



# ***Buyer's Guide for Industrial Pleated Cartridge Filters***

## Find the Right Filter for Your Needs

Industrial cartridge filters come in a variety of configurations, media types and filtration efficiencies. Understanding the differences and options will help you explore cartridge filter options for your unit and application.

### Questions to Ask

- 1. What is the make and model of your dust collector?**  
Cartridge dust collector filters come in different sizes and configurations for different makes of collectors.
- 2. What are the dust characteristics?**  
Is dust heavy (high bulk density), abrasive, ultrafine, electrostatic, moist/hygroscopic, oily, sticky, combustible, or some combination of the above? Is dust/fume production continuous or intermittent? Different dust types and loads will require different kinds of filter media and coatings.
- 3. What are the air quality requirements?**  
Is dust toxic/hazardous? What are the Permissible Exposure Limits (PELs) that must be achieved? What level of cleanliness is required by processes or products? These factors will influence filtration efficiency requirements.
- 4. What are the environmental conditions in which the unit will run (temperature range, humidity levels, elevation, etc.)?**  
What are the temperature and humidity levels of the environment? Will filters be exposed to potentially caustic, corrosive or combustible fumes? Are sparks a concern?

## What Is a Cartridge Air Filter?

Pleated cartridge air filters are specialized filters designed to capture and contain dust, particulates, and contaminants in various industrial applications. Dust collector cartridge filters are usually made from pleated filter media arranged around a cylindrical core, maximizing the filter media surface area. This allows for a high filtration efficiency while maintaining optimal flow.



Scan or click to see the available RoboVent filters.





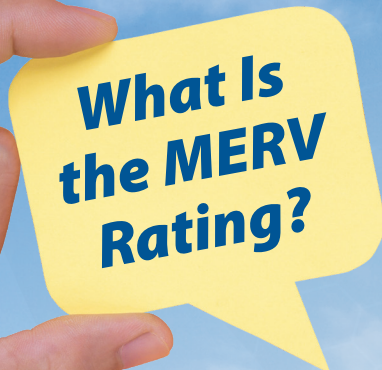
## Choosing the Right Media Type

Cartridge filters are available in a variety of media types, each tailored with specific characteristics to trap distinct types of dust particles. MERV ratings can be increased to MERV 15 or 16 for many filter types with a nanofiber or laminate coating.




Filter Type	Description	Typical MERV Ratings*	Benefits and Applications
<b>Cellulose</b>	A light-duty, general-use filter for dry particulate. Not suitable for intense industrial applications.	10-12	A versatile, general-use filter for dry particulate. Not ideal for intense industrial applications.
<b>Cellulose-Polyester Blend</b>	Blends cellulose with synthetic polyester fibers.	10-13	Offers improved longevity, tear resistance and moisture resilience. Good for moist dust†, high-humidity scenarios, heavier dust loads or heavy/abrasive dust.
<b>Spunbond Polyester</b>	A nonwoven fabric made from continuous filament polyester fibers that are bonded together.	10-15	Resists chemicals, humidity, and high temperatures for use in challenging industrial environments. Some are washable (limited times) for use with sticky/hygroscopic dust.
<b>Nanofiber</b>	Contains non-scale fibers layered atop foundational materials, such as polyester or cellulose/polyester blend.	14-16	High filtration efficiency, especially for submicron particles. Good for weld fume, ultrafine dust and toxic/hazardous dust and fumes. Most common filter media for industrial applications.
<b>PTFE-Coated</b>	PTFE (Polytetrafluoroethylene) forms a thin membrane with tiny pores that is overlaid as a coating on a cellulose, polyester or blended substrate.	14-16	High filtration, excellent moisture, chemical and abrasion resistance. Ideal for moist, oily, sticky particulate or abrasive particulate.
<b>Oleophobic Media</b>	Filter media treated to repel oil and other hydrophobic substances.	10-13	Suitable for moist or oily dust such as particulate mixed with minimal oil; extends filter life when collecting moist or oily dust.
<b>Anti-Static Filters</b>	Features special coatings or conductive fibers to inhibit static build-up and allow efficient release of static-y dust.	10-13	Ideal for combustible dust applications and for dust types that produce a lot of static, such as plastic fines, coal/carbon dust, conductive metallic particles, synthetic textiles and certain chemical powders.
<b>Flame Retardant</b>	Cellulose or blended filter media impregnated with chemicals inhibiting combustion.	10-16	Used with combustible/flammable particulate, spark-producing applications or combustible environments. Can be added as an option to many other filter media types.

\* All filters will approach MERV 16 as they develop a dust cake. To ensure adequate filtration levels across the entire lifecycle of the filter and in consideration of other factors, select a filter media with a MERV rating appropriate for the particle size, toxicity level/PEL requirements, and cleanliness requirements.

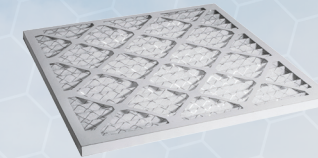
† Heavy oil mists or wet dust may require a different type of filtration.



**The Minimum Efficiency Reporting Value (MERV)** rating system was developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) to evaluate filtration efficiency for filters used in HVAC, industrial air filtration and other applications. It is a standardized scale ranging from 1 to 20 based on the filter's ability to capture particles in different size bands (3-10 microns, 1-3 microns, and 0.3 – 1 microns). Filters with a MERV rating higher than 16 are equivalent to High-Efficiency Particulate Air (HEPA) filters; the HEPA rating system is more commonly used at this level.

<b>MERV Rating &amp; Particulate Size</b>			
<b>MERV Rating</b>	<b>Group 3 (3-10 Microns)</b>	<b>Group 2 (1-3 Microns)</b>	<b>Group 1 (0.3-1 Microns)</b>
	Dust, Pollen, Large Mold Spores 	Mold Spores, Dander, Allergens 	Bacteria, Tobacco, Smoke, Smog 
<b>1-4</b>	<b>&lt; 20%</b>	—	—
<b>5</b>	<b>≥ 20%</b>	—	—
<b>6</b>	<b>≥ 35%</b>	—	—
<b>7</b>	<b>≥ 50%</b>	—	—
<b>8</b>	<b>≥ 70%</b>	<b>≥ 20%</b>	—
<b>9</b>	<b>≥ 75%</b>	<b>≥ 35%</b>	—
<b>10</b>	<b>≥ 80%</b>	<b>≥ 50%</b>	—
<b>11</b>	<b>≥ 85%</b>	<b>≥ 65%</b>	<b>≥ 20%</b>
<b>12</b>	<b>≥ 90%</b>	<b>≥ 80%</b>	<b>≥ 35%</b>
<b>13</b>	<b>≥ 90%</b>	<b>≥ 85%</b>	<b>≥ 50%</b>
<b>14</b>	<b>≥ 95%</b>	<b>≥ 90%</b>	<b>≥ 75%</b>
<b>15</b>	<b>≥ 95%</b>	<b>≥ 90%</b>	<b>≥ 85%</b>
<b>16</b>	<b>≥ 95%</b>	<b>≥ 95%</b>	<b>≥ 95%</b>

Source: [www.epa.gov/indoor-air-quality-iaq/what-merv-rating](http://www.epa.gov/indoor-air-quality-iaq/what-merv-rating)



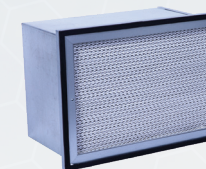
#### MERV Rating 1-10

Filters with lower MERV ratings are good for coarser particulate and general air filtration. MERV 1-4 filters may be used as pre-filters for HVAC and other applications to reduce wear on the main filters. HVAC filters are usually in the MERV 5-10 range.



#### MERV Rating 11-16

Most dust collector cartridge filters are rated between MERV 11 and MERV 16. MERV 11-13 filters are effective for larger particulate and general dust collection. MERV 15-16 filters are recommended for fine smoke and fume and highly toxic particulate.



#### High efficiency Particulate Air filter HEPA\*

- 99.97% of particles in the 0.3-micron range
- Particles that are larger or smaller than 0.3 microns are captured with a greater than 99.97% efficiency

HEPA is a type of pleated mechanical air filter. It is an acronym for "high efficiency particulate air [filter]" (as officially defined by the U.S. Dept. of Energy).

# Understanding Filtration Efficiency

Filtration efficiency refers to a filter's ability to capture and retain particles from the air passing through it. It represents the proportion of particles (of a particular size) that the filter can remove from the air. The higher the filtration efficiency, the better the filter is at capturing smaller particles.

Most dust collector cartridge filters have a MERV rating between 10-16. The higher the MERV rating, the more efficiently the filter will capture fine or submicron particulate.



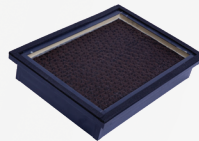
### MERV 10-13

Larger and less toxic particles, such as sawdust, larger mineral particles, and general atmospheric dust from manufacturing plants.



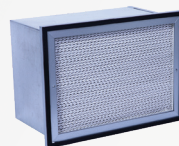
### MERV 14-16

Smaller/submicron particulate or fumes, such as mild steel weld fume, fine metal dust from grinding operations, or certain chemical powders in manufacturing.



### Activated carbon/ molecular filter

Gas-phase emissions, odor control, volatile organic compounds (VOCs), chemical vapors or aerosols.



### HEPA Filtration

Highly toxic/hazardous submicron particulate, such as stainless steel weld fume, certain chemical or pharmaceutical applications, and nanomaterial collection.

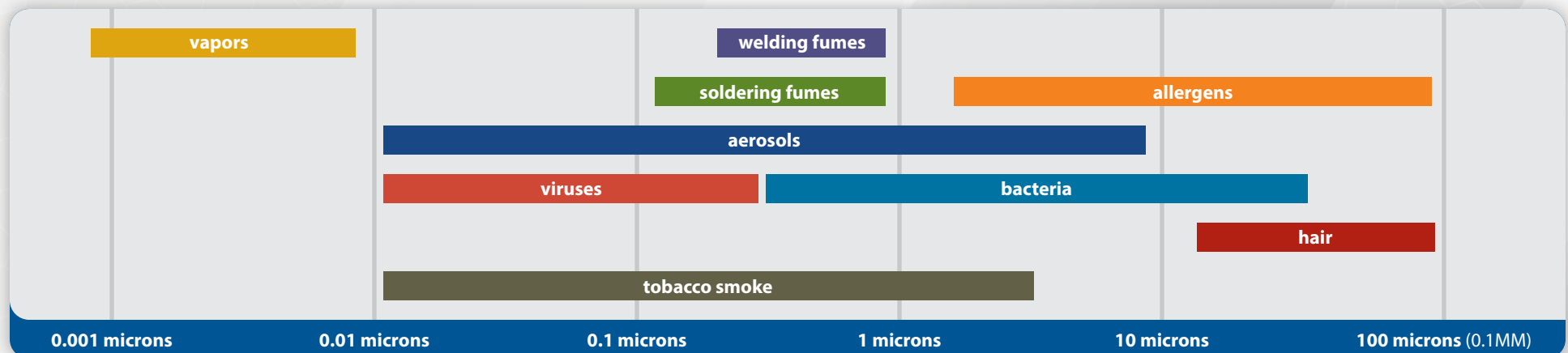
## Construction & Pleat Design

The quality of a cartridge dust collector filter directly impacts its performance and efficiency. High-quality filters not only provide superior filtration, but they also last longer, require less maintenance, and provide better overall value over their lifetime. In addition to filter media type and MERV rating, consider the following.

- **Filter construction:** Look for filters that are well-constructed with sturdy materials. This includes the filter's end caps, gaskets, and inner and outer liners. High-quality filters are built to withstand heavy use and prevent leaks past the filters.
- **Pleat design:** The pleats in a cartridge filter increase the surface area available for filtration. A high-quality filter will have a consistent and uniform pleat design, which promotes better airflow and dust release during cleaning. Look for filters with technologies designed to keep pleat spacing open and uniform.

## Particulate Size Chart

The MERV rating of the cartridge filter should be selected based on the size of the particulate you are trying to collect.



## Anatomy of a Cartridge Air Filter

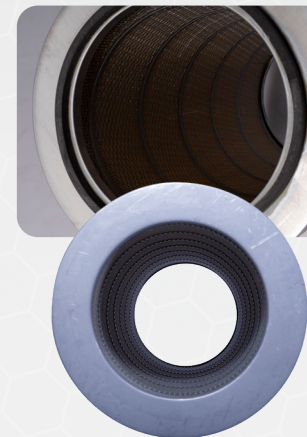
Some applications may require a filtration efficiency higher than MERV 16 or collection of gaseous fumes, vapors or aerosols. A HEPA or activated carbon after-filter may be used in conjunction with the cartridge filter for these applications.



## Cartridge Air Filter Sizing and Configuration

Different cartridge dust collectors require filters with different sizes and configurations. When buying cartridge dust collectors, it is important to make sure they are sized and configured correctly for your dust collector. When ordering aftermarket cartridge filters, record the following carefully.

Open/Open

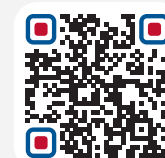


Open/ Closed with Bolt Hole



### Scan or Click the Filter Replacement Specification Sheet

Learn more about the anatomy of our filters.



**RoboVent**  
Cartridge Filter Replacement Specification Sheet

Please provide the following information, if known.  
When ordering replacement cartridge filters, please provide the following information:

Filter Part Number: \_\_\_\_\_ Customer Service: 1-800-858-3000  
 Make and Model of the Dust Collector: \_\_\_\_\_ Completed Form should be emailed to: info@robovent.com  
 Filter Media: \_\_\_\_\_ Model: \_\_\_\_\_  
 # of Holes: \_\_\_\_\_  
 Note: Please fill out one form for each unique filter.

**Dimensions & Configurations**

Filter Height: \_\_\_\_\_ Inside Diameter: \_\_\_\_\_  
 Outside Diameter: \_\_\_\_\_  
 Gasket:  Yes  No  
 Top Cap:  Round  Flat  Flange  
 Other: \_\_\_\_\_  
 Flange Dimension: \_\_\_\_\_  
 Corner Type:  Rounded  90°  
 Filter Media (select level):  
 MERV 16  MERV 18  Sprinkled PTFE  
 PTFE  Other: \_\_\_\_\_  
 Color Construction of Pleats:  
 White  Yellow  None  
 End Cap:  Top  Bottom  Closed or Both  
 End Cap Depth: \_\_\_\_\_  
 Additional Comments: \_\_\_\_\_

## PleatLock™ and Endurex® RMO: Our Bestselling Pleated Cartridge Filters

PleatLock and Endurex RMO are our top cartridge air filter brands for RoboVent dust collectors.

### Which dust collector filter is right for you?



#### PleatLock

A high-performance cartridge air filter with an innovative pleat design engineered with 35% more filter media within the cartridge to extend filter life.

- More pleats per inch for a more compact, high-performing filter and an overall smaller dust collection system.
- Excellent filtration efficiency and performance.
- Cellulose polyester blends in MERV 11, MERV15 & MERV 16.



#### Endurex RMO

A versatile pleated cartridge air filter suitable for a range of applications, including fumes, smoke, dust and other dry particulate.

- Mini-pleat design with wider pleat spacing.
- RMO support to keep optimal separation between pleats and enhance airflow.
- Available in PTFE MERV 16.

## Quality Cartridge Filters. Made in the USA

RoboVent manufactures our own high-quality cartridge filters with material primary sourced from the US. We manufacture replacement filters for most makes and models of dust collectors and can make custom cartridge filters to your specifications.

**We can custom manufacture cartridge filters for most dust collector makes and models.**

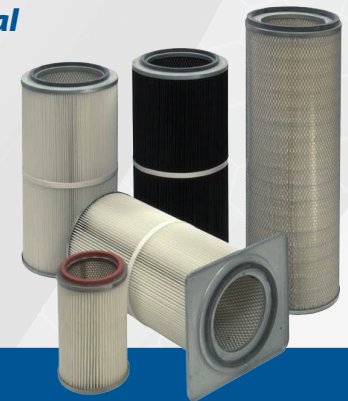
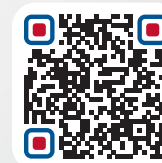
## Find the Perfect Filter for Any Application

From heavy, abrasive particulate to submicron weld fume, RoboVent has filters for virtually any application and dust type.

- Weld Fume Collection
- Metal Grinding and Cutting
- General Manufacturing
- Powder & Bulk Applications
- Woodworking
- Plastics
- Food Processing & Bulk Ingredients
- Mineral & Ore Processing
- Battery Manufacturing
- **And Much More!**

### RoboVent Industrial Air Filters

Scan or click to be directed to our filter catalog.



## Talk to the Filter Experts.

**Not sure what you need? We're here to help.**

Contact our Filters Team for assistance in selecting the right replacement cartridge filter.

 [robovent.com](https://robovent.com)

 888.ROBOVENT

 [www.robovent.com/contact-us](https://www.robovent.com/contact-us)

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# Air Filters For All Industrial Air Filtration Applications

RoboVent is your source for industrial air filters for all kinds of applications, from cartridge dust collector replacement air filters to paint booth air filters to HVAC air filters. We manufacture our own advanced dust collector cartridge air filters, which are engineered for high durability, superior filtration efficiency and a longer air filter life. Through our parent company, Nederman, and our extensive network of strategic air filtration product manufacturers, we have access to the best air filtration products for every application.

