

COALESCER MEDIA



Meeting today's demanding requirements for removal of liquid and solid contaminants from gaseous and liquid systems.

Hollingsworth & Vose manufactures a comprehensive line of coalescer media solutions for applications that require gas, liquid, and liquid-liquid separation. To meet key market demands, H&V offers a choice of fiberglass, cellulose, and synthetic media combined with specialized organic binders. For applications requiring additional structural integrity, these media are also available with lamination.

H&V's coalescer media are ideal for separating oil and/or water from compressed air and natural gas and for removing water from oil, aviation, and other fuels. With mean pore sizes ranging from < 1 to 25 microns, these media meet your needs for almost any level of separation.

Media Choices

A wide range of media is utilized in coalescing applications. Hollingsworth & Vose's broad manufacturing capabilities include microfiberglass, cellulose, and nonwoven media. Microfiberglass provides superior coalescence of the smallest contamination droplets. Cellulose media are rugged and economical. Carded nonwovens are suitable as coarse layers and protective wraps. A variety of nonwoven scrims can be laminated to increase structural integrity.



High Efficiency & Specialty Filtration

Hollingsworth & Vose is a recognized leader in high-performance filter media. Our product line includes:

- Coalescer
 - HEPA & ULPA cleanroom
 - Industrial & commercial HVAC
 - Residential HVAC (furnace)
 - Specialty liquid filtration
 - Room air cleaners
 - Respiratory protective equipment
 - Vacuum cleaners
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Media Selection

When choosing filter media for your coalescing application, consider factors such as:

- Carryover/efficiency
- Clean pressure drop
- Chemical compatibility
- Economics
- Service life
- Operating temperature and pressure range

While overall element configuration determines filter properties, media selection can play an important role in achieving desired characteristics.

Microfiberglass

H&V microfiberglass media are clearly superior for many coalescing applications. The fibers are naturally oleophobic, so oil droplets adhere but do not swell them. Low binder content means more fiber area is available for contaminant capture and coalescence.

Our microfiberglass media are designed and manufactured to provide uniform products. A wide range of properties is available in standard grades.

- < 1.20+ micron MFP
- Minimum flow resistance
- Excellent chemical resistance
- Long life
- 37 to 125 lb/rm basis weight, single caliper
- With or without laminated support scrims
- With or without water repellency



Cellulose

H&V cellulose coalescer media are excellent choices when applications demand a more economical alternative to glass, yet still require low carryover and long life. These rugged media are appropriate for a broad range of processing equipment and production capabilities. Some typical properties include:

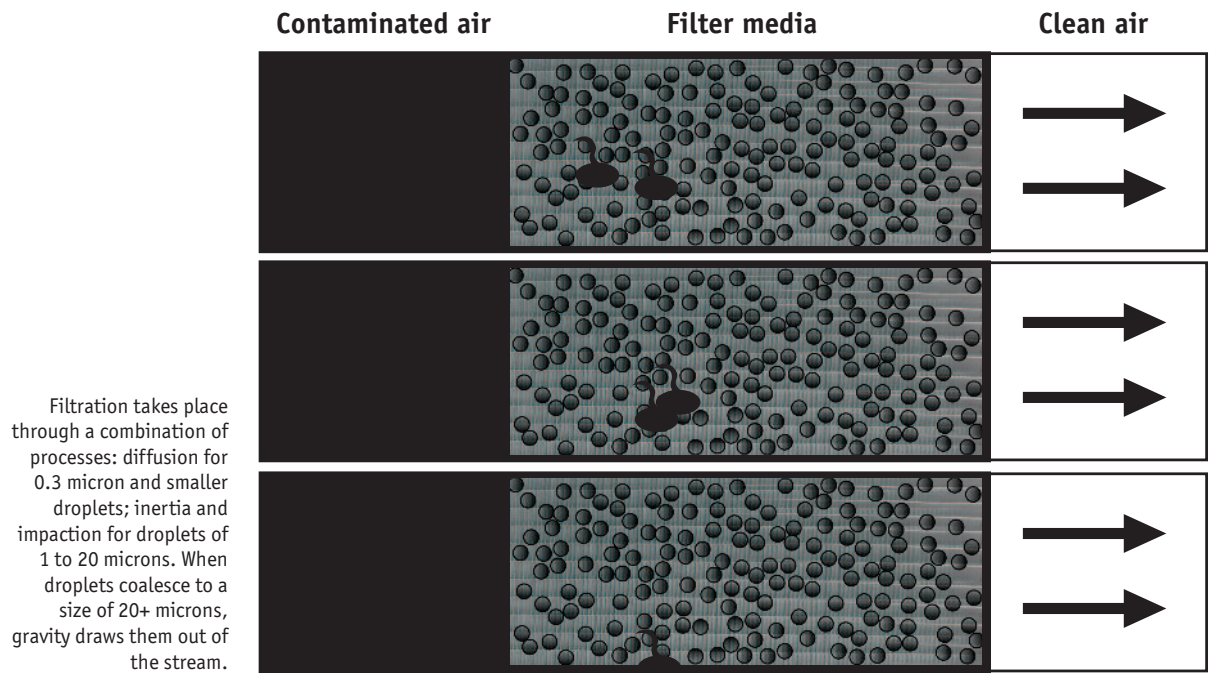
- Heavy basis weight
- Corrugation
- MFP of 30+ microns
- Acrylic, phenolic, or blended binder types
- High strength
- Low levels of glass fibers



The Coalescing Process

The smallest water or oil droplets (< 1 µm diameter) adhere to fibers with diameters of less than 1 micron. As the media become saturated, droplets come in contact with other droplets on the fiber surface. These droplets merge or coalesce into larger droplets.

The contaminant droplets continue to grow until they are heavy enough for gravity to separate them from the fluid or gas stream that is being cleaned. The contaminant drains via gravity from the bottom of the filter while the clean stream flows through the element.



Applications

Gas-Liquid Separation

Compressed air is cleaned for a variety of reasons: equipment protection, pollution control, oil recovery, and protection of downstream processes. Removal of oils, lubricants, water, and particulate contamination from gases is a growing environmental concern for industry. For example, manufacturing modernization has significantly increased the use of pneumatic robots, which rely on equipment with small orifices that can be easily clogged by contaminants. Increased environmental regulation and awareness have highlighted the need to remove oily contaminants from process gases prior to atmospheric discharge.

Liquid-Liquid Separation

A critical application for liquid-liquid coalescence is the removal of water from aviation and other fuels. Water can be dissolved in aviation fuel in concentrations up to approximately 50 ppm. At higher concentrations, water forms droplets. At low temperatures, these droplets freeze and can interrupt the flow of fuel.

Filter Construction

H&V media are utilized in both pleated and wrapped configurations. These are frequently multi-layer to provide depth filtration. This can result in reduced contaminant carryover and longer filter life. Multiple layers may be of the same media grade or of grades with different efficiency levels.

Coalescer Microfiberglass Filter — U.S. Grades

COALESCER MICROFIBERGLASS FILTER MEDIA

Media	Typical Values							
	HA-8141	HB-5211	HB-5313	HC-4011	HD-2021	HD-2343	HD-2523	HE-1021
Description	1 µm	1-2 µm	1-2 µm	1-2 µm	3-5 µm	3-5 µm	3-5 µm	10-12 µm
Basis Weight lb/3000 ft ² gm/m ²	47.0 76.7	37.0 60.4	37.0 60.4	125.0 204.0	58.0 94.7	48.0 78.3	58.0 94.7	50.0 81.6
Caliper inches mm	0.016 0.41	0.013 0.32	0.013 0.32	0.045 1.14	0.020 0.51	0.015 0.38	0.019 0.48	0.018 0.46
DOP Smoke Penetration 0.3 µm @ 10.5 ft/min	0.000 %	0.010 %	0.010 %	0.015 %	3.0 %	2.5 %	5.0 %	36.5 %
Air Flow Resistance mm H ₂ O @ 10.5 ft/min	52.5	86.0	86.0	86.0	15.0	16.0	15.0	5.0
Frazier Permeability ft ³ /min/ft ² @ 0.5" H ₂ O wg	-	-	-	-	-	-	-	27.0
MD Strip Tensile lb/in % elongation	7.0 2.0	4.5 1.5	4.5 1.5	8.0 1.5	8.0 1.5	7.0 1.5	8.0 1.5	6.0 1.5
Mean Pore Size µm	2.7	3.6	3.6	4.3	6.0	6.0	8.0	13.0
MD Gurley Stiffness mg	700	450	450	-	1000	900	1000	1000
Ignition Loss % loss	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Water Repellency inches H ₂ O	-	-	20.0	-	-	20.0	25.0	-

Test Methods — Hollingsworth & Vose uses the following test methods.
— See Technical Tips section for ASTM references.

Basis weight: TAPPI Method T410
Strip tensile/elongation: TAPPI Method T494
Permeability: ASTM Method F778-82
DOP smoke penetration: ASTM Method D-2986
Caliper: TAPPI Method T411
Air flow resistance: ASTM Method D-2986
Gurley stiffness: TAPPI Method T543

Coalescer Microfiberglass Filter — European Grades

COALESCERMEDIEN COALESCING MEDIA

Sorte/Grade		1322	1615	848/2	1476	1399	1477	F47W
Anwendung/ Application		Druckluftentölung/ Oil removal for compressed air	Druckluftentölung/ Oil removal for compressed air	Druckluftentölung/ Oil removal for compressed air	Druckluftentölung/ Oil removal for compressed air	Druckluftentölung/ Oil removal for compressed air	Druckluftentölung/ Oil removal for compressed air	Druckluftentölung/ Oil removal for compressed air
DEHS Efficiency 0,3 µm @ 5,3 cm/s	%	99,999	99,99	94	83	82	71	66
Flächengewicht/ Basis Weight ISO 536	g/m ²	115	70	90	86	80	84	95
Dicke/Thickness ISO 534 TD/Load 6,7N/cm ²	mm	0,58	0,38	0,45	0,47	TD/Load 1N/cm ² 0,56	0,54	TD/Load 2N/cm ² 0,71
Luftwiderstand/ Air Flow Resistance 400 cm ³ /s – A=10 cm ²	mbar	50	37	13	8,3	8	4,6	4
Luftdurchlässigkeit/ Air Permeability	1/m ² s	18	26	73	109	120	210	240
Bruchkraft/ Tensile Strength DIN 53112 T1 - längs/MD - quer/CD	N/15 mm	28	18	20	20	18	18	14
	N/15 mm	22	14	16	15	13	13	---
Porometer BS6410, ASTM F316-80 MFP	µm	2,5	3	7	8,2	9	12	15

Die Zahlenangaben sind typische Mittelwerte aus Produktionen und nicht als Spezifikation zu betrachten.
Data quoted above are typical mean test values from production runs and do not form a specification.

Other Specialty Grades Available

In addition to our standard microfiberglass grades, various grades in cellulose and laminated constructions are available from any one of several H&V locations worldwide. All of these grades are designed to maximize coalescence and achieve the low carryover rates demanded by high-quality filtration.



Established in 1843, Hollingsworth & Vose Company is a global leader in the supply of technically advanced nonwoven and specialty papers used in electronics, battery, filtration, and industrial applications. H&V drives value in customers' products by inventing next-generation materials with superior performance. The company operates manufacturing sites and research centers in the Americas, Europe, and Asia.



**Hollingsworth
& Vose**

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