Your Best Choice for OEM Filtration Technology Filter Media Technology

Donaldson manufactures the world's most advanced engine and hydraulic filtration products, enhanced by our innovative media technologies for both air and liquid filters. Donaldson filtration technologies can be applied on engines and equipment used around the world.

Invented by Donaldson in the 1980's with over a billion square feet sold, Ultra-Web[®] advanced nanofiber technology is a durable air filtration solution engineered to perform in extreme temperature and humidity conditions, unlike ordinary nanofibers.

Our new generation Synteq XP[™] synthetic liquid media delivers improved filtration performance in engine, hydraulic and crankcase applications.

WIDE SELECTION

- Proprietary formulations
- Cellulose, synthetic, blends and specialty

Donalds

- Media types available for:
 - Primary & safety air filters
 - Cabin ventilation filters
 - Crankcase filters
 - Flame retardant applications
 - Hydraulic filters
 - Lube, fuel and coolant filters

IN-HOUSE MEDIA CAPABILITIES

- Wet-laid media production for application development
- Trial media runs
- Development of proprietary formulations

FILTER PERFORMANCE TESTS

- Efficiency testing (gravimetric and fractional)
- Capacity testing per ISO5011, SAE J726
- Particle counting
- Multi-pass testing
- ISO, SAE, NFPA
- Customer standards
- Contaminant (particle or water) removal efficiency
- Contaminant capacity
- Measurement of blow-by gases (distribution and concentrations)

MEDIA CHARACTERIZATION TESTS

- Permeability
- Efficiency
- Submicron loading (soot)
- Tensile strength
- Burst strength
- Basis weight
- Thickness
- Stiffness
- Gurley stiffness
- LEFS bench
- 3-Point bend















Industry Shaping Technology Continuous Development of New Solutions

Our dedicated filter media scientists have developed hundreds of proprietary media grades. We rely on continuous advancements by our scientists to maintain our leadership position. These unique media designs allow customization to meet different global environmental practices and global designs that meet specific application requirements for each markets.





PERKINS MULLEN BURST



TMI MONITOR BURST



ENVIRON TENSILE



TAPE PULL



CORRUGATION TESTER



POROMETER



PERMEABILITY TESTER

FLAMMABILITY TESTER





HYDRO HEAD H20 TESTER

LEFS TESTER





Engine Air Intake Filter Media Advanced Technology Delivered by Donaldson

Today's engines are built to more stringent specifications and finer tolerances. Engine components require cleaner air to achieve better combustion and lower emissions. Your air intake system filter media and service practices can make the difference between engine power and engine problems.

Cellulose Media (Traditional)

Primary dry filter media is a cellulose base material and used in the majority of our air filter applications. It is used primarily in two types of engine intake systems - single or two stage. Applications include off-road, on-highway trucks, buses and underground mines.

HOW IT WORKS



SEM 100X





MEDIA IMAGE



Engine Air Intake Filter Media

Ultra-Web[®] Nanofiber Technology

Ultra-Web[®] filter media is composed of a cellulose or a cellulose/synthetic substrate with nano-fibers applied to one side. This media provides a durable filtration solution in the high temperature and humid environments experienced by diesel, turbine, hybrid and other powered engines.

Ultra-Web offers a higher initial efficiency vs. standard cellulose, has very high efficiency throughout a filter's life, and provides excellent engine protection from sub-micron particulate (e.g. exhaust soot).

SEM 100X











Vibration Resistant Media

Vibration resistant filter media is a cellulose base material that offers maximum filtration protection and withstands high pulsation/ vibration situations that would normally destroy other filter medias.

Applications include, but are not limited to, one, two and three cylinder engines and piston compressors.

SEM 100X











Engine Air Intake Filter Media

Flame Retardant, UL Approved Media

Flame retardant/UL-approved filter media is a cellulose base material specially treated for use on vehicles operating in industrial applications where sparks or flames from backfiring through the intake system create a fire hazard.

Grain elevators and warehouses are good examples of UL-approved filter media applications.







MEDIA IMAGE







Safety Filter Media (Pleated)

Pleated safety filter media is designed for heavy duty air cleaner systems with high velocity airflow and is used in safety filters - both single and two stage air cleaner systems. The safety filter protects the intake system while servicing the primary filter and in the event the primary filter is damaged.

The same media may be used for ventilation panel filters to remove dust, chaff and pollen from air entering vehicle cabs in construction, agricultural, industrial and mining applications.





SEM 600X







Engine Air Intake Filter Media

Safety Filter Media (Non-Pleated)

Non-pleated safety filter media has a synthetic base. It is primarily used in light to medium duty intake system two-stage air cleaners, i.e. Donaldson F Series or Cyclopac[™] type air cleaners. The safety filter protects the intake system while servicing the primary filter and in the event the primary filter is damaged.



HOW IT WORKS



Synteq XP[™] Crankcase Filter Media

This industry shaping technology was developed specifically to reduce engine crankcase emissions. Synteq XP has a lower operating pressure drop, higher efficiency and longer filter life compared to traditional media. It offers:

- Higher continuous operating temperature
- Higher efficiency
- Extended service life



HOW IT WORKS



SEM 100X



SEM 600X



MEDIA IMAGE







Engine Liquid Filter Media Engineered for Today's Vehicles & Equipment

Donaldson offers extensive filter media technology choices for liquid filters – with over 34 different formulations. These multiple formulations enable our engineers to develop filtration systems that exceed or match a wide variety of customer specifications. When an application requires higher efficiency filtration, Synteq[™] – our proprietary synthetic media technology – is utilized to capture more and smaller contaminant than cellulose media.

Fuel Filter Media

Cellulose Media (Traditional)

are captured deeper in the media.

Engine fuel filter media is most commonly a pleated cellulose base material. This fuel filter media is tested for compatibility with a variety of diesel fuels, including biodiesel and ULSD.

Larger particulate are trapped on outer layer, while finer particles

HOW IT WORKS



SEM 100X





Fuel Filter Media

Treated Cellulose Media (Fuel Filter Water Separator)

This fuel filter water separator media is a cellulose base material. Treating a cellulose media with a silicon based treatment allows for effective water separation. Typically, this media is used on the suction side of the fuel system to remove harmful water and coarse particulate contaminant.

HOW IT WORKS

Water coalesces on media and drains to bottom of can or water collection bowl. Particulate is trapped and held in media.

SEM 100X





MEDIA IMAGE



Synteq[™] Fuel Filter Water Separator Media (Meltblown & Cellulose)

Donaldson's third generation of Synteq fuel filter water separator media uses both cellulose and meltblown synthetic layers to achieve the highest levels of fuel filtration performance. This double-layered media increases particulate holding capacity and is a high performance water separator. It has the ability for high efficiency emulsified water separation and can be used in both suction and pressure sides of fuel systems.

Synteq_{TM}

HOW IT WORKS

The polyester layer improves water separation and dirt holding capacity performance. This media is ideal for critical applications or extended service intervals.











Fuel Filter Media

Synteq XP[™] Fuel Filter Water Separator Media (Meltblown & Cellulose)

High-performance Synteq XP media was developed specifically to overcome the evolving challenges of today's fuels. This ground-breaking filter media takes fuel filtration performance to a whole new level by providing enhanced engine and system component protection options including:



- Higher efficiency for optimal engine protection, or
- Extended filter life (up to 2 to 3 times that of traditional filter media)

Versatile and smaller filter packaging configuration options are available for secondary fuel filtration.



Lube Filter Media

Cellulose Media (Traditional)

Engine lube filter media is most commonly a pleated cellulose base material. This media effectively combines an application's efficiency and capacity requirements while maintaining cost effectiveness.

As oil flows through media, large contaminant is captured on the surface (or dirty side) of the filter while smaller contaminant becomes embedded in the underlying media layer. Industry filtration performance standards, i.e., ISO 16889, are used to determine a performance rating. The combination of the size of the particles and number of particles that pass completely through the media are measured as a "beta ratio" function. The filtration performance characteristics of a lube system are typically specified by the engine manufacturer.

SEM 100X SEM 600X MEDIA IMAGE



Lube Filter Media

Synthetic Blend Media (Cellulose & Synthetic)

This media is a blend of cellulose and synthetic media technologies. It utilizes the best attributes of both media fiber types to achieve an improved cost to performance ratio for more demanding applications than a cellulose only media can achieve.

HOW IT WORKS

This media provides the consistency of layered fibers to capture coarse contaminant coupled with the affordability of cellulose to deliver an efficient and effective performance alternative to traditional cellulose media.

SEM 100X





MEDIA IMAGE



Synteq[™] Media (Full Synthetic)

This engine lube filter media is constructed of layered, micro-fiberglass synthetic fibers and is trademarked Synteq[™]. It provides enhanced durability for extended drain intervals while maintaining or improving efficiency and capacity. Donaldson Synteg lube media also offers lower restriction. Low restriction allows better flow, which ensures component protection over a larger range of engine conditions.

SEM 100X



SEM 600X



MEDIA IMAGE







Coolant Filter Media

Cellulose Media

Engine coolant filter media is most commonly a pleated cellulose base material. This media effectively combines an application's efficiency and capacity requirements while maintaining cost effectiveness.

Traditional based coolant systems often use this media when service intervals are maintained with standard oil drain intervals.







HOW IT WORKS



Synteq[™] Media (Full Synthetic)

Extended life intervals require micro-fiberglass synthetic media trademarked Synteq[™]. This media provides enhanced durability for extended drain intervals while maintaining or improving efficiency and capacity. Donaldson Synteq coolant media also offers lower restriction, ensuring component protection over a larger range of engine conditions.



SEM 100X











Hydraulic Filter Media Powerful Performance for Increased Cleanliness

Sensitive hydraulic circuits are vulnerable to a variety of contaminants – resulting in inefficiency, downtime and excessive repair costs. Donaldson offers an extensive line of filter media technologies – with over 35 different formulations including Synteq[™] and Syneq XP[™] for high performance filtration. These media formulations help protect critical components from wear and maintain peak operating performance.

MEDIA IMAGE

Cellulose Media (Traditional)

Cellulose fibers are actually wood fibers, microscopic in size and held together by resin. Fibers are irregular in both shape and size. Cellulose often has lower beta ratings, which means there are smaller pores in the media. Smaller media pores cause more flow resistance, resulting higher pressure drop.

HOW IT WORKS

While cellulose provides effective filtration for a wide variety of petroleum-base fluids, in certain applications it results in poor filtration performance as compared to synthetic media.



SEM 100X



SEM 600X



Hydraulic Filter Media

Synteq[™] Media (Full Synthetic)

Synthetic fibers are man-made, smooth, rounded and provide the least resistance to flow. Their consistent shape allows for control of the fiber size and distribution pattern throughout the media mat to create the smoothest, least inhibited fluid flow. Consistency of fiber shape allows the maximum amount of contaminant-catching surface area and specific pore size control. The result is media with predictable filtration efficiencies removing specified contaminants and maximum dirt holding capacity.

The low resistance of synthetic media to fluid flow makes it ideal for use with synthetic fluids, water glycols, water/oil emulsions, HWCF and petroleum-based fluids.

SEM 100X





MEDIA IMAGE



DT Synteq[™] Media (High-Performance Full Synthetic)

SEM 600X

Donaldson high-performance DT grades of Synteq media utilize a blend of borosilicate glass fiber whose matrix is bonded together with an epoxy-based resin system. Donaldson filter media scientists found this to provides the best available chemical resistance for the broadest array of hydraulic applications.

HOW IT WORKS





SEM 100X





MEDIA IMAGE







Hydraulic Filter Media

Synteq XP[™] Media (Full Synthetic)

Synteq XP is a revolutionary new synthetic media technology proprietary to Donaldson. Synteq XP is used in a variety of applications including hydraulic and crankcase filtration. This media delivers a new level of performance to hydraulic filters by allowing high efficiency filtration and reduced restriction. Customer benefits include increased filtration efficiency, improved system component protection, increased capacity and smaller filter package size.





HOW IT WORKS

SEM 100X





MEDIA IMAGE

MEDIA IMAGE

Wire-Mesh Media

Wire-mesh media consists of stainless steel, epoxy-coated wire mesh

available in 3 mesh sizes:

- 100 mesh yields 150 µm filtration
- 200 mesh yields 74 µm filtration
- 325 mesh yields 44 µm filtration

Typically, wire-mesh filters will be applied to catch very large, harsh particulate that would damage a normal filter. This media is also useful as a coarse filter in viscous fluid applications.

SEM 60X



SEM 100X





Hydraulic Filter Media

Water Absorbing Media

Water absorption media quickly and effectively removes free water from hydraulic systems. Using super-absorbent polymer technology with a high affinity for water absorption, this media alleviates many of the problems associated with water contamination found in petroleum-based fluids.

HOW IT WORKS

SEM 100X

SEM 600X

MEDIA IMAGE







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Australia 61-02-4350-2033

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