



Perceptions can be deceiving.

Discover the possibilities of polyethylene-based wipes.

A lot of different polymers are used to produce nonwoven wipes. But except for a small share of bicomponent (bico) filaments, polyethylene (PE) traditionally hasn't been one of them.

The reasons have included "PE can't be processed efficiently," "it isn't strong enough for wipes," and "poor dirt pick-up and liquid uptake/retention." However, Dow's current PE offerings are putting those outdated perceptions to rest with enhanced nonwoven performance.

A trusted solution for nonwovens.

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

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

So why not wipes too?

That's a good question. Especially since initial benchmarking and testing show strong competitive potential for **PE-based wipes**, with opportunities for:

- Exceptional softness and drapability
- Reliable wiping performance
- Enhanced sustainability
- Shorter supply chains
- Lower cost products

Let's look at the data.

Figure 1 clearly demonstrates the exceptional softness and drapability that help differentiate nonwovens made with ASPUN™ Resins from those made with polypropylene (PP) or other materials.

Figure 2 compares PE-based wipes⁽²⁾ with the market average performance of commercial baby, personal, and homecare wipes. As you can see, the wipes featuring ASPUN™ Resins provided higher tensile strength and elongation, while offering lower fuzz/lint generation (which translates to increased abrasion resistance).



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

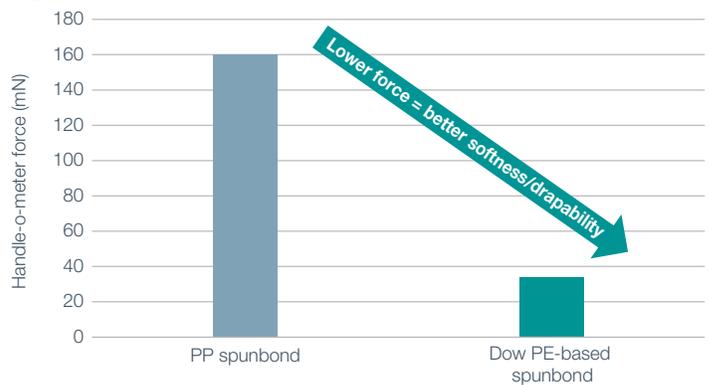
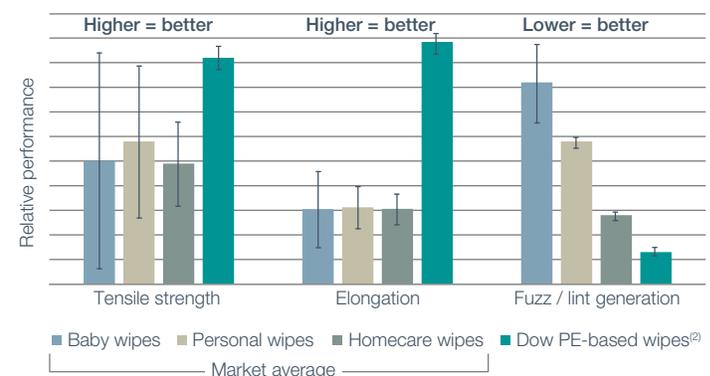
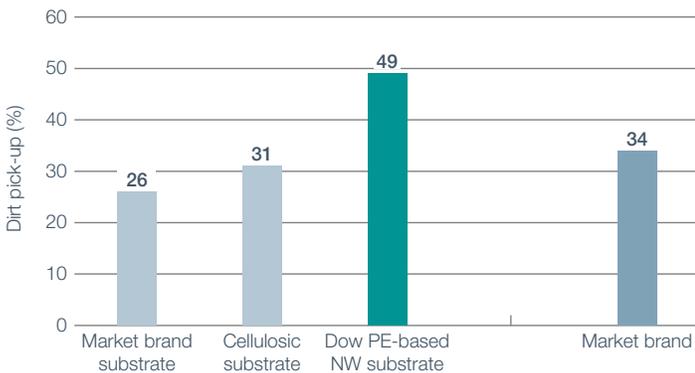


Figure 2: Durability comparison⁽¹⁾



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

Figure 3: Dirt pick-up comparison⁽¹⁾



⁽¹⁾Typical values, not to be construed as specifications. Users should confirm results by their own tests.

In Figure 3, our PE-based nonwoven (NW) substrate shows good dirt pick-up performance in comparison to not only two commonly used substrates, but also a commercially available brand of wipes.

We also see encouraging data for liquid uptake and retention in PE-based substrates. While all of these results are promising, we realize there's a long way to go. We're looking for development partners who are just as intrigued as we are and would like to join forces.

Why now?

Increased attention to cleaning and disinfecting is creating huge, ongoing demand for wipes. Combined with "maxed out" production capacities and the ever-growing need for improved sustainability, the time is right for alternative solutions.

Focused on sustainability.

PE-based wipes can also offer excellent opportunities for enhanced sustainability through:

- Reduced energy use and waste – lower CO₂ footprint
- Multiple end-of-life options (incineration-energy generation, recycling of PE-based packaging)
- Shorter supply chains with fewer raw materials and sources
- Forest conservation – by helping eliminate the use of wood pulp and cellulose
- Social impact – lower cost products encourage use for infection prevention

A simplified sourcing option.

In addition to proven PE nonwoven solutions, we can also offer reliable, simplified sourcing, with 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)
- Flexible and rigid packaging (with a broad range of PE-based polymers for recycle-ready packaging)

Tables 1 through 3 provide a brief overview of our nonwoven wipe substrate, antimicrobial, and acrylic binder offerings. If you don't see what you're looking for, please ask. We're always interested in innovation.

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
XUS 59910.15 Experimental Fiber Grade Resin ⁽²⁾	0.945	21	Bicomponent spunbonds, bicomponent staple fibers
ASPUN™ 6840A Fiber Grade Resin	0.941	35	Bicomponent binder fibers, bicomponent staple fibers, bicomponent spunbonds
ASPUN™ 6000 Fiber Grade Resin	0.935	19	Bicomponent staple fibers, bicomponent spunbonds, monocomponent spunbonds
XUS 59910.13 Experimental Fiber Grade Resin ⁽²⁾	0.935	21	Monocomponent spunbonds, bicomponent spunbonds
ASPUN™ MB Meltblown Fiber Resin	0.930	~500	Monolithic 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.

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

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^(1,2)

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

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Let's explore together.

We're excited about the opportunities for PE-based wipes and hope you are too. Please contact your Dow representative or the nearest location on the following page to learn more about teaming up to explore the possibilities.

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