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

- Carryover/efficiency
- Clean pressure drop
- Chemical compatibility
- Erosion
- Service life
- Operating temperature & 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.

- < 1.20μm MFP
- Minimum flow resistance
- Excellent chemical resistance
- Long life
- 37 to 125 lb/rlm basis weight, single caliper
- With or without laminated support scrim
- 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

Established in 1863, Hollingsworth & Vose Company is a global leader in the supply of technically advanced nonwovens and specialty papers used in electronics, battery, filtration, and industrial applications. H & V drives value to customers’ products by inventing next-generation materials with superior performance. The company operates manufacturing sites and research centers in the Americas, Europe, and Asia.
1021021 CoalescerBrochureUpdate_Layout 1  3/8/11  2:32 PM  Page 4

gravity draws them out of impaction for droplets of processes: diffusion for 1 to 20 microns. When droplets coalesce to a size of 20+ microns, the stream is filtered.

Filtration takes place of contaminants from process gases prior to atmospheric discharge.

Compressed air is cleaned for a variety of reasons: equipment protection, pollution control, oil recovery, and protection of downstream processes. Renewal of oils, lubricants, water, and particulate contaminants from gases is a growing environmental concern for industry. For example, surface active materialization 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.

**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 range in coalescence into larger droplets.
- The contaminant droplets continue to grow until they are heavy enough for gravity to separate them from the fluid gas stream then being cleansed. The contaminated airstreams via gravity from the bottom of the filter while the clean stream flows through the element.

**Applications**

- **Air-Liquid Separation**
  - Coalesced air is cleaned for a variety of reasons: equipment protection, pollution control, oil recovery, and protection of downstream processes. Renewal of oils, lubricants, water, and particulate contaminants from gases is a growing environmental concern for industry. For example, surface active materialization 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 clog up the flow of fuel.

- **Filter Construction**
  - H&V media are utilized in both pleated and wrapped configurations. These are frequently multi-layered 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.

**Table of Media Specifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Basis Weight</th>
<th>Air Permeability</th>
<th>Air Flow Resistance</th>
<th>Ignition Loss</th>
<th>Water Repellency</th>
<th>Tensile Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB-5211</td>
<td>0.010 %</td>
<td>1-2 µm</td>
<td>0.013</td>
<td>5.0%</td>
<td>7.0</td>
<td>2.0</td>
</tr>
<tr>
<td>HC-4011</td>
<td>0.015 %</td>
<td>3-5 µm</td>
<td>0.045</td>
<td>3.0%</td>
<td>125.0</td>
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<tr>
<td>HE-1021</td>
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<td>0.018</td>
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<td>-</td>
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<td>HD-2343</td>
<td>36.5 %</td>
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**Specialty Grades Available**

In addition to our standard microfiberglass grades, various grades in cobaltized and boronized 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 filtrations.