



METAINT

Beyond Microdenier

Microfilament Spunbond
Technology for Advanced Performance



METAINT: Microfilament Spunbond Technology for Advanced Performance

MOGUL METAINT represents the pinnacle of Mogul's advanced engineering expertise and nonwoven specialization with spunbond technology. This high-performance microdenier microfilament nonwoven family is manufactured from 100% PET raw material, achieving microdenier filament fineness. This level of technological precision places METAINT among a select group of global manufacturers capable of producing ultra-fine microfilament structures. The result is a spunbond nonwoven fabric that delivers superior performance across demanding industrial and technical applications.

METAINT is strategically replaced commodity fine denier fabrics spunlace and needlepunch products. The microfilament structure delivers distinct advantages that redefine expectations in technical nonwoven applications.

Fiber Fineness

0.8 - 0.9 microdenier filament structure - finer than any conventional alternative

Composition

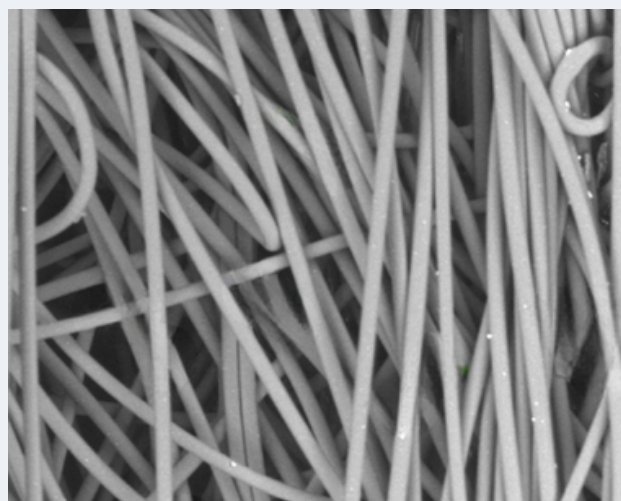
100% PET Spunbond proven biocompatibility chemical resistance, and dimensional stability

Basis Weight Range

35 - 200 gsm lightweight efficiency across the full spectrum of technical applications

Width

290 cm cut width precision converted for direct integration into downstream manufacturing



Spunbond 0.8-0.9 microdenier

Technical Advantages & Engineering Precision

METAINT is strategically engineered to replace commodity fine denier fabrics – including spunlace and needle punch products – across the most demanding technical nonwoven applications. The microfilament structure is not merely a refinement of existing technology; it represents a fundamental shift in what is achievable in fiber architecture, pore geometry, and surface quality. Each filament is drawn to microdenier fineness during the spunbond process, creating a three-dimensional fiber network of extraordinary consistency that conventional carded or needle-punched structures cannot replicate.

The ultra-uniform fiber distribution inherent to the METAINT manufacturing process eliminates the surface irregularities, density variations, and weak zones that characterize commodity nonwovens. For filtration engineers, this translates directly to predictable, reproducible separation performance – a critical requirement when specifying membrane support layers for RO, UF, and NF systems. For product developers working in precision cleaning, medical, or automotive applications, it means a substrate that performs consistently from roll to roll and production lot to lot.



Ultra-Uniformity

Ultra-uniform fiber distribution creates consistently smooth, defect-free surfaces. Eliminates the density gradients and weak zones that compromise performance in conventional nonwovens.



Superior Tensile Properties

High strength is maintained even at the lowest basis weights in the 35–200 gsm range. The microfilament network delivers an optimized strength-to-weight ratio unmatched by needle punch alternatives.



Precision Filtration

Controlled pore structure optimizes separation performance for demanding liquid and membrane filtration. Consistent pore geometry ensures predictable flow rates and particle retention across the full service life.



Durability & Hygiene

Fully washable with a clean, low-lint surface. The PET microfilament structure resists fiber shedding and contamination – essential for cleanroom, medical, and sensitive industrial environments.

METAINT's lightweight construction also delivers measurable efficiency advantages over needle punch products – reducing material consumption, lowering shipping weight, and simplifying downstream processing without sacrificing mechanical performance. This product is manufactured at our Lüleburgaz Factory.



Market Applications & Replacement Solutions

- Filtration Media: RO, UF, and NF membrane support layers requiring dimensional stability and uniform support
- Liquid & Water Filtration: High-efficiency particulate removal with controlled flow rates and extended service life
- Technical Cleaning & Wiping: Low-lint performance for cleanroom and precision surface cleaning applications

- Needle Punch Alternatives: Technical solutions delivering comparable performance at reduced weight and improved processability. METAINT eliminates many limitations of traditional needle punch manufacturing while reducing material consumption.
- Technical Packaging & Surface Protection: Interior trim components, acoustic insulation, and protective layers requiring durability, dimensional stability, and clean appearance. Lightweight construction contributes to vehicle weight reduction initiatives.
- Automotive & Industrial Applications: Clean, non-abrasive surface protection for sensitive components during shipping and storage. Excellent conformability and tear resistance ensure reliable protection throughout the supply chain.
- Hygiene & Medical Use: Applications demanding fiber integrity, fluid management, and skin-friendly characteristics. Consistent quality and proven biocompatibility of PET ensure reliable performance in sensitive applications.



Filtration Media

METAINT serves as dimensionally stable support layers for RO, UF, and NF membrane systems. Uniform fiber architecture ensures consistent membrane casting conditions and long-term mechanical integrity under pressurized service. High-efficiency particulate removal with controlled flow rates extends service intervals in liquid and water filtration systems.



Automotive & Industrial

Interior trim components, acoustic insulation, and protective layers benefit from METAINT's lightweight construction and excellent conformability. Reduced basis weight directly supports vehicle mass reduction programs without compromising structural or acoustic performance. The clean surface and consistent thickness further simplify assembly integration.



Technical Cleaning & Wiping

Low-lint, non-abrasive surface characteristics make METAINT the preferred substrate for cleanroom and precision surface cleaning applications. The microfilament structure captures and retains particulate without releasing fiber fragments — a critical performance requirement in semiconductor, optics, and medical device manufacturing.



Hygiene & Medical

Applications demanding fiber integrity, fluid management, and skin-friendly characteristics rely on METAINT's consistent quality and proven biocompatibility of PET. The microfilament structure delivers reliable performance in sensitive applications where fiber shedding, chemical leaching, or inconsistent basis weight would represent unacceptable risks.

Performance Comparison: METAINT vs. Conventional Technologies

The following comparative analysis provides materials engineers and procurement specialists with a quantitative and qualitative framework for evaluating METAINT against the two most common incumbent technologies: fine denier carded nonwovens and needle punch products. Across every performance dimension relevant to demanding industrial and technical applications, METAINT establishes a clear and measurable advantage — particularly in the critical areas of fiber fineness, pore control, and surface uniformity that govern filtration efficiency, cleanroom suitability, and membrane support performance.

Performance Factor	METAINT	Fine Denier Carded	Needle Punch
Fiber Fineness	0.9 – 1 dtex	1.5 – 3.0 dtex	3.0 – 6.0 dtex
Surface Uniformity	Excellent	Good	Moderate
Strength/Weight Ratio	Optimized	Standard	Lower
Pore Control	Precise	Variable	Limited
Clean Surface	Superior	Good	Moderate
Basis Weight Range	35 – 200 gsm	40 – 150 gsm	200 – 800 gsm

Why METAINT Outperforms

The fiber fineness advantage — at 0.9–1 dtex versus 3.0–6.0 dtex for needle punch — is not incremental. It represents a structural transformation in the nonwoven's pore geometry, surface energy, and mechanical behavior. Finer filaments pack more densely at equivalent basis weights, creating smaller, more uniform pores without the mechanical entanglement damage that characterizes needle punch consolidation.

For filtration engineers, this means membrane support layers with consistent casting surfaces and predictable hydraulic resistance. For product developers, it means a substrate that performs reliably at the lowest basis weights in its class — reducing material cost and enabling lighter, more competitive end products.

Specification Summary

- Composition:** 100% PET Spunbond
- Basis Weight:** 35 – 200 gsm
- Width:** 290 cm (cut width)
- Color:** White
- Fiber Fineness:** 0.9 – 1 dtex
- Surface:** Clean, low-lint, washable
- Pore Structure:** Precisely controlled
- Certifications:** PET biocompatibility

METAINT is available for sampling and technical evaluation. Contact Mogul's technical sales team to specify the optimal basis weight and configuration for your application requirements.



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