easier, more efficient recycling operations. These benefits can be extended even further by using PE for wipes packaging (see Table 4 below).

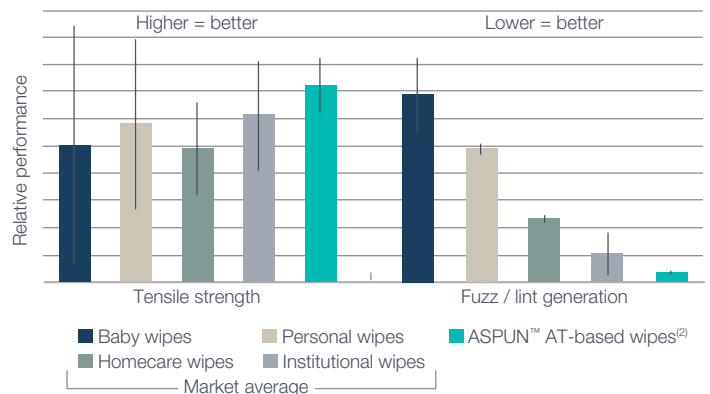
We're also working closely with industry experts and other development partners on advanced recycling initiatives – including PCR (post consumer recycled) and PIR (post industrial recycled) content options. Development efforts are also continuing on bio-based PE from renewable resources such as tall oil.

Shorter, less complex supply chains – An all-PE substrate eliminates the need for materials such as rayon, lyocell and pulp. In addition to helping conserve resources, this can potentially increase operational efficiency and reduce overall costs.

Less energy use – Elimination of the hydroentanglement process helps reduce energy requirements, creating opportunities to reduce the carbon footprint.⁽³⁾

Potential raw material/weight reduction – As previously noted, the excellent absorbency of spunblown ASPUN™ AT Resins creates opportunities to decrease the amount

Figure 3: Durability comparison⁽¹⁾



⁽¹⁾ Typical values, not to be construed as specifications. Users should confirm results by their own tests.
⁽²⁾ 40 gsm (grams per square meter) spunbond substrates with hydrophilic treatment.

of polymer or liquid formulation used, which can reduce package weight. In turn, this can help reduce transportation costs and CO₂ emissions.

Potential for carbon footprint reduction – Together, these benefits can contribute to a lower carbon footprint, enhancing sustainability efforts moving forward.

A simplified sourcing option

In addition to offering the groundbreaking ASPUN™ AT Fiber Resins, Dow is extremely well suited to be your total wipes solution provider, with reliable, simplified sourcing via rich product portfolios and extensive expertise in:

- [Antimicrobial formulations](#) (including surfactants, solvents, amines, chelants, rheology modifiers, and more)
- [Acrylic binders](#) (including APE-free, ultra-low formaldehyde products)
- [Rigid and flexible packaging](#) (with a broad range of PE-based polymers for recycle-ready packaging)

Tables 1 through 4 provide a brief overview of our nonwoven substrate, antimicrobial, acrylic binder and rigid packaging offerings. If you don't see what you're looking for, please ask. We're always interested in innovation and collaboration.

Table 1: Dow product offering for nonwoven substrates^(1,2)

Resin/grade	Density (g/cc)	I ² (dg/min)	Application(s)
ASPUN™ 6850A Fiber Grade Resin	0.955	30	Bicomponent staple fibers, bicomponent spunbonds
ASPUN™ 6835A Fiber Grade Resin	0.950	17	Bicomponent binder fibers, bicomponent staple fibers, bicomponent spunbonds
ASPUN™ 6840A Fiber Grade Resin	0.941	35	Bicomponent binder fibers, bicomponent staple fibers, bicomponent spunbonds
ASPUN™ AT 2135 Advanced Technology Fiber Grade Resin	0.935	21	Monocomponent spunbonds, bicomponent spunbonds
XUS 61800.48 Experimental Fiber Grade Resin ⁽²⁾	0.933	155	Monocomponent spunblown nonwovens, monocomponent meltblown nonwovens
XUS 61850.00 Experimental Meltblown Fiber Grade Resin ⁽²⁾	0.930	~500	Monocomponent meltblown nonwovens
FUSABOND™ E265 Functional Polymer	0.950	12	Binder fiber resin

⁽¹⁾ These are typical properties, not to be construed as specifications.

⁽²⁾ If products are described as "experimental" or "developmental": (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Dow to change specifications and/or discontinue production; and (4) although Dow may from time to time provide samples of such products, Dow is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

⁽³⁾ PE spunbond could have up to 50% lower carbon footprint than PP/PET/cellulose spunlace. Source: Dow Life Cycle Analysis (2022).

Table 2: Dow products for hard surface formulations & wipes⁽¹⁾

Ingredient	Product(s)	Benefits
Solvents	DOWANOL™, CARBITOL™, CELLOSOLVE™	Improved cleaning effectiveness with less product, shine, stability
Surfactants	DOWFAX™, ECOSURF™, TERGITOL™, TRITON™	Improved performance and cleaning efficacy, bio-based options
Surface modification polymers	ACUSOL™ PRO, XIAMETER™ (PMX, OFX)	Hydrophilize surface for long lasting cleanliness and hygiene benefits
Chelants	VERSENE™	Maintained clarity, streak and scale prevention
Acrylic emulsions	ACUSOL™ Rheology Modifiers	Controlled flow properties, stabilized formulations, suspends particles, vertical wall cling, reduced misting
Modified cellulose	CELLOSIZE™	Controlled flow properties, stabilized formulations, suspends particles, bio-based
Polyethylene glycols	CARBOWAX™	Low viscosity formats, solubilizes active ingredients and organic compounds, helps build solid product formats
Polypropylene glycols	Polyglycol P Series	Solubilizes active ingredients and organic compounds for formulation flexibility, reduces/replaces water activity, added microbial integrity
Silicone emulsions	XIAMETER™ AFE	Added layer of protection and shine, ease of cleaning, scratch recovery, de-foaming
Specialty alkanolamines	Diisopropanolamine (DIPA)	Alkalinity, efficient cleaning

Table 3: Dow acrylic binder product offering⁽¹⁾

Typical applications	Key attributes	Product	Tg (°C)	Description
<ul style="list-style-type: none"> Personal care wet wipes Industrial and household dry wipes 	<ul style="list-style-type: none"> Soft/medium hand Solvent and water resistance; absorbency Flexibility and strength Wet and lotion; skin contact 	RHOPLEX™ ECO-3482	-27	Alkylphenol ethoxylate- (APE-) free, ultra-low formaldehyde acrylic emulsion; excellent wet tensile strength, very soft hand, excellent wash durability, self-crosslinking, good color and formulation stability, excellent runnability
		RHOPLEX™ NW-1402	-11	Acrylic binder designed for excellent mechanical stability in nonwoven applications
		RHOPLEX™ HA-8	-10	General purpose acrylic binder that imparts a soft hand to nonwovens
		RHOPLEX™ ECO-3988	+7	APE-free, low formaldehyde, high solids acrylic binder with outstanding water and solvent resistance
		RHOPLEX™ E-358	+8	High solids acrylic binder with outstanding water and solvent resistance

Table 4: Dow products for wipes containers⁽¹⁾

Resin/grade	Density (g/cc)	I ² (dg/min)	Application(s)
UNIVAL™ DMDA-6200 NT 7 High Density Polyethylene (HDPE) Resin	0.953	0.38	Blow molded canisters
UNIVAL™ DMDA-6230 NT 7 HDPE Resin	0.949	0.25	Blow molded canisters
DOW™ DMDA-8907 NT 7 HDPE Resin	0.952	6.8	Injection molded pails
DOW™ DMDA-8910 NT 7 HDPE Resin	0.945	10	Injection molded pails
DOW™ 04852N HDPE Resin	0.952	4.8	Injection molded pails
EVERCAP™ DMDA-1241 HDPE Resin	0.952	15	Injection molded caps and closures, flip tops
DOW™ DMDA-8940 NT 7 HDPE Resin	0.951	44	Injection molded caps and closures, flip tops

⁽¹⁾ These are typical properties, not to be construed as specifications

Let's explore together.

We're excited about the opportunities for PE-based wipes made with ASPUN™ AT Fiber Resins and hope you are too. Please contact your Dow representative or [visit dow.com](http://www.dow.com) to learn more about teaming up to explore the possibilities.



For more information about Dow, visit www.dow.com/about. To contact a Dow representative, visit, www.dow.com/contact.

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