FIBERS

nDryve™ PFAS-FREE MULTI-FLUID REPELLENT ADDITIVES FOR FIBER APPLICATIONS

Repels Fluids. Resists Stains. Drive Sustainability.

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MEET AMERICHEM

Americhem: A Global Leader in Sustainable Polymer Solutions

Americhem is a global leader in color and additive technologies, delivering innovative, sustainable polymer solutions for fiber and nonwoven markets. With decades of expertise in polymer science, additive engineering, and regulatory compliance, Americhem helps customers address evolving performance expectations while adapting to global PFAS regulations.

Recognizing the growing need for sustainable alternatives to traditional lubricants, Americhem proudly introduces nDryve™ a technology platform that delivers PFAS-free performance—combining durability, multi-fluid protection, and ease of integration for a wide variety of applications.

AMERICHEM OFFERS THE FOLLOWING BENEFITS AND MORE:

REGULATORY COMPLIANCE
Support for regulatory frameworks including cGMP, FDA, DMF/LOA and USP requirements.

CUSTOMIZATION
Tailored additive systems designed around polymer type, processing conditions, and end-use performance targets.

QUALITY & PERFORMANCE
Providing superior quality and outstanding performance, with an emphasis on durability, precision, and versatility. Reliable results are achieved through advanced polymer formulation and dispersion technologies.

EXPERTISE & INNOVATION
Leveraging years of industry experience and expertise to develop solutions

GLOBAL REACH
Americhem delivers reliable quality and service to customers across the globe, backed by worldwide manufacturing, technical support, and collaborative customer partnerships

Americhem's nDryve™ delivers durable resistance to alcohol and other low surface energy fluids—including water, oils, dyes, and contaminants—while offering proven stain resistance.

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MEET AMERICHEM

INTRODUCING NDRYVE™

Repel Fluids. Meet Compliance. Drive Sustainability.

Global PFAS regulations and sustainability expectations are reshaping how fluid repellency is achieved in fiber systems. Traditional fluorinated chemistries have historically been used to reduce surface energy and repel challenging fluids. However, regulatory pressure and environmental considerations are accelerating the transition toward PFAS-free alternatives.

nDryve™ is Americhem's PFAS-free in-melt surface-modifying technology platform engineered for fiber systems.

Instead of relying on surface-applied treatments or removable coatings, nDryve™ integrates functionality directly into the polymer melt during fiber production. The resulting fibers exhibit durable resistance to alcohol and other low-surface-energy fluids, including water, oils, dyes, and contaminants encountered in real-world environments.

By embedding repellency at the material level, nDryve™ enables consistent performance across the fiber lifecycle.

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APPLICATIONS

VERSATILE SOLUTIONS FOR CRITICAL FIBER MARKETS

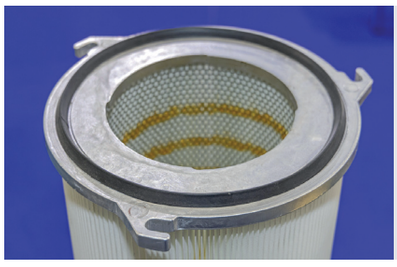
nDryve™ supports PFAS-free surface performance across a wide range of fiber applications where exposure to challenging fluids is common.

Medical & Healthcare Fibers: Surgical gowns, medical drapes, and face masks require resistance to alcohol-based disinfectants and other low-surface-energy fluids to maintain barrier integrity in regulated environments.

Hygiene Fibers: Wipes, diapers, and personal care substrates require durable repellency under repeated fluid exposure while maintaining softness and product performance.

Textile, Carpet & Technical Fibers: Apparel, carpet, and technical textiles require long-lasting resistance to staining, alcohol, oils, and contaminants in high-use environments.

Turf Fibers: Synthetic turf systems benefit from PFAS-free process aids that support consistent extrusion, surface quality, and durability in outdoor conditions.



Industrial Fibers: Filtration media, surface wipes, protective barriers, and technical substrates benefit from embedded repellency in demanding environments.

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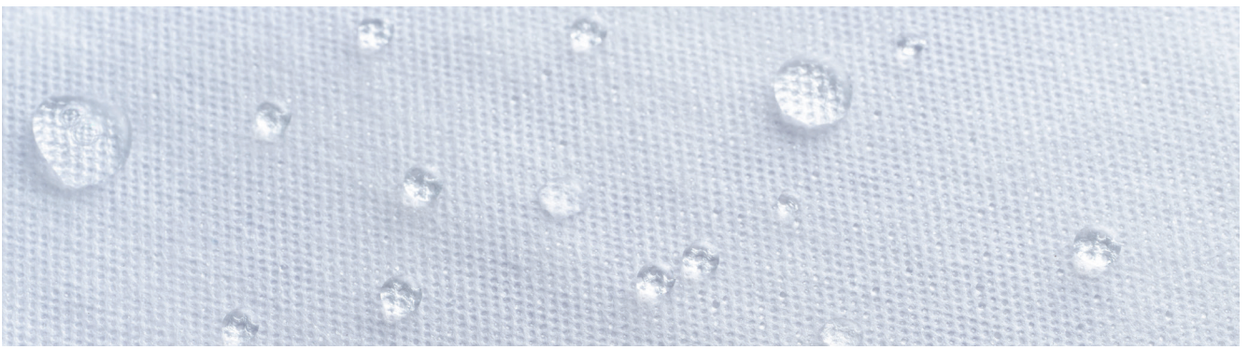
APPLICATIONS



PERFORMANCE FROM A GLOBAL LEADER

The introduction of nDryve™ reflects Americhem's broader commitment to sustainable material innovation and proactive environmental stewardship. By anticipating regulatory shifts and designing polymer-level performance solutions, Americhem helps customers reduce environmental risk while maintaining functional performance. nDryve™ demonstrates how additive engineering can support the transition away from fluorinated chemistries without sacrificing durability or manufacturability.

BENEFITS

Built-In Protection That Lasts

Unlike topical finishes, nDryve™ additives are incorporated during melt processing, embedding fluid repellency directly into the fiber matrix. This enables repeatable performance, fewer processing steps, and reduced chemical handling—all while delivering durable resistance to alcohol and other low-surface-energy fluids.

Superior Multi-Fluid Repellency

Enhances fiber surface performance to resist wetting, wicking, and absorption from alcohol and other low-surface-energy fields, supporting barrier and functional fiber applications.

Durable Performance in Real World Use

Material-level integration maintains repellency under repeated exposure to alcohol-based formulations, aqueous solutions, and cleaning environments.

Broad Fiber Applicability

Designed for use across polyolefins and engineering fibers (PET, PA6), suitable for medical, hygiene, textile, carpet, technical, and nonwoven fibers without needing surface treatments.

PFAS-Free by Design

nDryve™ provides PFAS-free surface performance through **in-melt polymer integration**, supporting regulatory alignment and sustainable material strategies.

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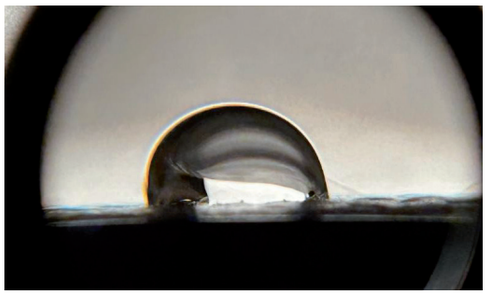
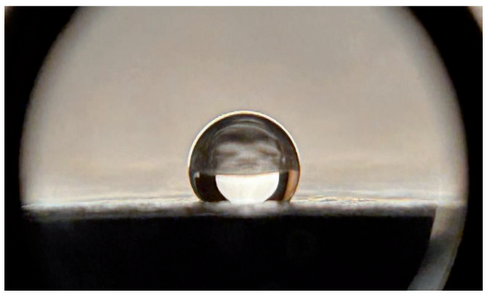
VALIDATED THROUGH FIBER-LEVEL TESTING



Control PP Fibers (NW): Lower contact angle; Increased wetting.



PP Fibers (NW) + nDryve™ Hydrophobic: Higher contact angle; Improved water repellency

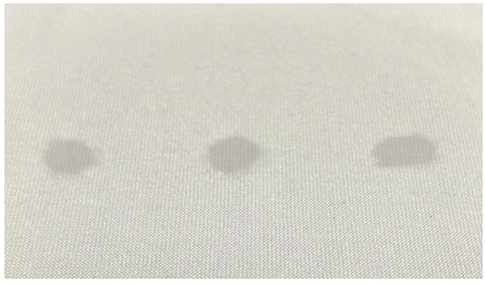
Hydrophobic Performance – Polyolefin Fiber Systems (PP)

Untreated polypropylene (PP) fibers exhibit higher surface energy, resulting in lower contact angles and increased wetting when exposed to water.

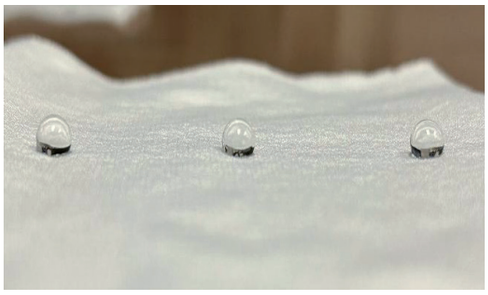
nDryve™ enables in-melt surface modification, reducing surface energy at the fiber interface. PP fibers containing nDryve™ demonstrate higher contact angles and visible water beading, indicating improved hydrophobic performance and resistance to wetting.

Because the functionality is integrated during melt processing, the performance is embedded at the polymer level, providing durable behavior without reliance on surface-applied treatments that could degrade, migrate, or wash off over time.

This approach provides a durable pathway to achieving hydrophobic performance in polyolefin fibers and serves as a foundation for extending similar design principles to other fiber systems.



Control PET Fabric: No Water Repellency; Complete wetting observed



PET Fabric + nDryve™ Hydrophobic: Improved hydrophobic behavior with visible water beading

Hydrophobic Performance - PET Fabrics

Hydrophobic performance in engineering fiber systems presents a distinct challenge due to the inherent surface properties of polymers such as PET. Untreated PET fibers typically exhibit higher surface energy, allowing water and aqueous solutions to spread and wet the surface.

nDryve™ enables in-melt surface modification, reducing surface energy and improving wetting behavior. PET fibers containing nDryve™ demonstrate visible water beading and increased contact angle, indicating enhanced hydrophobic performance.

Because the functionality is integrated during melt processing, performance is embedded at the polymer level, providing durable resistance to water and other low-surface-energy fluids without surface-applied treatments.

Importantly, this example demonstrates that the nDryve™ platform extends beyond polyolefin systems and can be applied to engineering fiber systems such as PET, supporting broader application across textile, technical, and industrial fiber applications.

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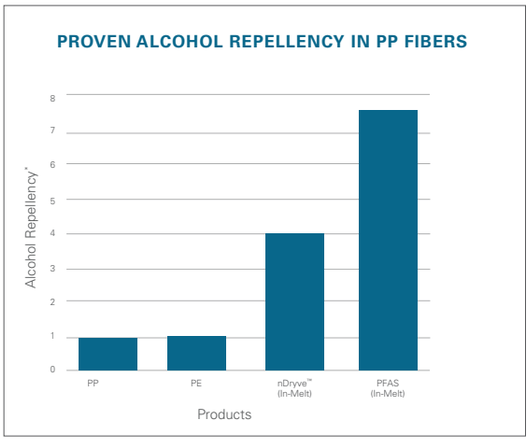
TECHNICAL PERFORMANCE



Product	Alcohol Repellency Rating
PP	1
PE	1
nDryve™ (In-Melt)	4 (40% IPA)
PFAS (In-Melt)	7

Note:
Alcohol Repellency Rating of nDryve™ (In-Melt) is 4, which corresponds to 40% IPA test solution.
Fibers containing nDryve™ demonstrate improved perfomance, achieving an alcohol repellency rating of 4 (40% IPA) under the NWSP 080.8.R0 test method;under AATCC TM193 Aqueous Liquid Repellency test conditions, this performance corresponds to a Grade 6.

Alcohol Repellency - PP Fibers

Alcohol repellency was evaluated using the NWSP 080.8.R0 test method, a standard procedure for assessing resistance to alcohol in fiber systems. Ratings are based on IPA/water test solutions, where higher values indicate resistance to higher alcohol concentrations.

Untreated polypropylene and polyethylene fibers show minimal resistance to alcohol exposure, typically with ratings of 1–2. Fibers containing nDryve™ demonstrate improved performance, achieving an alcohol repellency rating of 4.

PFAS-based systems are included as a benchmark and achieve higher absolute ratings. However, these results demonstrate that meaningful alcohol resistance can be achieved through a PFAS-free, in-melt design approach, with performance engineered directly into the fiber.

In comparative evaluations:

- Regular nylon shows significant stain uptake
- Cationic nylon provides intermediate stain resistance
- PA6 fibers with nDryve™ demonstrate reduced stain penetration

Stain Resistance – Nylon Fibers

Stain resistance in nylon 6) fibers presents a greater challenge compared to PET due to the higher absorbency and hydrophilic nature of nylon, which makes it more susceptible to staining.

Performance was evaluated using AATCC 175, a standard method for assessing resistance to acidic food colorants in pile floor coverings, along with an internal accelerated screening method aligned with industry practice.

This demonstrates improved stain resistance in nylon fibers through in-melt material design, offering a cost-effective alternative to traditional dye-blocking approaches and extending PFAS-free performance across engineering fiber systems.

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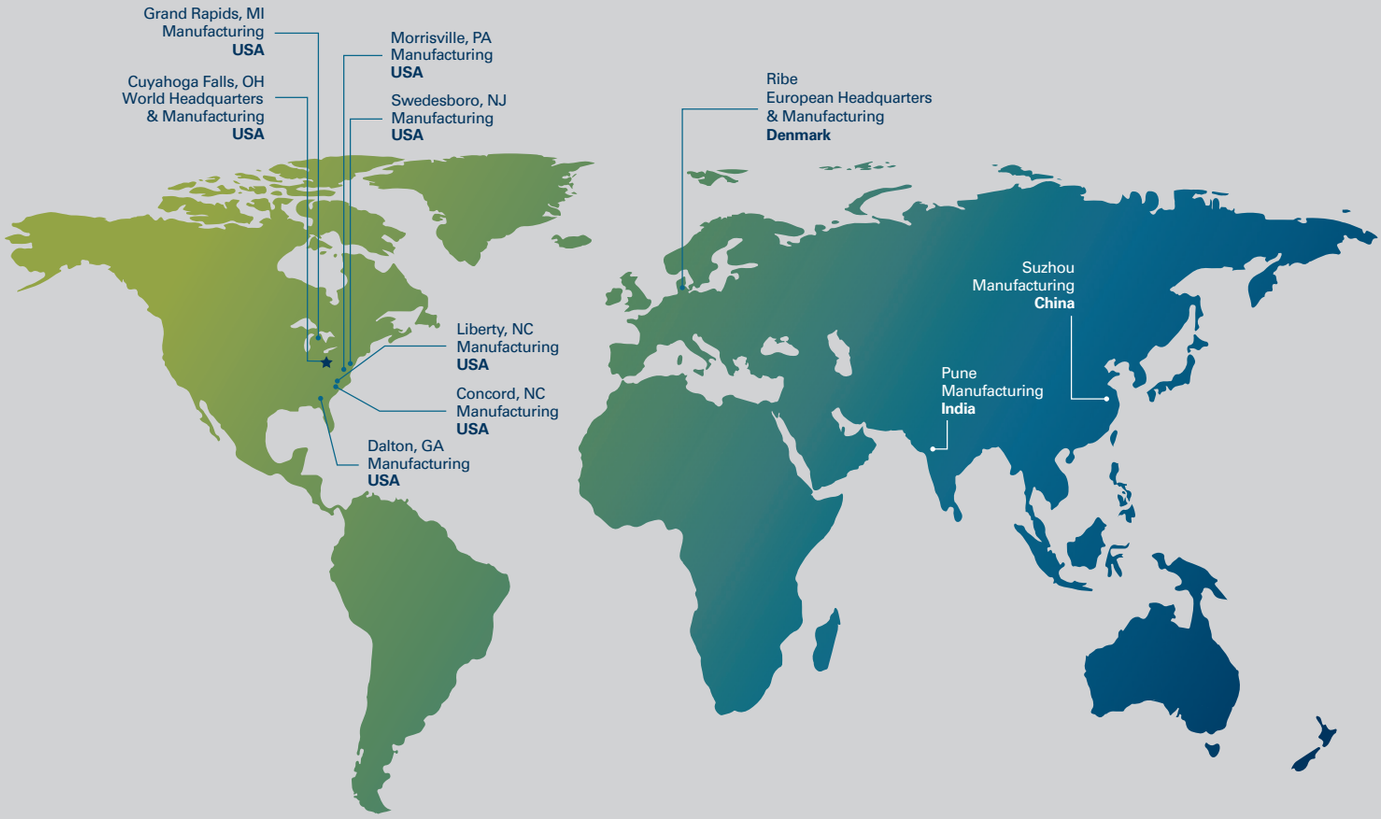
A GLOBAL LEADER IN FIBERS



BATCH TO BATCH.
MARKET TO MARKET.
CONTINENT TO CONTINENT.

From our headquarters in Cuyahoga Falls, Ohio, to our manufacturing locations and sales offices across the world, our expansive footprint provides global reach for your organization's needs. Not only are we dedicated to getting your materials where they need to be, when they need to be there, we work behind the scenes to reduce your supply risks. In addition to our network of plants, regulatory and compliance teams, we have contingency plans and support services in place to secure your product against unforeseen interruptions.

Explore our full capabilities at americhem.com

About Americhem

Americhem is a global leader in custom color and additive solutions, offering unmatched performance, consistency, and sustainability for polymer products. Our innovative masterbatches help customers achieve faster speed to market, reduced production costs, and superior product performance in the nonwovens industry.

For more information or samples, contact: fibers@americhem.com

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