



The Carbon Filter Specialists™
SINCE 1970

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

586.949.3610
fax 586.949.4181
dmark@dmarkinc.com

ODOR and POLLUTION CONTROL, PRODUCTS and PRICING

[WHITE TABS]

CONTENTS

Pages 1 – 3, dated 02.22.16

D-MARK

Mission Statement
General Products Catalog – A Breath of fresh air®
D-Mark, Background and History
Patents and Trademarks

ORDERING

General Ordering Information
Sales Policy and Standard Packaging
AFD.01.96 Revised 02.22.16

HVAC FILTERS - ODORGUARD® and ODORGUARD PLUS

[ORANGE/PINK TABS]

PANELS

1" and 2" Combination Filters [Panels]
Pricing: OG Panels
Pricing: OG Plus Panels

PADS

1" and 2" Pads
Triple Blend Filters and Pads
Pricing: OG Pads
Pricing: OG Plus Pads

PLEATS

1", 2" and 4" Pleats
Pricing: OG Pleats
Pricing: OG Plus Pleats

HVAC FILTERS – Continued

RING PANELS CABON

Plus [50/50] Blend Available

1" and 2" OG Ring Panels
Pricing: OG Ring Panels

RIGID CELLS

Carbon and Plus [50/50 Blend]

Box Style & with Header

Specifications

Pricing: OG Rigid Cells
 OG Plus Rigid Cell

CARBONWEB® - Granular Activated Carbon Filter Media

[GREEN TAB]

CARBONWEB®

Filters, Pads and Blankets
Priced for the specifics of the application

CarbonWeb Rolls
Pricing: CarbonWeb Rolls

CarbonWeb 90 for the Roofing Industry
Pressure Drop Information

CARBONWEB FILLED TRAY and BULK CARBON

[BLUE TAB]

CARBON FILLED TRAYS

Carbon and Adsorbent Filled Trays
Pressure Drop Information

Standard Replacement Trays for V-Bank Housings
Special Sizes, Adsorbent Filled Filters, ½" thru 2"
Pricing: Carbon Filled Trays

CARBONWEB FILLED TRAY and BULK CARBON – Continued

BULK CARBON

Bulk Carbon and Adsorbents

Specifications

Pricing: Bulk Adsorbents

APPLIANCE FILTERS

[YELLOW TAB]

APPLIANCE FILTERS

Carbon and Aluminum Mesh Filters

Pricing: OTR Microwave Ovens, Range Hoods
And Ductless Bath fans

Pricing: Aluminum Mesh Filters

AIR CLEANER FILTERS

[GRAY TAB]

AIR CLEANER FILTERS

Electronic & Mechanical Air Cleaner Filters

Filled and Honeycomb Styles

Aluminum Mesh Filters – See Appliance Filters

LEARNING CENTER – TECHNICAL INFORMATION

[FULL WHITE TAB]

LEARNING CENTER

1. D-Mark Pollutant Removal Chart
2. Activated Carbon Applications
Concept of Molecular Screening
3. CarbonWeb & OdorGuard Capacity Comparisons
4. Activated Carbon: Use and Applications



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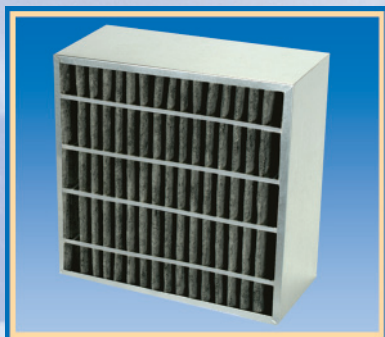
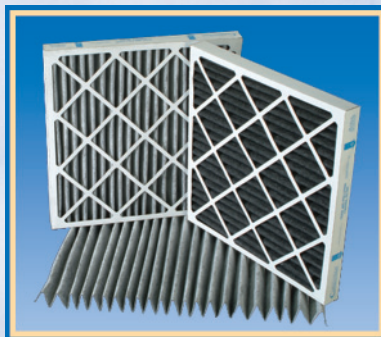
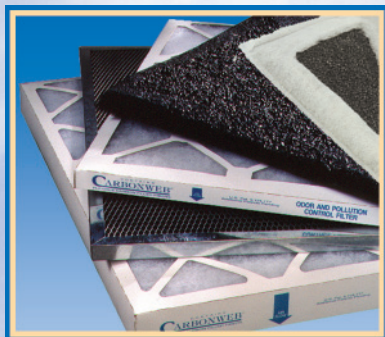
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fax 586.949.4181
dmark@dmarkinc.com

OUR MISSION:

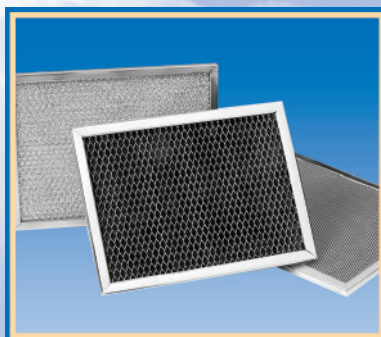
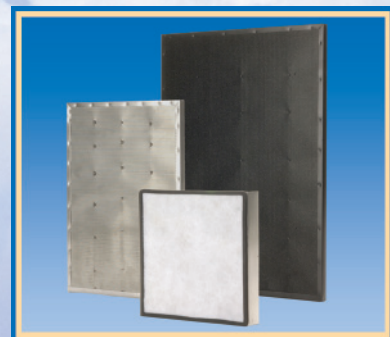
PROVIDE A COMPLETE LINE OF QUALITY,
THIN BED ADSORPTIVE PRODUCTS
FOR
ODOR AND POLLUTION CONTROL
PLUS
THE KNOWLEDGE
TO APPLY THEM EFFECTIVELY



A breath of fresh air.®



D MARK®
The Carbon Filter Specialists®
SINCE 1970



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Follow us on twitter @dmarkinc

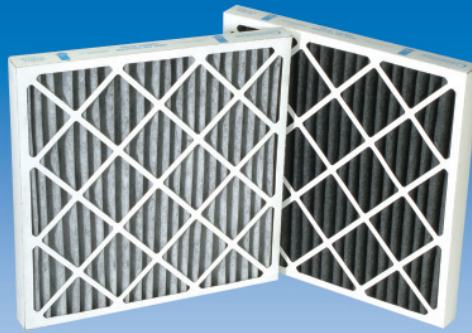
A complete line of quality thin bed "Adsorptive" products for odor and pollution control serving the HVAC, air cleaning and appliance industries.

Removes Particulates, Odors and Gaseous Pollutants • Interchangeable with existing filters • UL Approved
Designed for light, medium and heavy duty applications • All products utilize CarbonWeb, flexible carbon filled fiber Filter Media

Panels and Pads



Pleats and Inserts



Ring Panels



Panels [Die Cuts]

- GAC loadings: Grams/Sq. Ft.
2" - 200, 300
- Three-stage filtration
- Merv 6 and 7
- Blends, see OdorGuard Plus

Pleats

- GAC loadings: Grams/Sq. Ft.
1" - 25 or 100
2" - 50 or 200
4" - 100 or 300
- Two-stage filtration
- Merv 6 and 7
- Blends, see OdorGuard Plus

Ring Panels

- GAC loadings: Grams/Sq. Ft.
1" - 45
2" - 300 or 345
- Three-stage filtration
- Merv 8 and 9
- Blends, see OdorGuard Plus

For additional information, please visit www.dmarkinc.com

Pads

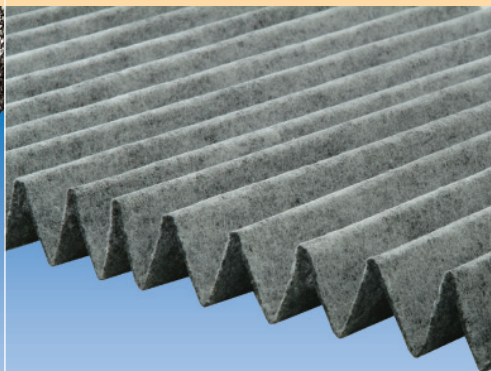
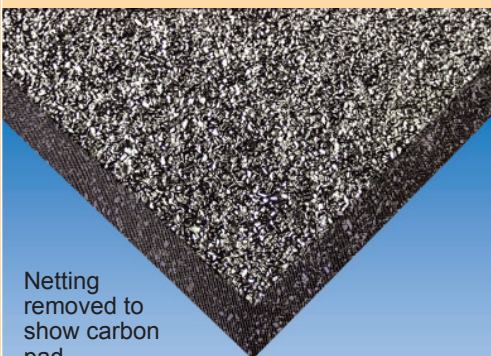
- GAC loadings:
300 or 600 Grams/Sq. Ft.
- Blends, see OdorGuard Plus
- Available in:
Pads
Blankets
Die Cuts
Metal Frames

Pleat Inserts

- Standard: OdorGuard sizes
- Special:
Pads
Blankets
Die Cuts
Metal Frames

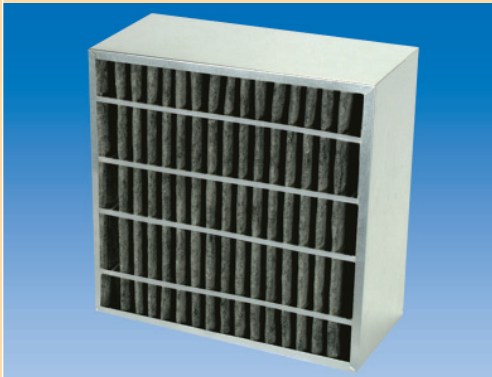
Ring Panel Links

- Features as above
- Height: to 36"
- Length: Multiple panels



Removes Particulates, Odors and Gaseous Pollutants • Interchangeable with existing filters • UL Approved
Designed for light, medium and heavy duty applications • All products utilize CarbonWeb, flexible carbon filled fiber Filter Media

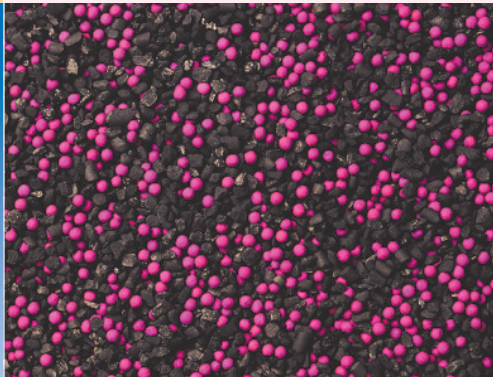
Rigid Cells



Rigid Cell [Box Style]

- Loadings:
 - GAC: up to 7.8 lbs.
 - Blends: up to 9.7 lbs.
- Merv 9
- Galvanized steel frame
- Standard HVAC sizes
- Special Sizes

Filters



50/50 Blend

- Removes Odors and Light Gases
- A 50/50 blend, by volume, of GAC and impregnated activated alumina
- Plus Filters are available in all OdorGuard designs

Filter Media



CarbonWeb® Media

- Roll Media [1/4" or 3/8"]
GAC Loadings: Grams/Sq. Ft.
20, 30, 45 or 90
- Pad Media
GAC Loadings: Grams/Sq. Ft.
300, 600, 900 or 1200
- Blankets
- Blends, see OdorGuard Plus

For additional information, please visit www.dmarkinc.com

Rigid Cell with Header

- Loadings are slightly reduced
- Other features/options unchanged



Triple Blend

- Removes Odors and Light Gases
- Equal volumes of GAC, impregnated activated alumina and zeolite
- Triple Blend filters are available in many OdorGuard designs

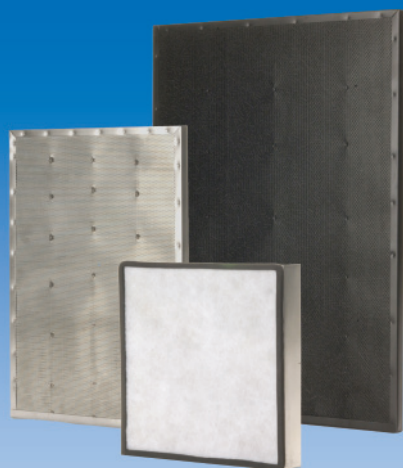


CarbonWeb® Filters

- Finished filters, 3/8" thru 4"
- Die cuts, pads, pleats or metal frames
- Pre-filters and/or after filters
- Blends, see OdorGuard Plus



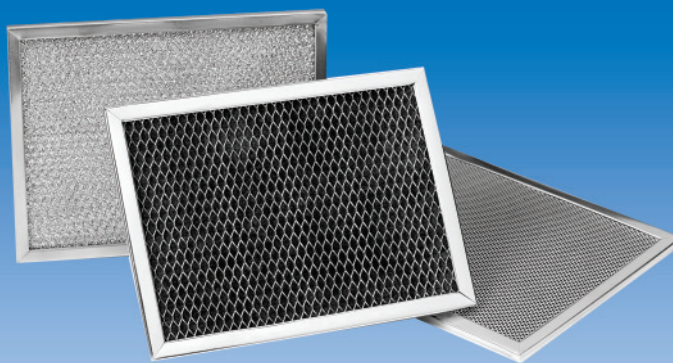
Carbon & Adsorbent Filled Trays



Filled and Honeycomb Filters for:

- Front and Side Access Housings
 - Heavy Duty Air Cleaners
 - Fume Hoods
 - Panel Applications
- Commercial Quality (60%) activated carbons
 - Impregnated alumina and blends with activated carbon
 - Thicknesses: [nominal
Standard: 1/2", 5/8", 3/4", 1", 1-1/2" and 2"
Special: Above 2", in 1/16" increments to 6"]
 - Options include:
 - Paint
 - Gaskets
 - Pre and/or after filters
 - Empty trays

Appliances - Air Cleaners



Activated Carbon, Aluminum and Honeycomb Filters for:

- Ductless and Vented
Range Hoods
Bath Fans
 - Over the Range Microwave Ovens
 - Air Cleaners
 - Electronic
 - Mechanical
- Current
 - Non-Current
 - Discontinued sizes and styles
- UL Approved

For additional information, please visit www.dmarkinc.com



Founded in 1970, D-Mark, Inc.'s original product line was activated carbon range hood

filters. From the late 1970s through 1984, D-Mark supplied virtually the entire range hood industry with their patented bonded filters.

According to D-Mark's president, James W. Kasmak, Jr., the development of the CarbonWeb® process and products has been the most interesting project. "The CarbonWeb 'effort' contained many challenges and obstacles", says Kasmak, "but it was truly a learning experience." Kasmak explained that the CarbonWeb process allows them to produce loadings from 20 to 1200 grams per square foot of granular carbon, with pressure drops low enough to allow usage in commercial, industrial, and residential air handling systems.

CarbonWeb products are sold as OEM products for appliances, air cleaners and special HVAC applications. US and International Patents have been issued on CarbonWeb Products.

The OdorGuard® product line, first offered in the spring of 1990, allowed D-Mark to



James W. Kasmak, Jr.
President of D-Mark, Inc.

expand its customer base, into the HVAC market. This product line resulted from combining pre-filters, for particulate removal, with a variety of CarbonWeb products.

For the first time, heavily loaded, interchangeable, combination, carbon filters were available that distributed carbon uniformly and did not allow fines or dust to enter the air stream. They are called by one of our distributors, "the orange filter that works". OdorGuard filters are available thru distributors, private label accounts, select mechanical and service contractors, or directly from D-Mark.

"Our mission is to provide a complete line of thin bed adsorptive products for Odor and Pollution control, plus

the knowledge to apply them effectively," says Kasmak. "We work very closely with our customers to ensure that our products meet their needs and

the needs of the ultimate user. We offer technical support and make every effort to supply a quality product to meet our customers' schedules.

Kasmak, whose background includes over 50 years of experience with activated carbon and air filtration applications, summarizes by saying "I truly enjoy the customer contacts, sales, and product development aspects of our business, whereas the administrative aspects are less enjoyable".

D-Mark's products include Panels, Pads, Pleats, Pleat Inserts, Rigid Cells, Ring Panels, CarbonWeb roll media, "Filled" Filters for V-Banks, Bulk Carbon and Filters for Appliances and Air Cleaners.

For more information about D-Mark and its products, please contact Ron Richmond or Tammy McCullough.

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D-Mark, Inc.

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
586.949.3610; fax 586.949.4181
www.dmarkinc.com
dmark@dmarkinc.com

PATENTS

The following U. S. Letters Patent cover one or more of the products manufactured by D-Mark, Inc

4,227,904	1,098,452 (CANADIAN)	4,699,681
5,124,177	1,337,550 (CANADIAN)	5,338,340
5,569,489	2,222,122 (CANADIAN)	6,878,193
	2,454,738 (CANADIAN)	
	244,272 (MEXICAN)	

FOREIGN PATENTS ISSUED

TRADEMARKS

The following are registered Trademarks of D-Mark, Inc.

**ADSORBALL, CARBONWEB,
ODORGUARD, D-MARK
A BREATH OF FRESH AIR
THE CARBON FILTER SPECIALISTS**

GENERAL ORDERING INFORMATION

(EXCEPTIONS NOTED ON INDIVIDUAL PRICING PAGES)

DELIVERY: 1 - 3 WEEKS STANDARD

SHIPPING: FEDX, ROAD TRUCK, UPS or US Mail

SHIPPING WEIGHTS WILL VARY WITH CARBON DENSITY AND LOADING.

TERMS: NET 30 DAYS (after credit approval): U.S. FUNDS

MINIMUM ORDER: \$50.00 (applies only to Commercial & Industrial filters)

RETURNS: APPROVAL MUST BE OBTAINED, RESTOCKING CHARGES MAY APPLY.

CANCELLATION: APPROVAL MUST BE OBTAINED, CANCELLATION CHARGES MAY APPLY.

STANDARD PACKAGING

ODORGUARD AND CARBONWEB PRODUCTS (QUANTITY PERMITTING):

Regular Slotted Cartons (ECT-44/275# Burst)
1" Filters, 12 per case.
2" Filters, 6 per case.
4" Filters, 3 per case.

BONDED, FILLED, BULK, AND SPECIAL PRODUCTS:

Regular Slotted Carton, Master Carton, or as
appropriate to the product and the order size.

OdorGuard® &

OdorGuard® Plus

Panels for HVAC Systems

Granular Activated Carbon and 50/50 Blend

Designed for Removal of:

- Particulates
- Gaseous Pollutants
- Odors
- Light Gases [OdorGuard Plus] Light Gases, Ammonia NH_3 • Formaldehyde CH_2O
Hydrogen Sulfide H_2S • Sulfur Dioxide SO_2

Applications:

OdorGuard

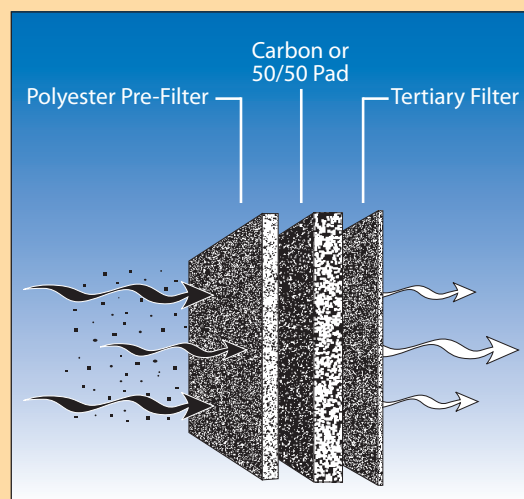
- Offices, Retail and Commercial Buildings
- Apartment and Lodging Complexes
- Industrial Plant Offices, Laboratories and Work Areas
- Industrial Buildings, Offices, Classrooms
- Disaster Remediation and Restoration
- Residential Air Quality Problems

OdorGuard Plus

- Hospitals, Convalescent Homes, Veterinarians
- Libraries, Laboratories, Wastewater Treatment
- Paper Mills, Chemical and Food Processing
- Mortuaries, Morgues, Embalmers
- Off-Gassing from Floor Coverings, Laminate Adhesives
- Pet Stores, Beauty Shops

No matter what the reason, when indoor air smells bad, people are not very happy about it. Bad air is unpleasant, distracting and potentially unhealthy. OdorGuard Filters from D-Mark can help. Their outer polyester layer removes particulates from indoor air just like conventional HVAC filters.

OdorGuard filters utilize 60% activity granular activated carbon for general odor removal. OdorGuard Plus contain equal volumes of 60% gac and activated alumina impregnated with 5% potassium permanganate to remove odors and light gases. Both products provide a fresher, more odor-free environment.



Three Stage Filtration

CarbonWeb® Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb® Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

D-MARK®
The Carbon Filter Specialists™
SINCE 1970

OdorGuard® &

OdorGuard® Plus

Panel Filters for HVAC Systems

Granular Activated Carbon and 50/50 Blend

IAQ problems are unpredictable. They appear suddenly and can be a one-time occurrence, or crop up periodically. In either event, making changes in the air handling system to deal with them is neither timely nor cost effective.

OdorGuard and OdorGuard Plus Panel filters offer a fast and effective solution. Both product

lines are interchangeable with conventional HVAC filters, available for light, medium or heavy duty applications, in standard and special sizes, and 1" and 2" thicknesses. To find out more, visit the D-Mark web site or contact D-Mark customer service and describe your odor control challenge.

Features:

- Three-stage filtration includes:
 - Primary** - 3/4" polyester media removes particulates
 - Secondary** - Patented, flexible CarbonWeb media adsorbs odors, pollutants; light gases
 - 60% activity gac or equal volumes of 60% gac and activated alumina impregnated with 5% potassium permanganate
 - Tertiary** - Media removes stray particulates or carbon
- Interchangeable with and/or replaces existing HVAC filters
- Low air resistant, non-bypass disposable filter designs offered in capacities for light, moderate or heavy duty applications
- Available in standard die-cut beverage board frames, in standard HVAC or custom sizes
- Packaged in polyethylene to preserve capacity and cleanliness
- UL tested: Class 2 approved

Specifications:

Product	GAC-Wt., Grams sq. ft. sq. meter		Nominal Thickness	Initial Resistance		Average Arrestance @500FPM	Merv Rating	Particulate Capacity (grams)	Final Resistance (in WG)
				300FPM	500FPM				
OdorGuard I	100	1075	1"	.17	.37	60-65%	6	200	1.0"
OdorGuard II	200	2150	2"	.20	.47	70-75%	7	205	1.2"
OdorGuard III	300	3225	2"	.22	.52	80-86%	7	235	1.2"
OdorGuard I Plus	125	1345	1"	.17	.37	60-65%	6	200	1.0"
OdorGuard III Plus	375	4035	2"	.22	.52	80-86%	7	235	1.2"

Data in accord with ANSI/ASHRAE 52.1 - 1992 and 52.2 test method.

Variations will occur during production, therefore this data should only be used as a guide.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or
contact D-Mark Customer Service and describe your odor control challenge.

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Mt. Clemens, MI 48043
www.dmarkinc.com

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SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com



2" COMBINATION FILTERS

REMOVES ODORS AND PARTICULATES

Standard sizes listed - Special sizes available

ODORGUARD® III HEAVY DUTY APPLICATIONS

CONTAINS 300 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCCC 02 300 01	12 x 24 x 2	12.0 lbs.	\$37.95
OGCCC 02 300 02	16 x 20 x 2	13.2 lbs.	\$43.00
OGCCC 02 300 03	16 x 25 x 2	15.6 lbs.	\$44.30
OGCCC 02 300 04	18 x 24 x 2	16.8 lbs.	\$45.40
OGCCC 02 300 05	20 x 20 x 2	15.6 lbs.	\$44.30
OGCCC 02 300 06	20 x 24 x 2	18.0 lbs.	\$48.00
OGCCC 02 300 07	20 x 25 x 2	18.6 lbs.	\$48.90
OGCCC 02 300 08	24 x 24 x 2	21.6 lbs.	\$53.50

ODORGUARD® II MEDIUM DUTY APPLICATIONS

CONTAINS 200 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCCC 02 200 01	12 x 24 x 2	10.9 lbs.	\$35.95
OGCCC 02 200 02	16 x 20 x 2	12.0 lbs.	\$41.00
OGCCC 02 200 03	16 x 25 x 2	14.4 lbs.	\$41.55
OGCCC 02 200 04	18 x 24 x 2	15.6 lbs.	\$42.40
OGCCC 02 200 05	20 x 20 x 2	14.4 lbs.	\$41.55
OGCCC 02 200 06	20 x 24 x 2	16.8 lbs.	\$44.70
OGCCC 02 200 07	20 x 25 x 2	17.4 lbs.	\$45.55
OGCCC 02 200 08	24 x 24 x 2	19.8 lbs.	\$49.60

1" COMBINATION FILTERS

REMOVES ODORS AND PARTICULATES

ODORGUARD® I LIGHT DUTY APPLICATIONS

CONTAINS 100 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCCC 01 100 01	12 x 24 x 1	11.0 lbs.	\$28.75
OGCCC 01 100 02	16 x 20 x 1	11.2 lbs.	\$30.90
OGCCC 01 100 03	16 x 25 x 1	14.6 lbs.	\$31.35
OGCCC 01 100 04	18 x 24 x 1	15.5 lbs.	\$31.90
OGCCC 01 100 05	20 x 20 x 1	14.6 lbs.	\$31.35
OGCCC 01 100 06	20 x 24 x 1	16.8 lbs.	\$33.10
OGCCC 01 100 07	20 x 25 x 1	17.0 lbs.	\$33.35
OGCCC 01 100 08	24 x 24 x 1	19.2 lbs.	\$35.65

One (1") pleated filter offers 100 grams/square foot of GAC and a lower pressure drop.

They are suitable for many 1" applications; especially as Home Furnace Filters.

SPECIAL SIZE FILTERS (CUT AND CAP) ARE PRICED INDIVIDUALLY. PLEASE CALL FOR SPECIFICS.

All filters utilize 60% activity Granular Activated Carbon.

Carbon weights will vary with carbon density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGPanels.01.06

ODORGUARD® PLUS 1" and 2" COMBINATION FILTERS

Standard sizes listed – Special sizes available

*Removes Odors, Particulates and Light Gases to include:
Ammonia • NH₃ • Formaldehyde • HCHO • Sulfur Dioxide • SO₂ and Hydrogen Sulfide • H₂S*

ODORGUARD III PLUS - 2" MEDIUM and HEAVY DUTY APPLICATIONS

375 GRAMS/SQUARE FOOT OF 60% ACTIVITY, GRANULAR ACTIVATED CARBON
AND ACTIVATED ALUMINA, WITH 5% POTASSIUM PERMANGANATE, KMnO₄

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGBCC 02 375 01	12 x 24 x 2	15.0 lbs.	\$45.15
OGBCC 02 375 02	16 x 20 x 2	16.5 lbs.	\$52.45
OGBCC 02 375 03	16 x 25 x 2	19.5 lbs.	\$53.20
OGBCC 02 375 04	18 x 24 x 2	21.0 lbs.	\$54.90
OGBCC 02 375 05	20 x 20 x 2	19.5 lbs.	\$53.20
OGBCC 02 375 06	20 x 24 x 2	22.5 lbs.	\$58.20
OGBCC 02 375 07	20 x 25 x 2	23.3 lbs.	\$59.35
OGBCC 02 375 08	24 x 24 x 2	27.0 lbs.	\$65.10

ODORGUARD I PLUS - LIGHT DUTY APPLICATIONS

125 GRAMS/SQUARE FOOT OF 60% ACTIVITY, GRANULAR ACTIVATED CARBON
AND ACTIVATED ALUMINA, WITH 5% POTASSIUM PERMANGANATE, KMnO₄

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGBCC 01 125 01	12 x 24 x 1	11.1 lbs.	\$34.20
OGBCC 01 125 02	16 x 20 x 1	12.3 lbs.	\$37.70
OGBCC 01 125 03	16 x 25 x 1	14.8 lbs.	\$37.60
OGBCC 01 125 04	18 x 24 x 1	15.7 lbs.	\$38.60
OGBCC 01 125 05	20 x 20 x 1	14.8 lbs.	\$37.60
OGBCC 01 125 06	20 x 24 x 1	17.0 lbs.	\$40.15
OGBCC 01 125 07	20 x 25 x 1	17.2 lbs.	\$40.50
OGBCC 01 125 08	24 x 24 x 1	19.5 lbs.	\$43.40

SPECIAL SIZE FILTERS (CUT and CAP) ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

Adsorbent weights will vary with density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGplusPanels.02.05

OdorGuard® &

OdorGuard® Plus

Pads for HVAC Systems

Also Available in Die Cuts or Metal Frames

Granular Activated Carbon and 50/50 Blend

Designed for Removal of:

- Particulates
- Gaseous Pollutants
- Odors
- Light Gases [OdorGuard Plus]:
Ammonia NH_3 • Formaldehyde CH_2O
Hydrogen Sulfide H_2S • Sulfur Dioxide SO_2

Applications:

OdorGuard

- Offices, Retail and Commercial Buildings
- Apartment and Lodging Complexes
- Industrial Plant Offices, Laboratories and Work Areas
- Industrial Buildings, Offices, Classrooms
- Disaster Remediation and Restoration
- Residential Air Quality Problems

OdorGuard Plus

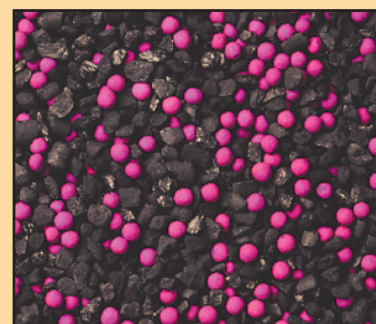
- Hospitals, Convalescent Homes, Veterinarians
- Libraries, Laboratories, Wastewater Treatment
- Paper Mills, Chemical and Food Processing
- Mortuaries, Morgues, Embalmers
- Off-Gassing from Floor Coverings, Laminate Adhesives
- Pet Stores, Beauty Shops

No matter what the reason, when indoor air smells bad, people are not very happy about it. Bad air is unpleasant, distracting and potentially unhealthy. OdorGuard Pads from D-Mark can help. Their outer polyester layer removes particulates from indoor air just like conventional HVAC filters.

OdorGuard Pads utilize 60% activity granular activated carbon for general odor removal. OdorGuard Plus contain equal volumes of 60% gac and activated alumina impregnated with 5% potassium permanganate to remove odors and light gases. Both products provide a fresher, more odor-free environment.



OdorGuard Pads containing 60% activity granular activated carbon and covered in netting.



OdorGuard Plus CarbonWeb® Media with activated carbon and impregnated alumina.

CarbonWeb® Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb® Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

D-MARK®
The Carbon Filter Specialists™
SINCE 1970

OdorGuard® &

OdorGuard® Plus

Pads for HVAC Systems

Also Available in Die Cuts or Metal Frames

Granular Activated Carbon and **50/50 Blend**

IAQ problems are unpredictable. They appear suddenly and can be a one-time occurrence, or crop up periodically. In either event, making changes in the air handling system to deal with them is neither timely nor cost effective.

OdorGuard and OdorGuard Plus Pads:

- Pads are CarbonWeb media only sewn in netting. They are designed for the removal of odors [carbon] or odors and light gases [50/50 blend].

** When used with separate pre-filters for particulate removal, the pressure drop for these pads should not increase during their lifetime. If dust or dirt are found on the pads, pre-filters should be changed, increased in efficiency, or both.

Features:

- Interchangeable with and/or replace existing HVAC pads
- Patented, flexible CarbonWeb media adsorbs odors, pollutants; light gases
- 60% activity gac or equal volumes of 60% gac and activated alumina impregnated with 5% potassium permanganate
- Standard and special sizes in 1" and 2" thicknesses
- Low air resistant, disposable for heavy duty applications
- Packaged in polyethylene to preserve capacity and cleanliness
- UL tested: Class 2 approved

Specifications:

Product Designation	Actual Thickness		
	Pad	Die Cut	Metal Frame
OdorGuard 300 / 375	3/4"+	7/8"	3/4", 1"
OdorGuard 600 / 750	1 1/2"+	1 3/4"	2"

Product Pads	Wt. in Grams per Sq. Foot of Filter Area		Nominal Thickness	Initial Resistance		Average Arrestance @500FPM	Merv Rating	Particulate Capacity (grams)	Final Resistance (in WG)
	Carbon	50/50		300FPM	500FPM				
OG 300	300	3225	1"	.24	.38	N/A	N/A	N/A	**
OG 600	600	6450	2"	.35	.82	N/A	N/A	N/A	**
OG 375 Plus	375	4035	1"	.23	.38	N/A	N/A	N/A	**
OG 750 Plus	750	8070	2"	.43	.82	N/A	N/A	N/A	**

Data in accord with ANSI/ASHRAE 52.1 - 1992 and 52.2 test method.

Variations will occur during production, therefore this data should only be used as a guide.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

130 N. Groesbeck
Mt. Clemens, MI 48043
www.dmarkinc.com

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Revised 7/24/09

D MARK
The Carbon Filter Specialists™
SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com

OdorGuard® Plus

Triple Blend Pads

Triple Blend Filters are available in Panels, Pads, Pleats, Metal Frames and Ring Panels
Air flow characteristics are similar to OdorGuard Plus Products

Triple Blend Utilizes Equal Volumes of Activated Carbon, Alumina Impregnated with Potassium Permanganate and Zeolite

Designed for Removal of:

- Light Gases, Ammonia NH_3 • Formaldehyde CH_2O
Hydrogen Sulfide H_2S • Sulfur Dioxide SO_2
- Particulates
- Odors and Gaseous Pollutants

Triple Blend Features:

- Interchangeable with HVAC filters
- Adsorbent weights of 400 to 800 grams/sq. foot (Equivalent to 4300 to 8600 grams/sq. meter)
- Low air resistance, eliminates by-pass, disposable
- Polyethylene bags preserve the original capacity
- UL tested, Class 2 approved
- Pads: Available in netting, die-cuts or metal frames



Triple Blend Media with Activated Carbon, Impregnated Alumina and Zeolite.

OdorGuard Plus Filter Applications:

- Health Care: Hospitals, Convalescent Homes, Clinics, Veterinarians
- Government Facilities: Libraries, Laboratories, Wastewater Treatment
- Industrial Plants: Paper Mills, Chemical Processing, Food Processing
- Facilities for the Deceased: Embalmers, Mortuaries, Morgues
- Remodeling/Construction: Floorcovering, Laminate Adhesives
- Retail Establishments: Pet Stores, Beauty Salons

CarbonWeb® Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb® Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.



D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or
contact D-Mark Customer Service and describe your odor control challenge.

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www.dmarkinc.com

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Revised 7/14/09



TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com

1" HEAVY DUTY ODOR REMOVAL FILTERS

CONTAINS 300 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON

Standard sizes listed - Special sizes available

ODORGUARD® 300 - 1" PADS - ODORS ONLY

DESIGNED FOR PAD HOLDING FRAMES

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCPO 01 300 01	12 x 24 x 1	20.5 lbs.	\$24.30
OGCPO 01 300 02	16 x 20 x 1	22.8 lbs.	\$26.45
OGCPO 01 300 03	16 x 25 x 1	28.5 lbs.	\$29.60
OGCPO 01 300 04	18 x 24 x 1	30.7 lbs.	\$30.60
OGCPO 01 300 05	20 x 20 x 1	28.5 lbs.	\$29.60
OGCPO 01 300 06	20 x 24 x 1	34.2 lbs.	\$32.20
OGCPO 01 300 07	20 x 25 x 1	35.6 lbs.	\$33.10
OGCPO 01 300 08	24 x 24 x 1	41.0 lbs.	\$35.65

ODORGUARD® 300 - 1" PAD IN A DIE CUT - ODORS ONLY

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCCO 01 300 01	12 x 24 x 1	29.0 lbs.	\$32.65
OGCCO 01 300 02	16 x 20 x 1	32.2 lbs.	\$36.65
OGCCO 01 300 03	16 x 25 x 1	40.3 lbs.	\$39.25
OGCCO 01 300 04	18 x 24 x 1	43.5 lbs.	\$41.55
OGCCO 01 300 05	20 x 20 x 1	40.3 lbs.	\$39.25
OGCCO 01 300 06	20 x 24 x 1	48.3 lbs.	\$42.70
OGCCO 01 300 07	20 x 25 x 1	50.0 lbs.	\$43.55
OGCCO 01 300 08	24 x 24 x 1	58.0 lbs.	\$47.75

SPECIAL SIZE FILTERS (CUT AND CAP) ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

All filters utilize 60% activity Granular Activated Carbon.
Carbon weights will vary with carbon density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGPads.01.06

2" HEAVY DUTY ODOR REMOVAL FILTERS

CONTAINS 600 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON

Standard sizes listed - Special sizes available

ODORGUARD® 600 - 2" PADS - ODORS ONLY

DESIGNED FOR PAD HOLDING FRAMES

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCPO 02 600 01	12 x 24 x 2	20.5 lbs.	\$39.80
OGCPO 02 600 02	16 x 20 x 2	22.8 lbs.	\$43.85
OGCPO 02 600 03	16 x 25 x 2	28.5 lbs.	\$49.45
OGCPO 02 600 04	18 x 24 x 2	30.7 lbs.	\$50.90
OGCPO 02 600 05	20 x 20 x 2	28.5 lbs.	\$49.45
OGCPO 02 600 06	20 x 24 x 2	34.2 lbs.	\$54.65
OGCPO 02 600 07	20 x 25 x 2	35.6 lbs.	\$56.10
OGCPO 02 600 08	24 x 24 x 2	41.0 lbs.	\$61.40

ODORGUARD® 600 - 2" PAD IN A DIE CUT - ODORS ONLY

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGCCO 02 600 01	12 x 24 x 2	25.0 lbs.	\$46.30
OGCCO 02 600 02	16 x 20 x 2	28.4 lbs.	\$52.05
OGCCO 02 600 03	16 x 25 x 2	35.7 lbs.	\$57.65
OGCCO 02 600 04	18 x 24 x 2	38.9 lbs.	\$59.80
OGCCO 02 600 05	20 x 20 x 2	35.7 lbs.	\$57.65
OGCCO 02 600 06	20 x 24 x 2	42.1 lbs.	\$63.55
OGCCO 02 600 07	20 x 25 x 2	44.1 lbs.	\$65.10
OGCCO 02 600 08	24 x 24 x 2	50.0 lbs.	\$72.10

SPECIAL SIZE FILTERS (CUT AND CAP) ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

All filters utilize 60% activity Granular Activated Carbon.
Carbon weights will vary with carbon density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGPads.02.06

ODORGUARD® 375 PLUS

1" HEAVY DUTY ODOR and LIGHT GAS REMOVAL FILTERS

Standard sizes listed – Special sizes available

Removes Odors, Particulates and Light Gases to include:
Ammonia • NH₃ • Formaldehyde • HCHO • Sulfur Dioxide • SO₂ and Hydrogen Sulfide • H₂S

ODORGUARD 375 PLUS - 1" PAD

DESIGNED FOR PAD HOLDING FRAMES

375 GRAMS/SQUARE FOOT OF 60% ACTIVITY, GRANULAR ACTIVATED CARBON
AND ACTIVATED ALUMINA, WITH 5% POTASSIUM PERMANGANATE, KMnO₄

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGBPO 01 375 01	12 x 24 x 1	25.6 lbs.	\$32.80
OGBPO 01 375 02	16 x 20 x 1	28.5 lbs.	\$37.80
OGBPO 01 375 03	16 x 25 x 1	35.6 lbs.	\$38.50
OGBPO 01 375 04	18 x 24 x 1	38.4 lbs.	\$40.10
OGBPO 01 375 05	20 x 20 x 1	35.6 lbs.	\$38.50
OGBPO 01 375 06	20 x 24 x 1	42.8 lbs.	\$42.40
OGBPO 01 375 07	20 x 25 x 1	44.5 lbs.	\$43.40
OGBPO 01 375 08	24 x 24 x 1	51.3 lbs.	\$47.30

ODORGUARD 375 PLUS - 1" PAD IN A DIE CUT

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGBCO 01 375 01	12 x 24 x 1	36.1 lbs.	\$40.10
OGBCO 01 375 02	16 x 20 x 1	40.2 lbs.	\$46.45
OGBCO 01 375 03	16 x 25 x 1	50.2 lbs.	\$46.60
OGBCO 01 375 04	18 x 24 x 1	54.1 lbs.	\$48.45
OGBCO 01 375 05	20 x 20 x 1	50.2 lbs.	\$46.60
OGBCO 01 375 06	20 x 24 x 1	60.4 lbs.	\$51.45
OGBCO 01 375 07	20 x 25 x 1	62.8 lbs.	\$52.60
OGBCO 01 375 08	24 x 24 x 1	70.0 lbs.	\$57.20

SPECIAL SIZE FILTERS (CUT and CAP) ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

Adsorbent weights will vary with density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGplusPads.03.05

ODORGUARD® 750 PLUS

2" HEAVY DUTY ODOR and LIGHT GAS REMOVAL FILTERS

Standard sizes listed – Special sizes available

Removes Odors, Particulates and Light Gases to include:

Ammonia • NH₃ • Formaldehyde • HCHO • Sulfur Dioxide • SO₂ and Hydrogen Sulfide • H₂S

ODORGUARD 750 PLUS - 2" PAD

DESIGNED FOR PAD HOLDING FRAMES

750 GRAMS/SQUARE FOOT OF 60% ACTIVITY, GRANULAR ACTIVATED CARBON
AND ACTIVATED ALUMINA, WITH 5% POTASSIUM PERMANGANATE, KMnO₄

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGBPO 02 750 01	12 x 24 x 2	25.6 lbs.	\$53.75
OGBPO 02 750 02	16 x 20 x 2	28.5 lbs.	\$62.70
OGBPO 02 750 03	16 x 25 x 2	35.6 lbs.	\$64.35
OGBPO 02 750 04	18 x 24 x 2	38.4 lbs.	\$66.65
OGBPO 02 750 05	20 x 20 x 2	35.6 lbs.	\$64.35
OGBPO 02 750 06	20 x 24 x 2	42.8 lbs.	\$71.50
OGBPO 02 750 07	20 x 25 x 2	44.5 lbs.	\$73.65
OGBPO 02 750 08	24 x 24 x 2	51.3 lbs.	\$81.40

ODORGUARD 750 PLUS - 2" PAD IN A DIE CUT

PART NUMBER	NOMINAL SIZE	WEIGHT/CASE	LIST PRICE/FILTER
OGBCO 02 750 01	12 x 24 x 2	32.1 lbs.	\$60.20
OGBCO 02 750 02	16 x 20 x 2	44.2 lbs.	\$70.90
OGBCO 02 750 03	16 x 25 x 2	45.2 lbs.	\$72.55
OGBCO 02 750 04	18 x 24 x 2	48.1 lbs.	\$75.55
OGBCO 02 750 05	20 x 20 x 2	45.2 lbs.	\$72.55
OGBCO 02 750 06	20 x 24 x 2	54.4 lbs.	\$80.40
OGBCO 02 750 07	20 x 25 x 2	56.8 lbs.	\$82.70
OGBCO 02 750 08	24 x 24 x 2	62.0 lbs.	\$92.20

SPECIAL SIZE FILTERS (CUT and CAP) ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

Adsorbent weights will vary with density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGplusPads.04.05

OdorGuard® &

OdorGuard® Plus

Pleated Filters for HVAC Systems

Granular Activated Carbon and 50/50 Blend

Designed for Removal of:

- Particulates
- Gaseous Pollutants
- Odors
- Light Gases [OdorGuard Plus]

Applications:

OdorGuard

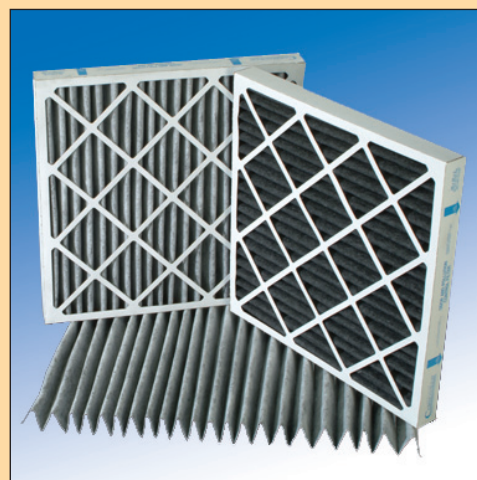
- Offices, Retail and Commercial Buildings
- Apartment and Lodging Complexes
- Industrial Plant Offices, Laboratories and Work Areas
- Industrial Buildings, Offices, Classrooms
- Disaster Remediation and Restoration
- Residential Air Quality Problems

OdorGuard Plus

- Hospitals, Convalescent Homes, Veterinarians
- Libraries, Laboratories, Wastewater Treatment
- Paper Mills, Chemical and Food Processing
- Mortuaries, Morgues, Embalmers
- Off-Gassing from Floor Coverings, Laminate Adhesives
- Pet Stores, Beauty Shops

No matter what the reason, when indoor air smells bad, people are not very happy about it. Bad air is unpleasant, distracting and potentially unhealthy. OdorGuard Filters from D-Mark can help. Their outer polyester layer removes particulates from indoor air just like conventional HVAC filters.

OdorGuard filters utilize 60% activity granular activated carbon for general odor removal. OdorGuard Plus contain equal volumes of 60% gac and activated alumina impregnated with 5% potassium permanganate to remove odors and light gases. Both products provide a fresher, more odor-free environment.



OdorGuard and OdorGuard Plus Pleated Filters utilize CarbonWeb Filter Media.

CarbonWeb® Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb® Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

D-MARK®
The Carbon Filter Specialists™
SINCE 1970

OdorGuard® & OdorGuard® Plus

Pleated Filters for HVAC Systems Granular Activated Carbon and 50/50 Blend

IAQ problems are unpredictable. They appear suddenly and can be a one-time occurrence, or crop up periodically. In either event, making changes in the air handling system to deal with them is neither timely nor cost effective.

OdorGuard and OdorGuard Plus Pleated filters offer a fast and effective solution. Both product

lines are interchangeable with conventional HVAC filters, available for light, medium or heavy duty applications, in standard and special sizes, and 1", 2" and 4" thicknesses. To find out more, visit the D-Mark web site or contact D-Mark customer service and describe your odor control challenge.

Features:

- Interchangeable with and/or replace existing HVAC filters
- Patented, flexible CarbonWeb media adsorbs odors, pollutants; light gases
- 60% activity gac or equal volumes of 60% gac and activated alumina impregnated with 5% potassium permanganate
- Standard and special sizes in 1", 2" and 4" thicknesses
- Low air resistant, disposable for light, medium or heavy duty applications
- Packaged in polyethylene to preserve capacity and cleanliness
- UL tested: Class 2 approved

Pleated inserts for both OdorGuard and OdorGuard Plus are available.

Specifications: Test data for OdorGuard and OdorGuard Plus

Product	Wt. in Grams per Sq. Foot of Filter Area		Nominal Thickness	Initial Resistance		Average Arrestance @500FPM	Merv Rating	Particulate Capacity (grams)	Final Resistance (in WG)
	Carbon	50/50		300FPM	500FPM				
OGCXC-01-100	100	125	1"	.21	.41	75%+	7	98	1.5
OGCXC-02-200	200	250	2"	.16	.36	75%+	7	141	1.5
OGCXC-04-300	300	375	4"	.15	.30	75%+	7	287	1.5
Light Loadings									
OGCXC-01-025	25	N/A	1"	.14	.32	75%+	6	58	1.5
OGCXC-02-050	50	N/A	2"	.14	.30	75%+	6	72	1.5
OGCXC-04-100	100	N/A	4"	.15	.36	75%+	6	138	1.5

Data in accord with ANSI/ASHRAE 52.1 - 1992 and 52.2 test method.

Variations will occur during production, therefore this data should only be used as a guide.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

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fax: 586.949.4181
dmark@dmarkinc.com



ODORGUARD® PLEATED FILTERS

2" PLEATED CARTRIDGES

MEDIUM DUTY APPLICATIONS - 200 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGCXC 02 200 01	12 x 24 x 2	6 pcs.	9.9 lbs.	\$26.55
OGCXC 02 200 02	16 x 20 x 2	6 pcs.	11.0 lbs.	\$27.60
OGCXC 02 200 03	16 x 25 x 2	6 pcs.	14.5 lbs.	\$31.00
OGCXC 02 200 04	18 x 24 x 2	6 pcs.	15.5 lbs.	\$33.00
OGCXC 02 200 05	20 x 20 x 2	6 pcs.	13.9 lbs.	\$34.75
OGCXC 02 200 06	20 x 24 x 2	6 pcs.	15.6 lbs.	\$35.00
OGCXC 02 200 07	20 x 25 x 2	6 pcs.	16.3 lbs.	\$35.50
OGCXC 02 200 08	24 x 24 x 2	6 pcs.	18.5 lbs.	\$36.60

1" PLEATED CARTRIDGES

LIGHT DUTY APPLICATIONS - 100 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGCXC 01 100 01	12 x 24 x 1	12 pcs.	8.5 lbs.	\$22.85
OGCXC 01 100 02	16 x 20 x 1	12 pcs.	9.5 lbs.	\$23.60
OGCXC 01 100 03	16 x 25 x 1	12 pcs.	11.0 lbs.	\$25.65
OGCXC 01 100 04	18 x 24 x 1	12 pcs.	12.0 lbs.	\$27.00
OGCXC 01 100 05	20 x 20 x 1	12 pcs.	11.5 lbs.	\$26.10
OGCXC 01 100 06	20 x 24 x 1	12 pcs.	12.3 lbs.	\$27.60
OGCXC 01 100 07	20 x 25 x 1	12 pcs.	12.5 lbs.	\$28.30
OGCXC 01 100 08	24 x 24 x 1	12 pcs.	14.0 lbs.	\$29.25

4" PLEATED CARTRIDGES

HEAVY DUTY APPLICATIONS - 300 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGCXC 04 300 01	12 x 24 x 4	3 pcs.	7.9 lbs.	\$29.70
OGCXC 04 300 02	16 x 20 x 4	3 pcs.	8.5 lbs.	\$31.60
OGCXC 04 300 03	16 x 25 x 4	3 pcs.	10.0 lbs.	\$35.90
OGCXC 04 300 04	18 x 24 x 4	3 pcs.	11.5 lbs.	\$39.15
OGCXC 04 300 05	20 x 20 x 4	3 pcs.	12.2 lbs.	\$36.30
OGCXC 04 300 06	20 x 24 x 4	3 pcs.	15.5 lbs.	\$40.60
OGCXC 04 300 07	20 x 25 x 4	3 pcs.	16.5 lbs.	\$41.70
OGCXC 04 300 08	24 x 24 x 4	3 pcs.	19.0 lbs.	\$46.00

SPECIAL SIZE FILTERS (CUT AND CAP) ARE PRICED INDIVIDUALLY. PLEASE CALL FOR SPECIFICS.

All filters utilize 60% activity Granular Activated Carbon.

Carbon weights will vary with carbon density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGPleats.01.07

ODORGUARD® PLEATED FILTERS

2" PLEATED CARTRIDGES

LIGHT DUTY APPLICATIONS - 50 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGCXC 02 050 01	12 x 24 x 2	6 pcs.	6.5 lbs.	\$14.45
OGCXC 02 050 02	16 x 20 x 2	6 pcs.	6.9 lbs.	\$14.70
OGCXC 02 050 03	16 x 25 x 2	6 pcs.	7.3 lbs.	\$15.55
OGCXC 02 050 04	18 x 24 x 2	6 pcs.	7.8 lbs.	\$16.05
OGCXC 02 050 05	20 x 20 x 2	6 pcs.	8.1 lbs.	\$15.70
OGCXC 02 050 06	20 x 24 x 2	6 pcs.	8.9 lbs.	\$16.45
OGCXC 02 050 07	20 x 25 x 2	6 pcs.	9.5 lbs.	\$16.70
OGCXC 02 050 08	24 x 24 x 2	6 pcs.	10.4 lbs.	\$17.10

1" PLEATED CARTRIDGES

LIGHT DUTY APPLICATIONS - 25 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGCXC 01 025 01	12 x 24 x 1	12 pcs.	6.7 lbs.	\$13.10
OGCXC 01 025 02	16 x 20 x 1	12 pcs.	7.1 lbs.	\$13.35
OGCXC 01 025 03	16 x 25 x 1	12 pcs.	8.4 lbs.	\$13.75
OGCXC 01 025 04	18 x 24 x 1	12 pcs.	9.2 lbs.	\$13.90
OGCXC 01 025 05	20 x 20 x 1	12 pcs.	10.1 lbs.	\$13.80
OGCXC 01 025 06	20 x 24 x 1	12 pcs.	12.2 lbs.	\$14.20
OGCXC 01 025 07	20 x 25 x 1	12 pcs.	12.5 lbs.	\$14.30
OGCXC 01 025 08	24 x 24 x 1	12 pcs.	13.4 lbs.	\$14.60

4" PLEATED CARTRIDGES

LIGHT DUTY APPLICATIONS - 100 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGCXC 04 100 01	12 x 24 x 4	3 pcs.	4.5 lbs.	\$23.10
OGCXC 04 100 02	16 x 20 x 4	3 pcs.	5.0 lbs.	\$23.90
OGCXC 04 100 03	16 x 25 x 4	3 pcs.	5.5 lbs.	\$26.25
OGCXC 04 100 04	18 x 24 x 4	3 pcs.	6.0 lbs.	\$27.65
OGCXC 04 100 05	20 x 20 x 4	3 pcs.	6.5 lbs.	\$26.50
OGCXC 04 100 06	20 x 24 x 4	3 pcs.	7.0 lbs.	\$27.80
OGCXC 04 100 07	20 x 25 x 4	3 pcs.	7.5 lbs.	\$28.35
OGCXC 04 100 08	24 x 24 x 4	3 pcs.	8.0 lbs.	\$30.55

SPECIAL SIZE FILTERS (CUT AND CAP) ARE PRICED INDIVIDUALLY. PLEASE CALL FOR SPECIFICS.

All filters utilize 60% activity Granular Activated Carbon.

Carbon weights will vary with carbon density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGPleats.02.07

ODORGUARD® PLUS PLEATED FILTERS

Removes Odors, Particulates Removes Odors, Particulates, and Light Gases, to include:
Ammonia (NH₃), Formaldehyde (HCHO), Sulfur Dioxide (SO₂), and Hydrogen Sulfide (H₂S)
Adsorbents comprised of equal volumes of 60% activity granular activated carbon and activated alumina with
5% potassium permanganate, KMnO₄.

2" PLEATED CARTRIDGES

MEDIUM DUTY APPLICATIONS - 250 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGBXC 02 250 01	12 x 24 x 2	6 pcs.	12.8 lbs.	\$38.30
OGBXC 02 250 02	16 x 20 x 2	6 pcs.	14.3 lbs.	\$39.95
OGBXC 02 250 03	16 x 25 x 2	6 pcs.	18.8 lbs.	\$46.10
OGBXC 02 250 04	18 x 24 x 2	6 pcs.	20.1 lbs.	\$51.45
OGBXC 02 250 05	20 x 20 x 2	6 pcs.	18.0 lbs.	\$47.50
OGBXC 02 250 06	20 x 24 x 2	6 pcs.	20.2 lbs.	\$53.20
OGBXC 02 250 07	20 x 25 x 2	6 pcs.	21.1 lbs.	\$54.70
OGBXC 02 250 08	24 x 24 x 2	6 pcs.	24.0 lbs.	\$57.20

1" PLEATED CARTRIDGES

LIGHT DUTY APPLICATIONS - 125 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGBXC 01 125 01	12 x 24 x 1	12 pcs.	11.0 lbs.	\$24.55
OGBXC 01 125 02	16 x 20 x 1	12 pcs.	12.3 lbs.	\$26.00
OGBXC 01 125 03	16 x 25 x 1	12 pcs.	14.3 lbs.	\$30.10
OGBXC 01 125 04	18 x 24 x 1	12 pcs.	15.6 lbs.	\$32.10
OGBXC 01 125 05	20 x 20 x 1	12 pcs.	14.9 lbs.	\$30.15
OGBXC 01 125 06	20 x 24 x 1	12 pcs.	15.9 lbs.	\$33.00
OGBXC 01 125 07	20 x 25 x 1	12 pcs.	16.2 lbs.	\$34.60
OGBXC 01 125 08	24 x 24 x 1	12 pcs.	18.2 lbs.	\$36.60

4" PLEATED CARTRIDGES

LIGHT DUTY APPLICATIONS - 375 GRAMS/SQUARE FOOT OF FILTER AREA

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE PER FILTER
OGBXC 04 375 01	12 x 24 x 4	3 pcs.	9.4 lbs.	\$52.40
OGBXC 04 375 02	16 x 20 x 4	3 pcs.	10.2 lbs.	\$56.40
OGBXC 04 375 03	16 x 25 x 4	3 pcs.	12.0 lbs.	\$66.20
OGBXC 04 375 04	18 x 24 x 4	3 pcs.	13.8 lbs.	\$72.70
OGBXC 04 375 05	20 x 20 x 4	3 pcs.	14.6 lbs.	\$67.00
OGBXC 04 375 06	20 x 24 x 4	3 pcs.	18.6 lbs.	\$76.15
OGBXC 04 375 07	20 x 25 x 4	3 pcs.	19.8 lbs.	\$78.80
OGBXC 04 375 08	24 x 24 x 4	3 pcs.	22.8 lbs.	\$87.95

SPECIAL SIZE FILTERS (CUT AND CAP) ARE PRICED INDIVIDUALLY. PLEASE CALL FOR SPECIFICS.

Adsorbent weights will vary with density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGplusPleats.03.07

OdorGuard®

Ring Panel Filters

Granular Activated Carbon Filters For HVAC Systems

Designed for Removal of:

- Particulates
- Gaseous Pollutants
- Odors

Ring Panel Applications:

- Offices, Retail and Commercial Buildings
- Apartment and Lodging Complexes
- Industrial Plant Offices, Laboratories and Work Areas
- Institutional Buildings, Offices, Classrooms
- Disaster Remediation and Restoration
- Residential Air Quality Problems



No matter what the reason, when indoor air smells bad, people are not very happy about it. Bad air is unpleasant, distracting and potentially unhealthy. OdorGuard Filters from D-Mark can help. Their outer polyester layer removes particulates from indoor air just like conventional

HVAC filters. But inside is a core of CarbonWeb® filter media containing 60% activity granular activated carbon which removes odors and gaseous pollutants as well. The result is a fresher, more odor-free environment.

CarbonWeb® Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb® Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

D MARK®
The Carbon Filter Specialists™
SINCE 1970

OdorGuard® Ring Panel Filters

Granular Activated Carbon Filters For HVAC Systems

IAQ problems are unpredictable. They can appear suddenly and be a one-time occurrence, or crop up periodically. In either event, making changes in the air handling system to deal with them is not timely or cost effective.

OdorGuard Ring Panel filters offer a fast and effective solution to many of these problems,

and can directly replace other Ring Panel products and many HVAC filters. They offer three-stage filtration, which removes particulates as well as odors. The edges are self sealing and an internal wire "ring" supports the filter. They are offered in standard and custom sizes in 1" and 2" thicknesses and as links.

Features:

- Interchangeable with other ring panel products and many HVAC filters
- Edges are self sealing
- Low air resistance, non-bypass, disposable filter
- UL tested; Class 2 approvals
- Three-stage filtration includes:
 - Primary** - 3/4" polyester media removes particulates
 - Secondary** - Patented CarbonWeb media "adsorbs" odors, pollutants
 - Tertiary** - Media removes stray particulates or carbon
- Granular Carbon loadings of 45, 300 and 345 grams/square foot (Equivalent to 485, 3225 and 3710 grams/square meter)
- Alternative adsorptive pads can be substituted for carbon. They include: OdorGuard Plus, carbon blended with impregnated alumina; 100% impregnated alumina; or triple blend, which utilizes an equal volume blend of zeolite, impregnated alumina and carbon.
- Available in standard and special sizes, in 1" and 2" thicknesses
- Links in both standard and custom sizes

Specifications:

	Product	GAC-Wt., Grams sq. ft. sq. meter		Nominal Thickness	Initial Resistance		Average Arrestance @500FPM	Merv Rating	Particulate Capacity (grams)	Final Resistance (in WG)
					300FPM	500FPM				
Light Duty	OGCRC-01-045	45	485	1"	.14	.30	80-85%	8	200	1.0"
Medium Duty	OGCRC-02-300	300	3225	2"	.23	.55	80-85%	8	200	1.2"
Heavy Duty	OGCRC-02-345	345	3710	2"	.31	.65	85%+	9	200	1.2"

Data in accord with ANSI/ASHRAE 52.1 - 1992 and 52.2 test method.

Variations will occur during production, therefore this data should only be used as a guide.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or
contact D-Mark Customer Service and describe your odor control challenge.

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

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Revised 7/14/09

D MARK
The Carbon Filter Specialists™
SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com

ODORGUARD® RING PANELS

Removes Odors and Particulates - Special Sizes and Links Available

LIGHT DUTY APPLICATIONS

CONTAINS 45 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON, APPROX. 1" THICK

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE
OGCRC 01 045 01	12 x 24 x 1	12 pcs.	17.2 lbs.	\$11.10
OGCRC 01 045 02	16 x 20 x 1	12 pcs.	19.8 lbs.	\$12.80
OGCRC 01 045 03	16 x 25 x 1	12 pcs.	23.8 lbs.	\$14.40
OGCRC 01 045 04	18 x 24 x 1	12 pcs.	25.0 lbs.	\$14.85
OGCRC 01 045 05	20 x 20 x 1	12 pcs.	23.5 lbs.	\$13.85
OGCRC 01 045 06	20 x 24 x 1	12 pcs.	26.9 lbs.	\$15.35
OGCRC 01 045 06	20 x 25 x 1	12 pcs.	27.5 lbs.	\$15.70
OGCRC 01 045 08	24 x 24 x 1	12 pcs.	31.2 lbs.	\$17.00

MEDIUM TO HEAVY DUTY APPLICATIONS

CONTAINS 300 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON, APPROX. 2" THICK

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE
OGCRC 02 300 01	12 x 24 x 2	6 pcs.	15.6 lbs.	\$32.45
OGCRC 02 300 02	16 x 20 x 2	6 pcs.	18.2 lbs.	\$32.70
OGCRC 02 300 03	16 x 25 x 2	6 pcs.	21.1 lbs.	\$35.55
OGCRC 02 300 04	18 x 24 x 2	6 pcs.	22.0 lbs.	\$37.25
OGCRC 02 300 05	20 x 20 x 2	6 pcs.	20.9 lbs.	\$36.00
OGCRC 02 300 06	20 x 24 x 2	6 pcs.	23.5 lbs.	\$39.20
OGCRC 02 300 07	20 x 25 x 2	6 pcs.	24.1 lbs.	\$39.70
OGCRC 02 300 08	24 x 24 x 2	6 pcs.	27.3 lbs.	\$43.40

HEAVY DUTY APPLICATIONS

CONTAINS 345 GRAMS/SQUARE FOOT OF GRANULAR ACTIVATED CARBON, APPROX. 2" THICK

PART NUMBER	NOMINAL SIZE	FILTERS/CASE	WEIGHT/CASE	LIST PRICE
OGCRC 02 345 01	12 x 24 x 2	6 pcs.	17.5 lbs.	\$34.25
OGCRC 02 345 02	16 x 20 x 2	6 pcs.	20.1 lbs.	\$36.90
OGCRC 02 345 03	16 x 25 x 2	6 pcs.	23.3 lbs.	\$40.75
OGCRC 02 345 04	18 x 24 x 2	6 pcs.	24.4 lbs.	\$42.40
OGCRC 02 345 05	20 x 20 x 2	6 pcs.	23.1 lbs.	\$41.20
OGCRC 02 345 06	20 x 24 x 2	6 pcs.	26.0 lbs.	\$44.60
OGCRC 02 345 07	20 x 25 x 2	6 pcs.	26.8 lbs.	\$45.30
OGCRC 02 345 08	24 x 24 x 2	6 pcs.	30.2 lbs.	\$49.20

All filters utilize 60% activity Granular Activated Carbon.

Carbon weights will vary with carbon density and process loading.

Pricing for Links of Standard Sizes, equals the number of Links X the Individual Price.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGRingPanels.01.08

OdorGuard[®] Rigid Cell Filters

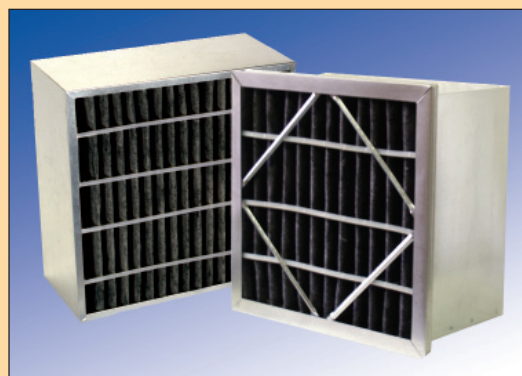
Granular Activated Carbon Filters

Designed for Removal of:

- Particulates
- Gaseous Pollutants
- Odors

OdorGuard Rigid Cell Applications:

- Airports
- Hospitals
- Industrial Plant Offices and Laboratories
- Microelectronic Component Assembly
- Museums
- Office, Retail and Commercial Buildings



No matter what the reason, when indoor air smells bad, people are not very happy about it. Bad air is unpleasant, distracting and potentially unhealthy. OdorGuard Filters from D-Mark can help. OdorGuard Rigid Cell filters use our CarbonWeb[®] filter media containing 60% activity granular activated carbon which

removes odors and gaseous pollution or a CarbonWeb filter media containing equal volumes of 60% activated carbon and activated alumina impregnated with 5% potassium permanganate (KMnO₄) to remove odors and light gases. Either loading will provide a fresher, more odor free environment.

CarbonWeb[®] Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb[®] Filter Media. Using a patented process, media for general odor control is loaded with granular activated carbon. Media for the control of light gases is loaded with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

D MARK[®]
The Carbon Filter Specialists[™]
SINCE 1970

OdorGuard® Rigid Cell Filters

Extended Surface Self-Supported Rigid Box Filter

IAQ problems are unpredictable. They appear suddenly and can be a one-time occurrence, or crop up periodically. In either event, making changes in the air handling system to deal with them is not timely or cost effective.

The solution is OdorGuard filters. Our Extended Surface Rigid Cell filters provide high

efficiency removal of multiple contaminants for a variety of applications from museums to semiconductor facilities.

To find out more, visit the D-Mark website or contact D-Mark customer service and describe your odor control challenge.

Features:

- Interchangeable with and/or replace existing HVAC filters
- Low static pressure that remains low for the life of the filter
- Uniform carbon distribution
- Available with or without a header
- Special sizes available
- Granular activated or a 50/50 blend of carbon and activated alumina impregnated with 5% Potassium Permanganate (KMnO₄) for odors and light gases
- Packed in polyethylene to preserve capacity and cleanliness
- UL tested: class 2 approved

Specifications:

Product	Nominal Size	Media Area	Per Filter Pounds GAC-Wt.	Initial Resistance		Average Arrestance 500FMP	Merv Rating	Particulate Capacity (grams)	Final Resistance (inWG)
				300FPM	500FPM				
CARBON BOX STYLE									
OGCMC-12-800-01	12 x 24 x 12	29.0	3.8	.167	.425	91%	8	270	1.5
OGCMC-12-800-05	20 x 20 x 12	39.9	5.3	.167	.425	91%	8	371	1.5
OGCMC-12-800-06	20 x 24 x 12	48.3	6.4	.167	.425	91%	8	450	1.5
OGCMC-12-800-08	24 x 24 x 12	58.7	7.8	.167	.425	91%	8	547	1.5
CARBON WITH HEADER									
OGCMCH-12-800-01	12 x 24 x 12	26.0	3.4	.167	.425	91%	8	242	1.5
OGCMCH-12-800-05	20 x 20 x 12	35.4	4.7	.167	.425	91%	8	329	1.5
OGCMCH-12-800-06	20 x 24 x 12	43.4	5.7	.167	.425	91%	8	404	1.5
OGCMCH-12-800-08	24 x 24 x 12	52.6	7.0	.167	.425	91%	8	490	1.5
PLUS BOX STYLE									
OGBMC-12-800-01	12 x 24 x 12	29.0	50/50 Blend	.167	.425	91%	8	270	1.5
OGBMC-12-800-05	20 x 20 x 12	39.9	5.3	.167	.425	91%	8	371	1.5
OGBMC-12-800-06	20 x 24 x 12	48.3	6.4	.167	.425	91%	8	450	1.5
OGBMC-12-800-08	24 x 24 x 12	58.7	7.8	.167	.425	91%	8	547	1.5
PLUS WITH HEADER									
OGBMCH-12-800-01	12 x 24 x 12	26.0	3.4	.167	.425	91%	8	242	1.5
OGBMCH-12-800-05	20 x 20 x 12	35.4	4.7	.167	.425	91%	8	329	1.5
OGBMCH-12-800-06	20 x 24 x 12	43.4	5.7	.167	.425	91%	8	404	1.5
OGBMCH-12-800-08	24 x 24 x 12	52.6	7.0	.167	.425	91%	8	490	1.5

Data in accord with ANSI/ASHRAE 52.1 - 1992 and 52.2 test method.

Variations will occur during production, therefore this data should only be used as a guide.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

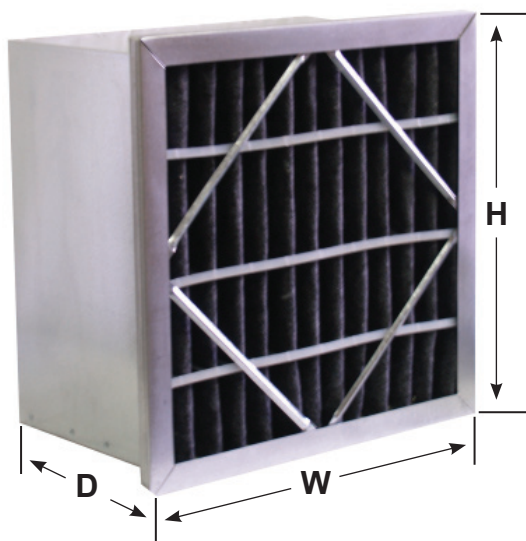
To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

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D MARK
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SINCE 1970

TOLL FREE: 800-343-3610
586-949-3610
fax: 586-949-4181
dmark@dmarkinc.com



Extended Surface Self-Supported Rigid Box Filter

FEATURES:

- 26 gauge galvanized steel frame
- Available in box style or with header
- Granular activated or a 50/50 blend of carbon and activated alumina impregnated with 5% Potassium Permanganate (KMnO₄) for odors and light gases
- Media pack bonded to frame utilizing moisture resistant adhesive, providing a continuous seal
- UL tested; class 2 approved

SPECIFICATIONS:

Product	Nominal Size	Actual Size	Media Area	GAC-Wt. Per Filter Pounds	50/50 Blend Per Filter Pounds	Initial Resistance		Average Arrestance @ 500 FPM	Merv Rating	Particulate Capacity (grams)	Final Resistance (in W. G.)
						300 FPM	500 FPM				
Box Style											
OGCMC-12-800-01	12 x 24 x 12	11-3/8 x 23-3/8 x 11-1/2	29.0	3.8	4.8	.167	.425	91%	8	270	1.5
OGCMC-12-800-05	20 x 20 x 12	19-3/8 x 19-3/8 x 11-1/2	39.9	5.3	6.6	.167	.425	91%	8	371	1.5
OGCMC-12-800-06	20 x 24 x 12	19-3/8 x 23-3/8 x 11-1/2	48.3	6.4	8.0	.167	.425	91%	8	450	1.5
OGCMC-12-800-08	24 x 24 x 12	23-3/8 x 23-3/8 x 11-1/2	58.7	7.8	9.8	.167	.425	91%	8	547	1.5
With Header											
OGCMCH-12-800-01	12 x 24 x 12	11-3/8 x 23-3/8 x 11-1/2	26.0	3.4	4.3	.167	.425	91%	8	242	1.5
OGCMCH-12-800-05	20 x 20 x 12	19-3/8 x 19-3/8 x 11-1/2	35.4	4.7	5.9	.167	.425	91%	8	329	1.5
OGCMCH-12-800-06	20 x 24 x 12	19-3/8 x 23-3/8 x 11-1/2	43.4	5.7	7.2	.167	.425	91%	8	404	1.5
OGCMCH-12-800-08	24 x 24 x 12	23-3/8 x 23-3/8 x 11-1/2	52.6	7.0	8.8	.167	.425	91%	8	490	1.5

Data in accord with ANSI/ASHRAE 52.1, 1992 and 52.2 test methods

Variations will occur during production, therefore this data should be used only as a guide.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

ODORGUARD® (CARBON) RIGID CELL FILTERS

60% ACTIVITY, GRANULAR ACTIVATED CARBON

Removes Odors and Particulates

MEDIUM and HEAVY DUTY APPLICATIONS

Standard sizes listed – Special sizes available

U. L. Tested: Class 2 Approved

Add \$5.00 per filter to any size for gasketing

BOX STYLE

PART NUMBER	NOMINAL SIZE	ACTUAL SIZE	WEIGHT EACH	LIST PRICE
OGCMC 12 800 01	12 x 24 x 12	11 3/8 x 23 3/8 x 11 1/2	12.5 lbs.	\$224.00
OGCMC 12 800 05	20 x 20 x 12	19 3/8 x 19 3/8 x 11 1/2	17.3 lbs.	\$260.00
OGCMC 12 800 06	20 x 24 x 12	19 3/8 x 23 3/8 x 11 1/2	21.0 lbs.	\$280.00
OGCMC 12 800 08	24 x 24 x 12	23 3/8 x 23 3/8 x 11 1/2	25.0 lbs.	\$304.00

ODORGUARD® (CARBON) RIGID CELL FILTERS

WITH HEADER

PART NUMBER	NOMINAL SIZE	ACTUAL SIZE	WEIGHT EACH	LIST PRICE
OGCMCH 12 800 01	12 x 24 x 12	11 3/8 x 23 3/8 x 11 1/2	12.0 lbs.	\$225.00
OGCMCH 12 800 05	20 x 20 x 12	19 3/8 x 19 3/8 x 11 1/2	16.6 lbs.	\$265.00
OGCMCH 12 800 06	20 x 24 x 12	19 3/8 x 23 3/8 x 11 1/2	20.0 lbs.	\$285.00
OGCMCH 12 800 08	24 x 24 x 12	23 3/8 x 23 3/8 x 11 1/2	24.0 lbs.	\$315.00

SPECIAL SIZE FILTERS ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

Adsorbent weights will vary with density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGRigidCell.01.08

ODORGUARD[®] PLUS RIGID CELL FILTERS

60% ACTIVITY, GRANULAR ACTIVATED CARBON
AND ACTIVATED ALUMINA, WITH 5% POTASSIUM PERMANGANATE, KMnO₄

*Removes Odors, Particulates and Light Gases to include:
Ammonia • NH₃ • HCHO • Sulfur Dioxide • SO₂ and Hydrogen Sulfide • H₂S*

MEDIUM and HEAVY DUTY APPLICATIONS

Standard sizes listed – Special sizes available

U. L. Tested: Class 2 Approved

Add \$5.00 per filter to any size for gasketing

BOX STYLE

PART NUMBER	NOMINAL SIZE	ACTUAL SIZE	WEIGHT EACH	LIST PRICE
OGBMC 12 800 01	12 x 24 x 12	11 3/8 x 23 3/8 x 11 1/2	12.0 lbs.	\$336.00
OGBMC 12 800 05	20 x 20 x 12	19 3/8 x 19 3/8 x 11 1/2	16.6 lbs.	\$390.00
OGBMC 12 800 06	20 x 24 x 12	19 3/8 x 23 3/8 x 11 1/2	20.0 lbs.	\$420.00
OGBMC 12 800 08	24 x 24 x 12	23 3/8 x 23 3/8 x 11 1/2	24.0 lbs.	\$456.00

ODORGUARD[®] PLUS RIGID CELL FILTERS

WITH HEADER

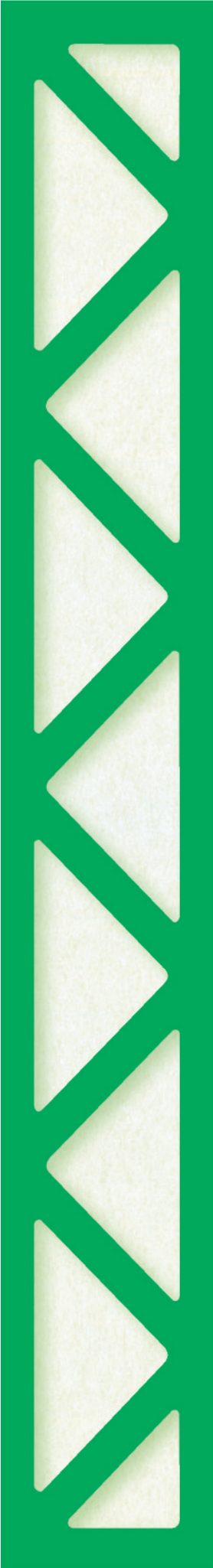
PART NUMBER	NOMINAL SIZE	ACTUAL SIZE	WEIGHT EACH	LIST PRICE
OGBMCH 12 800 01	12 x 24 x 12	11 3/8 x 23 3/8 x 11 1/2	11.5 lbs.	\$337.00
OGBMCH 12 800 05	20 x 20 x 12	19 3/8 x 19 3/8 x 11 1/2	16.0 lbs.	\$397.00
OGBMCH 12 800 06	20 x 24 x 12	19 3/8 x 23 3/8 x 11 1/2	19.0 lbs.	\$427.00
OGBMCH 12 800 08	24 x 24 x 12	23 3/8 x 23 3/8 x 11 1/2	23.0 lbs.	\$472.00

SPECIAL SIZE FILTERS ARE PRICED INDIVIDUALLY.
PLEASE CALL FOR SPECIFICS.

Adsorbent weights will vary with density and process loading.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

OGplusRigidCell.02.08



CarbonWeb[®]

Granular Activated Carbon Filter Media: Panels, Pads, Pleats, Metal Frames, Rolls & Blankets

Designed for Removal of:

- Odors
- Gaseous Pollutants
- Particulates

CW Media Applications: Blankets, Rolls, or Filters

- Air Intakes* [Roof Tops; Over Loading Docks; At Ground Level]
- Asphalt [Parking Lots, Roads, Roofs]
- Emergency IAQ Problems
- Non-Standard Air Handling Systems
- Odor Generating Maintenance Procedures
- Pleated Filters
- Remediation and Restoration
- Remodeling [Flooring; Painting; Wall Coverings]
- Roofing [*Air Intakes during Installation or Repair]

OEM AND REPLACEMENT APPLIANCE FILTRATION

- Ductless Range Hoods, OTR Microwaves
- Ductless Bath Fans
- Electronic and Mechanical Air Cleaners
- Fume Hoods

CarbonWeb is an efficient, carbon filled filter media that provides low air resistance and a high capacity. Its gas phase, 60% activity granular activated carbon has nearly five million square feet of surface area per pound, and is designed to remove odors and gaseous pollution from air. Offered in a variety of sizes and thicknesses,

CarbonWeb media can be used to create your own filter design, or customized by D-Mark to your filter specifications. In blanket or roll form, it is especially effective for solving or preventing on-site emergency air quality problems. Whatever the application, the use of CarbonWeb media results in fresher, more odor-free indoor air.

CarbonWeb[®] Patented Filter Media

D-Mark Air Filtration Products are made with CarbonWeb[®] Flexible Carbon Filled Filter Media. Using a patented process, media for general odor control is filled with granular activated carbon. Media for the control of light gases is filled with other types of adsorbents, either alone or in combination with granular activated carbon. The result is high-efficiency filtration for a variety of odor control challenges.

D MARK[®]
The Carbon Filter Specialists[®]
SINCE 1970

CarbonWeb®

Granular Activated Carbon Filter Media: Panels, Pads, Pleats, Metal Frames, Rolls & Blankets

Features:

- Patented, flexible CarbonWeb media “adsorbs” odors and pollutants - carbon will not settle.
- Low air resistance, non-by-pass, disposable media offered for light or medium or heavy duty applications.
- Rolls, available in standard and custom widths.
- Light/medium duty media, except CarbonWeb 90, is available with a white polyester pre-filter.
- Roll and Blanket widths are +/- 1/4”.
- Heavy Duty Filters, available in standard and custom sizes, with or without pre or after filters, and gasketing.
- Packaged in polyethylene to preserve capacity and cleanliness.
- UL approved.

Specifications:

Product		GAC-Wt., Grams sq. ft. sq. meter		Nominal Thickness	Roll Length	Blankets	Pads/Framed	Prefilter
Light to Medium Duty	CW 20	20	215	3/16”	100’	✓	✓	✓
	CW 30	30	325	3/16”	100’	✓	✓	✓
	CW 30T	30	325	1/2”	100’	✓	✓	✓
	CW 45	45	485	3/16”	50’	✓	✓	✓
	CW 90	90	970	3/8”	50’	✓	✓	–
Heavy Duty	CW 300	300	3,225	3/4”, 1”	–	✓	✓	–
	CW 600	600	6,450	2”	–	✓	✓	–
	CW 900	900	9,675	3”	–	–	✓	–
	CW 1200	1,200	12,900	4”	–	–	✓	–

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

Also Available:

In addition to the standard filter products shown above, D-Mark offers filters with customized CarbonWeb media for special odor control applications.

Examples of frequently requested media with carbon and other adsorbents:

CW Plus– filled with a 50/50 blend (by volume) of granular activated carbon and activated alumina impregnated with potassium permanganate.

CW Alumina – filled with 100% activated alumina impregnated with potassium permanganate.

Triple Blend– filled with granular activated carbon, impregnated activated alumina and Zeolite, equally blended by volume.

To find out more, visit the D-Mark web site, or
contact D-Mark Customer Service and describe your odor control challenge.

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

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D MARK
The Carbon Filter Specialists®
SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com



CW ROLLS ARE PLEATABLE WITHOUT WIRE BACKING BY UTILIZING PRE OR POST HEAT; OR WITH WIRE BACKING.

APPLICATIONS:

- HVAC pleats for Commercial, Industrial or Residential installations.
- Blankets: CW90 for air intakes (on rooftops, near loading docks or at ground level).
- Air Cleaners: Electronic and/or Mechanical.
- Appliances: Ductless Range Hoods and Bath fans, and OTR (over the range) microwave ovens.

DESCRIPTION:

CarbonWeb® flexible carbon filled fibers, is a patented product line. It integrates various quantities of 60% activity granular activated carbon with non-woven fibers creating unique substrates that are produced as rolls.

These unique products offer Superior Odor Removal with Low Air Resistance and are UL approved.

PRODUCT DESIGNATION	GAC - Wt., Grams Sq. Foot Sq. Meter		THICKNESS	STANDARD ROLLS	INITIAL RESISTANCE 300 FPM
CW 20	20	215	3/16"	30" x 100'	.28
CW 30	30	325	3/16"	30" x 100'	.29
CW 30T	30	325	1/2"	30" x 50'	.31
CW 45	45	485	3/16"	30" x 100'	.31
CW 90*	90	970	3/8"	30" x 50'	.63

* CW 90 is not pleatable for most applications.

Data in accord with ASHRAE 52.2, 2007.

Variations will occur during production, therefore this data should be used only as a guide.

STOCKED ROLL WIDTHS: 30" 24 3/8" 23 3/8" 19 3/8"

OPTIONS: a. Special size rolls quoted on request. b. White polyester pre-filter available.

All Carbonweb roll material can be cut to size with a standard paper cutter.

D-Mark has a policy of continuous product improvement and reserves the right to make changes in designs and specifications without notice.

To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

CarbonWeb® 90

For The Roofing Industry

D-Mark's CarbonWeb 90 has proven to be effective in stopping odors generated during roofing work from entering buildings thru air intakes.

Patented CW 90 contains 90 grams per square foot of 60% activity granular carbon, and is designed to remove gaseous pollutants and odors from air.

CarbonWeb 90 is sold in rolls and can be cut easily with scissors, or a razor knife, and taped to cover intakes, whether they are on rooftops, near loading docks or at ground level.

D-Mark manufactures a complete line of Activated Carbon filter media and products for air purification.



D-MARK
SINCE 1970

Specifications:

PRODUCT DESIGNATION	GAC - Wt., Grams Sq. Foot Sq. Meter		THICKNESS	STANDARD ROLLS	SHIPPING WEIGHT
CW 90	90	970	3/8"	30" x 50'	28 lbs.



The Problem:

Odors entering the air intakes.



The Solution:

CarbonWeb 90 from D-Mark.



Preparing CW 90.



CW 90 installed.

Odors are being removed.

Call D-Mark or
visit our website
for additional
information.



130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

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Date 9.1.13

D-MARK
The Carbon Filter Specialists®
SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com

CARBONWEB® ROLLS PRICE SHEET

*CarbonWeb Rolls (CW) can be utilized for Panels, Pads, Pleats,
in Metal Frames and Blankets*

CW Rolls are pleatable without wire backing and are UL approved.

Specific applications include Air Cleaners, Appliances, Pleated Filters,
Special products for HVAC applications and Blankets to cover air intakes during Roofing
Operations or in other malodorous situations.

Grade Designation	CW 20	CW 30	CW 30T	CW 45	CW 90*
Carbon Weights					
Grams/sq. ft.	20	30	30	45	90
Grams/sq. meter	215	325	325	485	970
Roll Length (ft.)	100'	100'	50'	100'	50'
Roll Width (in.)					
30"	\$198 (22#)	\$237 (28#)	\$133 (21#)	\$313 (36#)	\$306 (28#)
24.375"	\$160 (18#)	\$193 (23#)	-	\$250 (29#)	-
23.375"	\$154 (17#)	\$185 (22#)	-	\$236 (28#)	-
19.375"	\$128 (14#)	\$154 (18#)	-	\$212 (23#)	-

* CW 90 is not pleatable for all applications.

Notes:

- Normally from stock; Large Orders, approx. two weeks
- CW 30T is made to order; approx. two weeks
- Special Lengths add \$10.00 per roll
- If slitting charges apply, add \$10.00 per roll
- Special Lengths and Widths available. Quoted upon request.
- White polyester pre-filter: add \$.25/sq. ft.
- Carbon Wt. Tolerance: +/- 10%
- Width Tolerance: +/- 1/4"
- Packaging: Polyethylene bag suitable for FEDX/UPS or Road Truck.
- Shipment: FOB, D-Mark Dock, Chesterfield, MI. 48051
- Terms: Net 30 days, USD

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

Carbon Web 08.14

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043

800.343.3610
fax 586.949.4181
586.949.3610

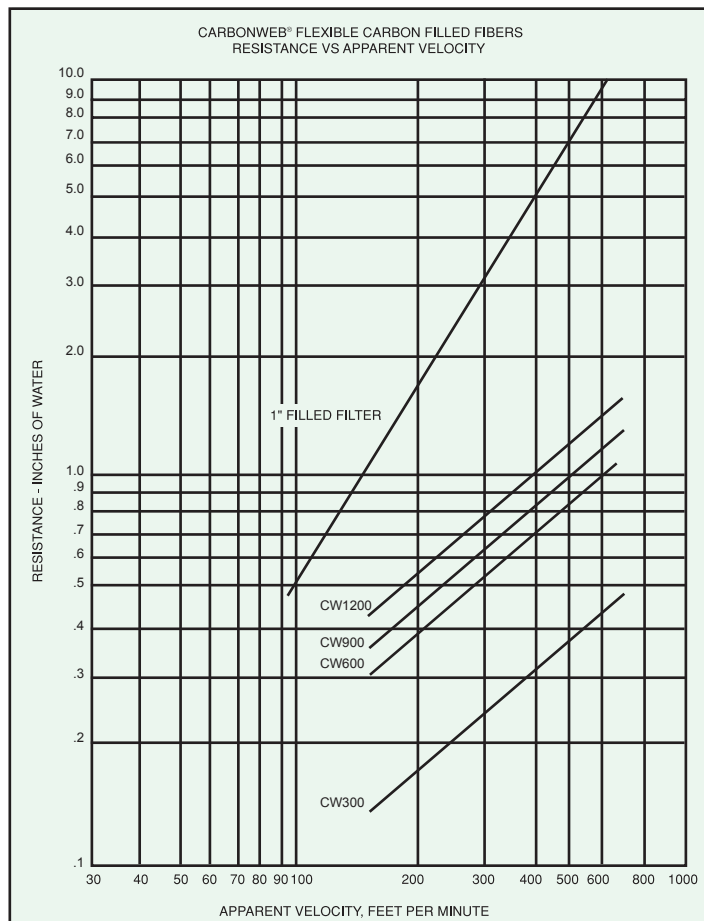
www.dmarkinc.com
dmark@dmarkinc.com

CARBONWEB® ACTIVATED CARBON FILTERING MEDIA

CARBONWEB IS A UNIFORM, HIGH CAPACITY, EFFICIENT, LOW AIR RESISTANT ACTIVATED CARBON FILTERING MEDIA THAT WILL NOT ALLOW CARBON TO SETTLE.

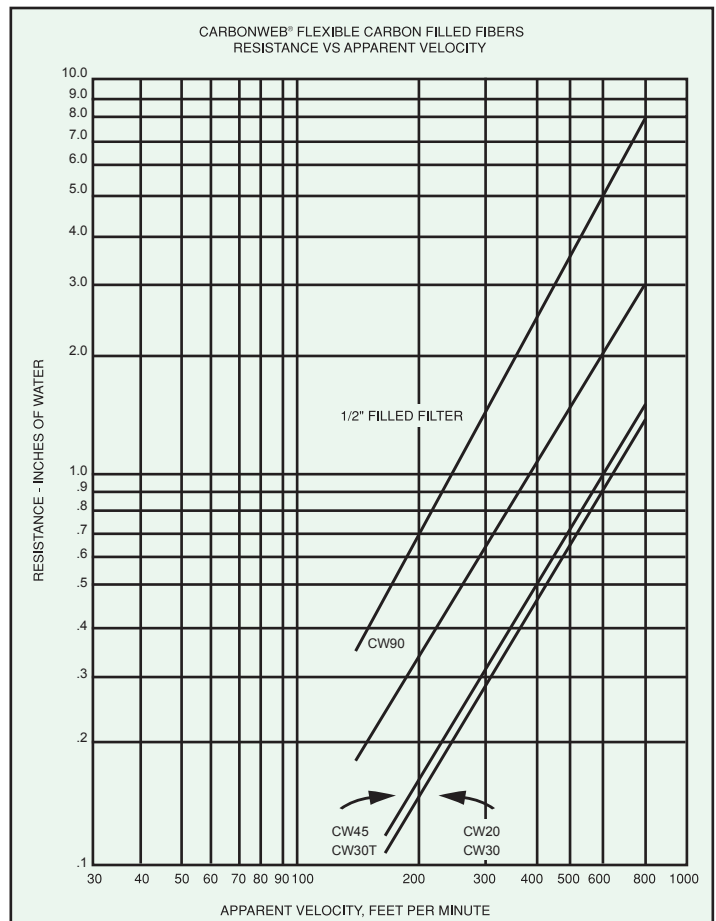
HEAVY DUTY

CW 300, 600, 900 and 1200 grams of carbon per sq. ft.
Designed for HVAC systems and Heavy Duty Air Cleaners.
Thickness: 3/4" thru 4".



LIGHT/MEDIUM DUTY

CW 20, 30, 30T, 45 and 90 grams of carbon per sq. ft.
Designed for Pleated HVAC filters, Roofing, Air Cleaners
and Appliances. Thickness: approx. 3/8".



Data in accord with ASHRAE 52.2 – 2007.

Variations will occur during production, therefore this data should be used only as a guide.

CarbonWeb Filters utilize a quality, gas phase, 60% activity, granular carbon, with nearly 5 million sq. ft. of surface area per pound.

To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

*Innovators in Odor
and Pollution Control*



The Carbon Filter Specialists®
SINCE 1970

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

586.949.3610
fax 586.949.4181
dmark@dmarkinc.com

January, 2004

CARBONWEB® and ODORGUARD® CAPACITY TESTING

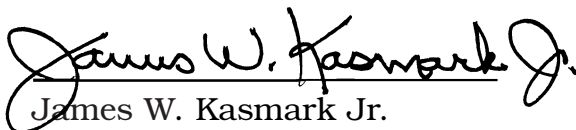
This brochure details the results of AIR FILTER TEST LABORATORIES capacity tests of our products.

- a. Page 2, lists D-MARK's products and their applications.
- b. Page 3, is the summation of a series of test; Report No. 9159.
- c. Page 4, outlines the test protocol.

The test data validates the:

- 1. Capacities of our CW 20, 45, and 90 and compares them with three [3] grades of impregnated polyester.
- 2. Capacities of our CW 300 and 600, OG III, 300 and 600 and compares them with as 1" filled filter [tray].

The **CAPACITY and LIFE** of these products are the best possible reasons to specify and utilize them, whenever **ODOR and POLLUTION CONTROL** problems arise in **COMMERCIAL, INDUSTRIAL or RESIDENTIAL APPLICATIONS**.


James W. Kasmark Jr.
President

ADSORBALL®, CARBONWEB®, D-MARK®, and ODORGUARD® are Registered Trademarks of D-Mark, Inc.

This report compares the **capacity** of our current range of CarbonWeb® [CW] products with three grades of polyester impregnated via the liquid impregnation process and a one inch filled filter [tray].

The test data clearly shows the capacity and life advantages of our CarbonWeb® and OdorGuard® products.

PRODUCT*

APPLICATION

CW 20	An appliance product.
CW 45	A high end appliance product, also used in air cleaner.
CW 90	A maximum capacity product, 3/8" thick*. This product is being used in our Space Shuttles.
CW 300	A maximum loaded product, 3/4" thick*, for HVAC applications and heavy duty air cleaners. CW 300 is utilized in OdorGuard III and Odorguard 300.
CW 600	Two layers of CW 300, 1 1/2" - 2" thick*, for HVAC applications and heavy duty air cleaners. CW 600 is utilized in Odorguard 600.

*20, 45, 90, 300 and 600 designate the grams** of granular activated carbon/square foot.
Equivalent to 215, 485, 970, 3225 and 6450 grams/square meter.

**approximate

AIR FILTER TESTING LABORATORIES, INC.

4632 OLD LA GRANGE ROAD | CRESTWOOD, KENTUCKY 40014

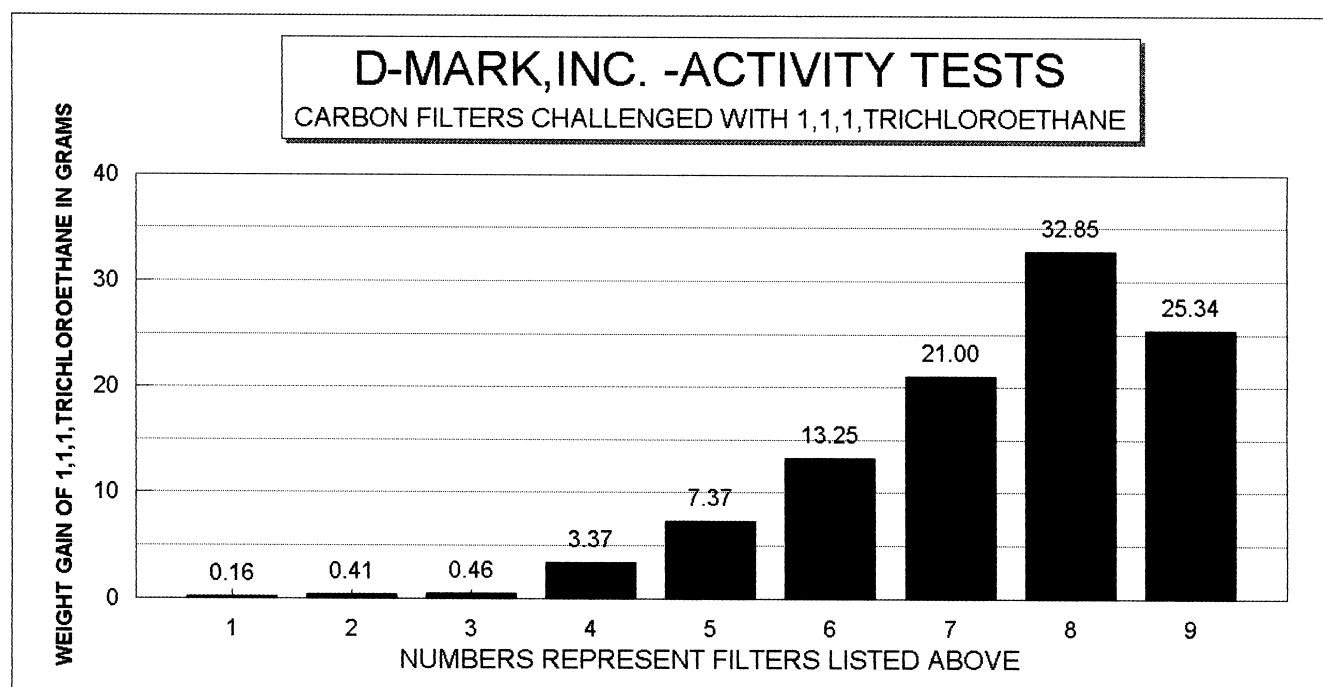
PHONE | FAX (502)222-5720

REPORT NO. 9159

SHEET NO. 10 OF 10

1,1,1,TRICHLOROETHANE ACTIVITY TESTS FOR D-MARK ACTIVE CARBON FILTERS

SAMPLE		WEIGHT
		GAIN gms
		1,1,1,TRI-
1	IMPREGNATED POLYESTER APPLIANCE GRADE	0.16
2	IMPREGNATED POLYESTER, HVAC PLEAT GRADE	0.41
3	IMPREGNATED POLYESTER HVAC GRADE	0.46
4	CARBONWEB 20	3.37
5	CARBONWEB 45	7.37
6	CARBONWEB 90	13.25
7	CARBONWEB 300 [ODORGUARD III and 300]*	21.00
8	CARBONWEB 600 [ODORGUARD 600]*	32.85
9	HIGH STANDARD [1" FILLED FILTER [TRAY]*	25.34



TEST SUPERVISOR

R.J.B.

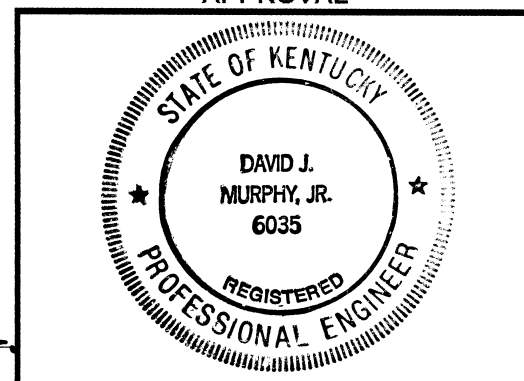
DATE

2-19-1996

ENGINEERING APPROVAL

David J. Murphy Jr.

APPROVAL



AIR FILTER TESTING LABORATORIES, INC.

4632 OLD LA GRANGE ROAD | CRESTWOOD, KENTUCKY 40014

PHONE | FAX (502)222-5720

ACTIVITY TESTS ON ACTIVATED CARBON

THE TECHNIQUE UTILIZED BY AFTL TO MEASURE THE CAPACITY OF ACTIVATED CARBON SAMPLES IS AS FOLLOWS:

1. THE SAMPLES WERE DRIED AND PLACED IN A GLASS CHAMBER, AND SUSPENDED BY A WIRE HOOKED TO AN ELECTRONIC ANALYTICAL BALANCE, WHICH WAS EXTERNAL TO THE ENCLOSED GLASS CHAMBER. THE ELECTRONIC ANALYTICAL BALANCE WAS CONNECTED TO A COMPUTER. AFTL'S SOFTWARE RECORDED THE CHANGE IN WEIGHT SIGNALLED BY THE BALANCE EVERY 20 SECONDS.

THIS PROCESS CONTINUES UNTIL THE WEIGHT GAIN IS NO LONGER EVIDENT. ACTUALLY THE SATURATION POINT OCCURS AND A LOSS OF WEIGHT IS OBSERVED. AT THIS TIME THE TEST IS STOPPED. THE CHALLENGE AGENT IS 1, 1, 1, TRICHLOROETHANE. THE CLEAN AIR ACT OF 1990 FORBIDS THE USE OF CARBON TETRACHLORIDE, THE CHALLENGE AGENT USED SINCE BEFORE WORLD WAR I.

THE RESULTS SHOWN BY 1, 1, 1, TRICHLOROETHANE ARE VERY CLOSE TO THE ACCUMULATED DATA OF THE ACTIVITY TESTS THAT UTILIZED CARBON TETRACHLORIDE AS THE CHALLENGE AGENT.

2. THE RESULTANT DATA IS PLOTTED ON A WEIGHT/TIME BASIS AND PRESENTED BOTH GRAPHICAL AND BAR CHART FORMAT.

3. THE GRAPHICAL PRESENTATION EQUATES TO THE CARBON SAMPLE BEING TESTED, ABILITY TO ADSORB A VOLATILE ORGANIC COMPOUND.

4. THE RESULTANT PLOT IS THE INDIVIDUAL ISOTHERM OF THE CARBON SAMPLE.

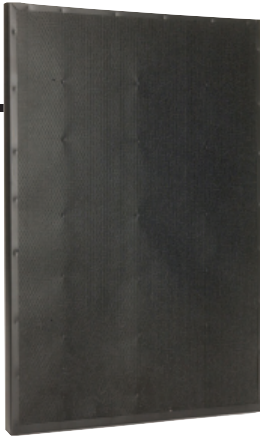
5. THE FINAL VALUE DEPENDS ON THE QUALITY OF THE ACTIVATED CARBON i.e. SURFACE AREA (1200 SQ. M/GRAM) - IODINE VALUE OF 1200 MG/GRAM. THE ABOVE VALUES SHOW A HIGH GRADE OF ACTIVATED CARBON.

6. TO OBTAIN THE TRUE PERCENT CAPACITY VALUE ONE SHOULD KNOW THE WEIGHT OF THE CARBON ALONE.

R.J.B.

Carbon and Adsorbent Filled Trays

V-bank Trays • Air Cleaners • Fume Hoods • Panel Applications



APPLICATION:

ODOR, FUME and POLLUTANT REMOVAL for commercial and light industrial applications. Carbon filled trays are used in both front and side access housings, as panel filters, and are well suited for HEAVY DUTY AIR CLEANERS.

DESCRIPTION:

Perforated metal facing, welded to a “U” channel frame, with internal spacer bars welded at regular intervals, to insure uniform filter thickness.

FEATURES and BENEFITS:

D-MARK’s carbon filled trays afford the user maximum carbon utilization, uniform air flow, and minimum restriction by:

1. vibrating during filling [to insure a maximum carbon loading, a uniform bed, and to eliminate channeling].
2. “blowing” thru filters with air pressure after filling [to minimize the fines and dust “fall out” at installation].
3. adding a polyethylene bag to insure the original carbon capacity is protected until installation.

ADSORBENTS:

All carbons are 60% CCL4 activity.

Impregnated aluminas are to manufacturers standards.

Standard Carbon

- DM 46 4

Pellet

- DM 48

Granular

Available

- DM 68

Smaller pellet, equal capacity, higher pass efficiency

- DM 612 3

Coconut, granular

- Impregnated Carbons

Special order

- DM Ialum 3 3 x 6

Impregnated Alumina

- DM Blend 3:

50/50 [by volume] of DM 68 3 and 3 x 6 impregnated alumina

- DM Triple Blend 3

Three adsorbents blended equally by volume;
activated carbon; impregnated alumina and zeolite

FILTER FRAME and PERFORATED METAL:

- Standard V-Banks: Painted CRS
- Non-standard sizes: Tin Plated CRS
- Thickness: 3/4” or 1”
- Available Thicknesses: 1/2”; 5/8”; 1 1/2”; 2” [nominal]
- Painted, for special sizes
- Galvanized or stainless steel
- Polyester pre-filters; and/or after filters.
- Gasketing
- Empty trays

To find out more, visit the D-Mark web site, or contact D-Mark Customer Service and describe your odor control challenge.

130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

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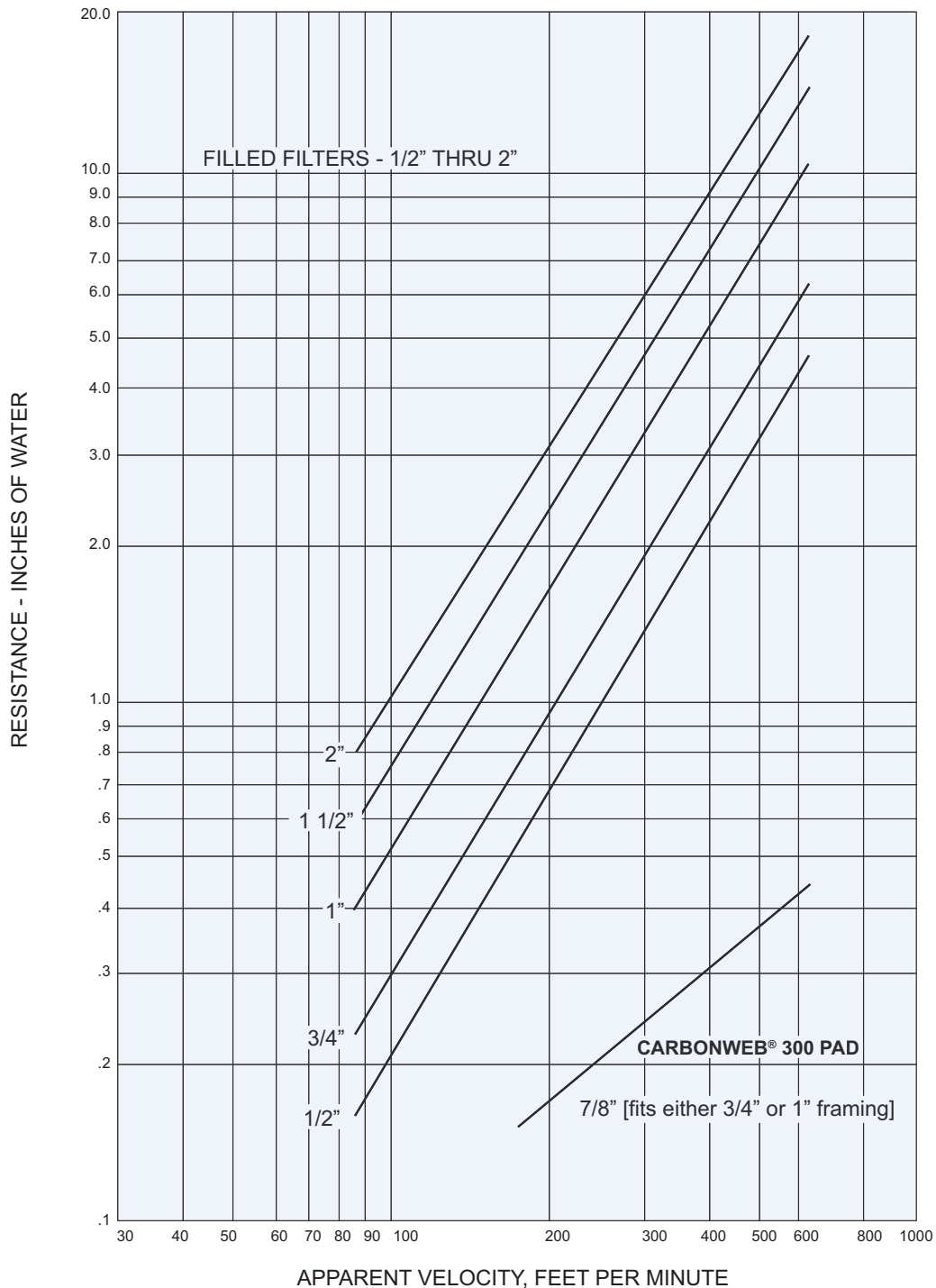
D MARK
The Carbon Filter Specialists®
SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com

CARBON & ADSORBENT FILLED TRAYS TECHNICAL INFORMATION

FILLED (PACKED BEDS) ACTIVATED CARBON FILTERS

RESISTANCE VS. APPARENT VELOCITY



TESTED FILTERS UTILIZED D-Mark's STANDRD METAL AND DM 68 3 PELLETIZED CARBON

Data in accord with ASHRAE 52.1, 1992.

Variations will occur during production, therefore this data should be used only as a guide.

STANDARD REPLACEMENT TRAYS [filters] for V-BANK HOUSINGS

D-MARK'S STANDARD IS 60% ACTIVITY ACTIVATED CARBON

METAL REPLACEMENT TRAYS ARE PAINTED BLACK

PART NUMBER	ACTUAL SIZE	PRICING
CTCTO 02 0 2323	23 3/8 x 23 3/8 x 1 7/8	
CTCTO 01 0 0723	7 1/2 x 23 1/4 x 1	Please call for Pricing
CTCTO 01 0 1223	12 x 23 11/16 x 1	
CTCTO 01 0 2223	22 1/8 x 23 7/8 x 1	
CTCTO 75 0 1123	11 3/8 x 23 3/8 x 3/4	
CTCTO 75 0 2323	23 3/8 x 23 3/8 x 3/4	
CTCTO 75 0 2323A	23 1/2 x 23 7/8 x 3/4	

Popular Sizes Listed, Other Sizes Available
Honeycomb, Optional Tray Construction and/or Alternate Fills are Available.

APPLICATIONS:

- General Odors, VOCs and Ozone Removal: Use 60% activity Activated Carbon.
- General Odor and Light Gas Removal: Use a 50/50 blend, by volume, of activated Carbon and Impregnated Alumina.
- Light Gas Removal [Ammonia, Formaldehyde, Hydrogen Sulfide and Sulfur Dioxide]:
Use Activated Alumina impregnated with 5% potassium permanganate.

CONSTRUCTION:

Standard trays are painted black, which is the general industry standard.

Options:

- Stainless Steel: They offer the longest life, and may be suitable for certain corrosive environments. They are approx. 30% more expensive than the standard painted tray.
- Galvanized: They offer longer life than either the standard or tin plated tray in general HVAC applications. They are approx. 7 – 15% more expensive than the standard tray.
- Tin Plate: They will rust more readily than the standard tray and may not be suitable for refilling after the first use. They are approx. 7 – 15% less expensive than the standard tray.
- Available: Gasketing, polyester pre and/or after filters

DELIVERY:

Trays for all applications are normally available within 10-15 working days.
Optional construction may add an additional 5-10 working days.

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB
CarbonFilledTrays 01.14

SPECIAL SIZES - ADSORBENT FILLED FILTERS
HEAVY DUTY AIR CLEANERS, FUME HOODS
AND SPECIAL ODOR AND POLLUTION CONTROL APPLICATIONS
METAL or HONEYCOMB CONSTRUCTION

THICKNESS [in]: 1/2, 5/8, 3/4, 7/8, 1 3/8, 1 1/2, 1 3/4, 1 7/8, 2, 2 7/8, 3 7/8

FILTER OPTIONS

EMPTY TRAY	CARBON FILLED ₁	CARBON & ALUMINA ₂	ALUMINA FILLED ₃
PLEASE CALL FOR PRICING			

MINIMUM FILTER PRICE IS \$25.00

APPLICATIONS:

1. General Odors, VOCS and Ozone Removal: Use 60% activity Activated Carbon.
2. General Odor and Light Gas Removal: Use a 50/50 blend, by volume, of activated Carbon and Impregnated Alumina.
3. Light Gas Removal [Ammonia, Formaldehyde, Hydrogen Sulfide and Sulfur Dioxide]:
Use Activated Alumina impregnated with 5% potassium permanganate.

CONSTRUCTION:

Standard material for special filters is tin plate.

Tolerances, +/- 1/16 on length & width, +/- 1/32 on thickness

1. Special size filters are normally produced in small quantities and are replaced instead of being refilled.
Therefore, to minimize cost, tin plate is utilized.
2. Filter Options: See Options on the Front Side.
3. Available: Gasketing, polyester pre and/or after filters

DELIVERY:

Filters for all applications are normally available within 10-15 working days.

Optional construction may add an additional 5-10 working days..

TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

CarbonFilledTrays 02.14

BULK CARBONS and ADSORBENTS

Activated Carbons • Impregnated Alumina • Blends • Zeolite



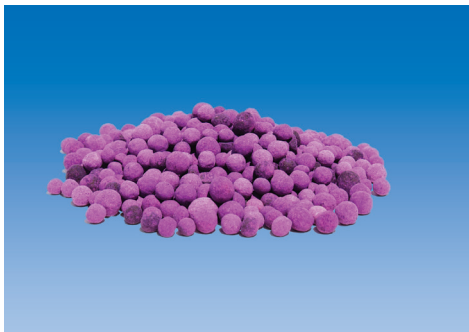
DM 68 3 [3mm pellet]



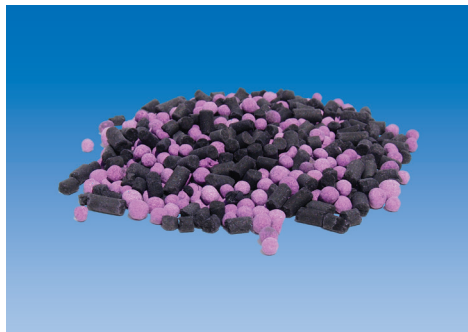
DM 46 4 [4mm pellet]



DM 612 3 [6/12 mesh granular coconut]



DM Ialum 3 [3mm spheroid]



DM Blend [3mm blend]



DM Triple Blend [3mm blend]

GENERAL:

Activated Carbon is known as the **UNIVERSAL ADSORBENT**. It will adsorb “some” of almost any gas and the **MAJORITY** of Odors and Pollutants that are commonly found in Commercial, Industrial and Residential HVAC systems. Other adsorbents and blends are used for specific applications.

APPLICATION:

D-MARK utilizes and recommends the use of, **PELLETIZED** activated carbon [vs granular carbon] in filled filters. Pellets will “pack” uniformly, without closing the holes in perforated metal or other facing materials. In turn, uniformity promotes even air flow, higher pass efficiency and maximum carbon utilization.

Normally, pelletized carbons have fewer fines, since there are no sharp corners to break off. This feature promotes uniformity of the bed, cleanliness both during handling and of the final product. A carbon with less fines will also result in fewer “pounds” at the bottom of the drum or bag that are thrown away.

Please see Reverse Side for Carbon and Adsorbent Specifications.

To find out more, visit the D-Mark website, or contact D-Mark Customer Service and describe your odor control challenge.

BULK CARBONS and ADSORBENTS

Activated Carbons • Impregnated Alumina • Blends • Zeolite

CARBON AND ADSORBENT SPECIFICATIONS

ADSORBENTS: All carbons are 60% CCL₄ activity.
Impregnated Aluminas are to manufacturers standards.

<u>PART NUMBER</u>	<u>DESCRIPTION</u>
DM 68 3	6/8 mesh carbon pellet [3mm]
DM 46 4	4/6 mesh carbon pellet [4mm]
DM 612 3	6/12 mesh granular coconut
DM Ialum 3	3mm spheroid, Impregnated Activated Alumina [IA]
DM Blend 3	3mm blend [50/50 by volume] DM 68 3 and 3mm IA
DM Triple Blend 3	Three adsorbents, blended equally by volume [3mm Blend]: Activated carbon, Impregnated Alumina, and Zeolite
Impregnated Carbons	Special Order

To find out more, visit the D-Mark website, or contact D-Mark Customer Service and describe your odor control challenge.

BULK ADSORBENTS

ACTIVATED CARBONS - IMPREGNATED ALUMINA - BLENDS - ZEOLITE

LIST PRICES

*ADSORBENTS ARE SOLD BY THE CARTON, WEIGHTS WILL VARY DEPENDING UPON DENSITY.
EACH CARTON IS WEIGHED AT TIME OF SHIPMENT FOR INVOICING AND SHIPMENT COSTS.*

PART NUMBER	MESH SIZE	APPROX. WT.	NO. OF CARTONS PRICE/POUND		
			1	2-7	8 AND UP
(a) DM 68 3	6 x 8 3mm	30	\$3.74	\$3.11	\$2.67
(a) DM 46 4	4 x 6 4mm	30	\$4.18	\$3.48	\$2.79
(a) DM 612 3 Coconut Shell	6 x 12	30	\$4.99	\$4.16	\$3.57
(b) DM IALUM 3	6 x 8	54	\$8.07	\$6.73	\$5.76
DM ZEOLITE 3	6 x 8	51	\$3.07	\$2.56	\$2.18
(c) DM BLEND 3	6 x 8	42	\$6.46	\$5.93	\$4.62
(d) DM TRIPLE BLEND 3	6 x 8	45	\$5.20	\$4.35	\$3.71

- (a) 60% activity, Commercial/Industrial quality material.
- (b) Activated Alumina, impregnated with 5% potassium permanganate.
- (c) A 50/50 mixture (by volume) of 3mm carbon pellets (a) and impregnated activated alumina (b).
- (d) A mixture of three (3) adsorbents (equal by volume) of 3mm carbon pellets (a) impregnated activated alumina (b) and granular Zeolite.

ALL ADSORBENTS ARE PACKAGED AND SHIPPED IN ONE (1) CUBIC FOOT, 275# TEST, RSC CARTONS.
THIS ALLOWS FOR UPS OR FEDX SHIPMENT AND HANDLING BY AN INDIVIDUAL.
SPECIAL PACKAGING IS AVAILABLE AT ADDITIONAL COST.

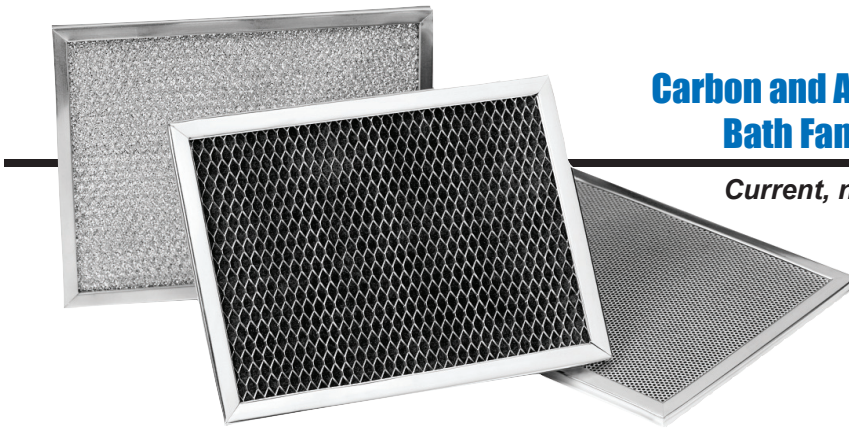
TO ORDER, PLEASE SEE AFD.01.96 BEHIND WHITE ORDERING TAB

BulkAdsorbents.01.14

Appliance Filters

Carbon and Aluminum Mesh Filters for Range Hoods, Bath Fans and Over the Range Microwave Ovens

Current, non-current and discontinued sizes and styles



New or clean filters can make a big difference in how well your Appliance "FILTERS" the air.



CarbonWeb® Filters (patented)

Ductfree [recirculating] Range Hoods
Ductfree [recirculating] Bath Fans
Over the Range Microwave Ovens

When should I change my carbon filters?

Carbon filters cannot be washed or reactivated, they must be replaced. They should be changed every 6 to 12 months, depending upon usage.

A CarbonWeb® filter is like having two filters for the price of one. It contains granular activated carbon, and removes particulates, gases and odors. It can also replace combination appliance filters that have a layer of aluminum mesh combined with paper, fiberglass or carbon pads.

CarbonWeb, flexible carbon filled fiber filters, utilize commercial quality activated carbon, are UL tested, Class 2 approval, and are a patented product.

Aluminum Mesh Filters

Ductfree and Vented Range Hoods
Over the Range Microwave Ovens
Electronic and Mechanical Air Cleaners

Aluminum mesh filters should be cleaned periodically. We recommend cleaning them in the dishwasher every six months, depending upon usage. They should be replaced when damaged. UL tested, Class 1 approval.

Replacement Filters

Range hoods, microwave ovens and bath fans have been manufactured by many companies and sold under numerous brand names. Listed below are "some" of the names, and/or models that have been marketed in North America.

Amana	Dacor	Hotpoint	Maytag	NuTone	Roper	Tappan	Village
Air Care	Fasco	Imperial Cal	Mercury	Panasonic	Sears	Thermador	Welbilt
Aubrey	Frigidaire	Jenn-Air	Miami-Carey	Preway	Sharp	Triangle	Westinghouse
Broan	GE	Kenmore	Modern-Aire	Rangaire	Stewart	Ventline	Whirlpool
Caloric	Gaffers-Statler	Magic Chef	Mautilus	Rangemaster	Swanson	Ventrola	

If you have any questions about the filters you need, we'll be happy to assist you. Call us **toll-free** at **800.343.3610**

130 N. Goesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

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D-MARK®
The Carbon Filter Specialists®
SINCE 1970

TOLL FREE: 800.343.3610
586.949.3610
fax: 586.949.4181
dmark@dmarkinc.com

CARBONWEB® APPLIANCE FILTERS

OTR* Microwave Ovens, Ductfree Bath Fans and Range Hoods

D-Mark supplies current, non-current and discontinued sizes and styles.

BRAND	PART NUMBER	DESCRIPTION	SIZE	PRICE CODE
-------	-------------	-------------	------	------------

*OVER THE RANGE MICROWAVE OVENS

GE/Hotpoint	WB2X3409		11 1/16	x	24 3/8	D
	WB2X7692		8 3/8	x	18 1/8	C
	WB2X4267	JX81	6 1/16	x	17 1/2	B
	WB2X9883	JX81A	6 1/6	x	11 1/8	A
	WB2X10733	JX81B	6 3/16	x	8 3/4	A
	WB02X10766	JX81C	4 13/16	x	7 11/16	A
	WB02X10943	JX81D	2 9/16	x	11	A
	WB02X10956	JX81H	3 15/16	x	8 11/16	A
		JX81J	3 7/8	x	6 1/8	A
		JX81K	3 7/8	x	10 1/4	A
Magic Chef	HMA11A		6 1/8	x	17 1/2	B
	HMA11C		6 1/16	x	11 1/8	A
Sears/Kenmore	816 9654		5 3/4	x	12 1/4	A
Sharp	RK200		8 1/8	x	18 3/4	C
	RK210		8 5/8	x	13 5/8	B
	RK220		7 1/16	x	11 9/16	A
Whirlpool	4398960		5 3/4	x	12 1/4	A

RANGE HOODS [duct-free/recirculating]

Air Care/Aubrey/ Rangemaster	10-128-00		11	x	13 5/8	B
	10-128-02		10 1/4	x	10 1/4	B
	10-128-03		8	x	9 1/2	A
Broan/Nautilus	97007696		8 3/4	x	10 1/2	A
	97008537		5 3/4	x	11 1/2	A
	99010133		9 1/8	x	11 11/16	B
	99010139		9	x	10 3/16	A
	99010173		6 7/8	x	12 5/8	A
GE/Hotpoint	WB2X2891		10 3/8	x	11 7/16	B
	WB2X2892		11 7/16	x	17 1/16	C
	WB2X3022		12 7/8	x	26 9/16	D
Miami-Carey	07V1544	533	8 3/4	x	9 1/2	A
	07V1520	234	12 5/8	x	20	D
NuTone	27862	VF44	9	x	9	A
	21880	853	10 9/16	x	11 7/16	B
	18722	856	10 5/8	x	23 3/4	D
	K0798	6200	8 1/4	x	11 1/4	A
	56A503-1		8	x	11	A
Sears/Kenmmore/KitchenAid Chambers/RangeAire/Whirlpool	F610-040	883058	8 5/8	x	11	A
	F612-014	261836	12 1/8	x	12 1/8	C
	F612-018	830733	8 5/8	x	10	A
	F6100040-F		6	x	11 1/2	A
	610004		6	x	27 7/8	C
Swanson	670003-1		4 1/2	x	20 3/4	B
	670009-2		10 1/2	x	10 1/2	B
	670014-1		6 5/8	x	10 1/2	A

BATH FANS [duct-free]

NuTone	K0799	w/ grommet	7	x	7 1/2	A
	K1257		4 5/8	x	7	A
	34705	C3053	4 1/8	x	7	A

----- (Additional Filters and Pricing Information on next page) -----

ADDITIONAL CARBONWEB RANGE HOOD FILTERS

BRAND	PART NUMBER	SIZE			PRICE CODE
Amana	D8547701	5 1/8	x	23 11/16	B
Caloric	96137	11 5/8	x	14 7/8	C
	02073956070	5 1/16	x	28 1/16	C
Fasco	8663-8002	10 15/16	x	13 1/16	B
Modern-Aire	1010-Pacer	10 7/8	x	10 7/8	B
RangeAire	F612-009	9	x	19	C
	F612-015	9	x	18 13/16	C
	F612-017	4 15/16	x	23 1/2	B
Roper	285527	4 3/4	x	26 1/4	B
Stewart	22CF	8 15/16	x	8 15/16	A
	34C	11 3/16	x	11 5/16	B
	DCK-1CF	9 1/4	x	14 15/16	B
Tappan	244T037P01	6 5/8	x	8 11/16	A
	244N030F01	5 7/8	x	21 3/4	B
	244T025R01	5 7/8	x	26 3/8	C
Triangle	T-81004	9 1/4	x	9 7/8	A
Ventline	CA-174	8 1/4	x	8 1/4	A
Ventrola	56A101-1	10 1/8	x	10 1/8	B
Welbilt	500004X	10 1/16	x	11 13/16	B

PRICE PER FILTER

PRICE CODE	1 Filter	2-9 Filters	10-49 Filters	50-99 Filters	100+ Filters
A (small)	\$15.00	\$12.00	\$11.00	\$9.00	\$8.00
B (medium)	\$17.00	\$13.00	\$12.00	\$11.00	\$10.00
C (large)	\$20.00	\$15.00	\$14.00	\$13.00	\$12.00
D (extra large)	\$25.00	\$18.00	\$17.00	\$16.00	\$14.00

Prices are subject to change without notice.

Multiplier does not apply to CarbonWeb Appliance Filters.

For your convenience, orders can be faxed, emailed, phoned or mailed.

Minimum order \$15.00. Shipping FedEx, UPS or US Mail. Free shipping within the continental United States.

For Alaska, Hawaii, Canada and Mexico, call for shipping costs. Allow 1 - 3 weeks for delivery. All prices are U.S.

funds. We accept American Express, Discover, Mastercard and Visa, or a check accompanying the order.

D-Mark supplies current, non-current and discontinued sizes and styles.

POPULAR ALUMINUM MESH FILTERS

BRAND	PART NUMBER	STYLE	SIZE				PRICE CODE	
Audrey/Broan/Nautilus	97006931	Basket-shaped	8 3/4	x	10 1/2	x	3/32	A
	97007894		9 7/8	x	11 5/8	x	3/8	B
	99010190	Basket-shaped	10 1/8	x	10 15/16	x	3/32	B
	99010194	Light Lens	11 11/16	x	13 15/32	x	3/8	C
	99010213	Dome-shaped	8	x	9 1/2	x	3/32	A
	99010220		9 1/2 ROUND	x	3/32	A		
Caloric	53446		7 1/4	x	9 1/2	x	3/32	A
GE/Hotpoint	WB2X2893		10 7/16	x	11 7/16	x	3/8	B
	WB2X4263		7 1/4	x	9 1/2	x	3/32	A
	WB 2X6786		3 1/2	x	13 3/8	x	3/32	A
Imperial Cal	1911		10	x	12 1/2	x	3/8	B
Jenn-Air	707929		11 3/8	x	14	x	3/32	C
	715290		6 7/8	x	15 9/16	x	3/32	B
Miami-Carey	3V-2732	Basket-shaped	10 1/8	x	10 15/16	x	3/32	B
	236VP		13	x	20	x	1/2	C
	541VP		9	x	10 3/32	x	3/8	A
NuTone	12520/27140	Round-shaped w/grommet	9 1/2 ROUND		x	3/32	A	
	19555		9	x	11	x	7/16	A
	26146		7 1/4	x	9 1/2	x	3/32	A
	27862		8 15/16	x	8 15/16	x	3/8	A
	K0790	Light Lens	8	x	11	x	3/8	A
	K0791		10 5/8	x	11 3/4	x	3/8	B
	21883		11 11/16	x	13 15/32	x	3/8	C
RangeAire	F610-007	Light Lens	9 7/8	x	11 5/8	x	3/8	B
	610045	Light Lens Combo	11 7/16	x	11 13/16	x	1/2	B
Sharp	PFIL-B002MREO		5 7/8	x	7 7/8	x	3/32	A
	PFIL-A003MREO		3 7/8	x	12 11/16	x	3/32	A
Thermador	19-19-266	Wing-shaped	9 1/2	x	30	x	3/8	D
Whirlpool/Kenmore	415835		7 1/4	x	9 1/2	x	3/32	A
	830190		9 7/8	x	11 5/8	x	3/8	B
	830192		9	x	19	x	3/8	C

Multiplier does not apply to Aluminum Mesh Filters.

For your convenience, orders can be faxed, e-mailed, phoned or mailed.

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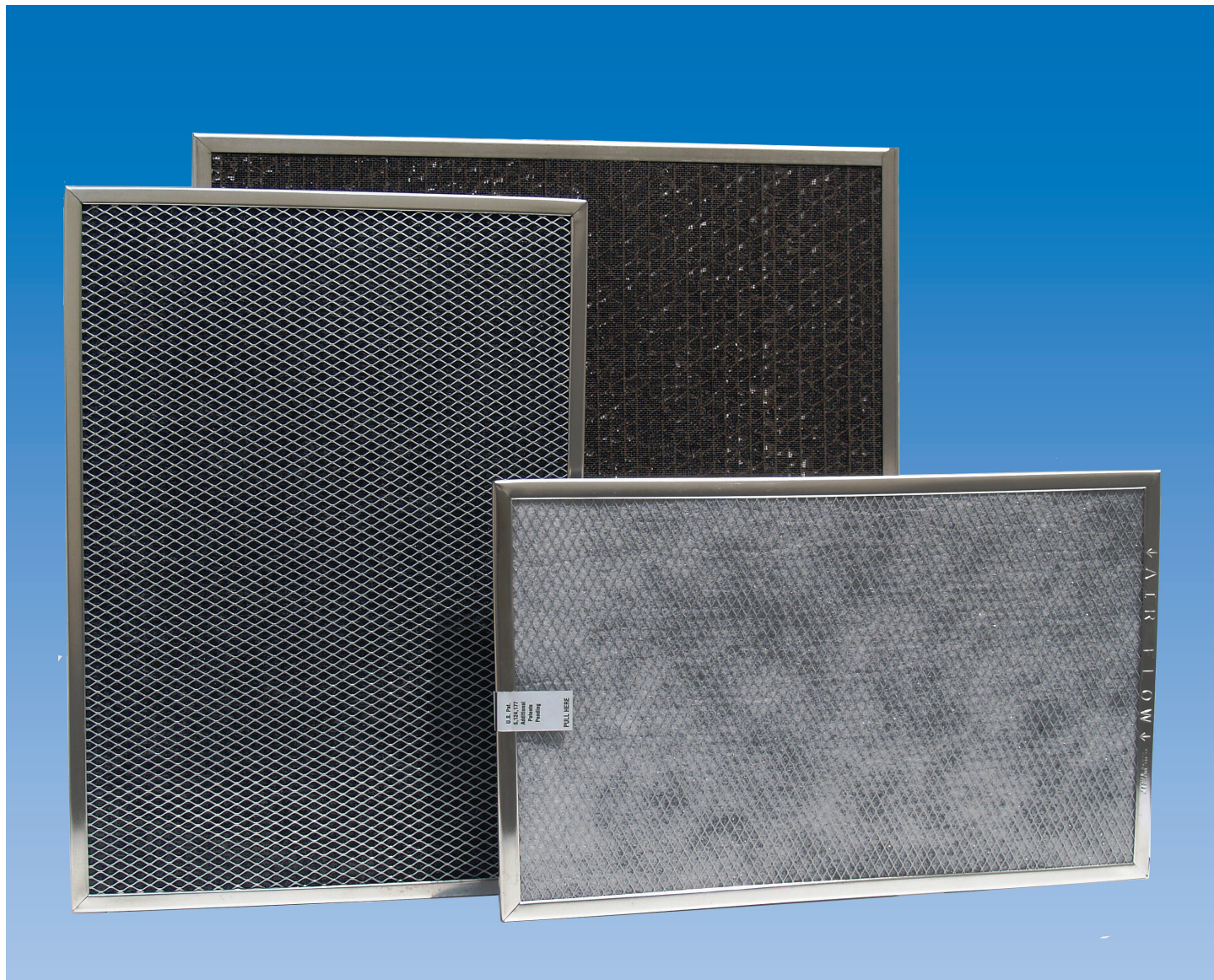
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ELECTRONIC & MECHANICAL AIR CLEANER FILTERS

D-Mark supplies current, non-current and discontinued sizes and styles.



Please see Reverse Side for a listing of popular sizes and ordering information.

To find out more, visit the D-Mark website, or contact D-Mark Customer Service and describe your odor control challenge.

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ELECTRONIC & MECHANICAL AIR CLEANER FILTERS

BRAND	PART NUMBER				SIZE			PRICE CODE
Honeywell								
F57A	CWCMO-01-150-2X-0801	8	x	21 1/4	x	1		F
F57B	CWCMO-01-150-2X-0501	5 1/2	x	21 1/8	x	1		E
F90	CWCMO-38-60P-2X-0F90	19 3/4	x	22	x	3/8		F
Smokemaster								
X11Q	CWCMO-38-045-2X-1001	10	x	22	x	3/8		F
X400	CWCMO-38-045-2X-0401	4 3/4	x	21 3/4	x	3/8		E
Emerson/Electro Air								
50% Fill								
SST10/SRP	HCF-50-50-C-1501	15 1/4	x	19 3/4	x	1/2		G
SST14	HCF-50-50-C-1201	12 1/2	x	15 1/4	x	1/2		G
SST20	HCF-50-50-C-1202	12 1/2	x	19 3/4	x	1/2		G
UST	HCF-50-50-C-0901	9 7/8	x	19 3/4	x	1/2		G
PWM/CONSOLE	HCF-50-50-C-0701	7	x	14	x	1/2		G
SC500	HCF-34-50-C-1001	10 3/4	x	16	x	3/4		G
SC1000	HCF-78-50-C-1701	17	x	21	x	7/8		H
FSC1000	HCF-50-50-C-2002	20	x	20 3/16	x	1/2		H
SSC1000	HCF-38-50-C-1601	16 3/8	x	17 3/8	x	3/8		G
CSC1000	HCF-38-50-C-2001	20 1/4	x	21 1/4	x	3/8		H
Sears								
34-7317	CWCMO-38-045-1X-0903	9	x	15 7/8	x	3/8		E
Smokeeater								
SE 10	CWCMO-38-045-1X-0154	9 3/4	x	9 3/4	x	3/8		E
SE 22	CWCMO-38-045-1X-0111	6 15/16	x	17 1/16	x	3/8		E
SE 24	CWCMO-38-045-1X-0124	13 5/16	x	18 3/8	x	3/8		E
SE 30, HC	CWCMO-38-60P-2X-0006	9 7/16	x	18 11/16	x	3/8		E
SE 40, FS, 800	CWCMO-38-60P-2X-0053	11 1/16	x	17 15/16	x	3/8		E
SE 50, BC, LS, 1500	CWCMO-38-60P-2X-0007	17 15/16	x	18 3/16	x	3/8		F
FC 1000	CWCMO-38-045-1X-0101	11 1/8	x	18	x	3/8		E
GC	CWCMO-38-045-1X-0120	9 11/16	x	13 5/16	x	3/8		E
M	CWCMO-38-045-1X-0015	11 5/8	x	16 1/8	x	3/8		E
400	CWCMO-38-045-1X-0146	10 1/8	x	12 1/2	x	3/8		E
Trion								
132309-001	CWCMO-38-045-2X-1501	15 3/16	x	15 13/16	x	3/8		F
222838-001	CWCMO-38-045-1X-0903	9	x	15 7/8	x	3/8		E

PRICE PER FILTER

PRICE CODE	1 Filter	2-9 Filters	10-49 Filters	50-99 Filters	100+ Filters
E (small)	\$18.00	\$12.00	\$10.00	\$9.00	\$8.00
F (medium)	\$22.00	\$15.00	\$13.00	\$12.00	\$11.00
G (large)	\$26.00	\$17.00	\$15.00	\$13.00	\$12.00
H (extra Large)	\$29.00	\$19.00	\$17.00	\$15.00	\$14.00

Prices are subject to change without notice.

Filters can be manufactured utilizing either CarbonWeb® or Honeycomb construction.

Multiplier does not apply to Electronic or Mechanical Filters.

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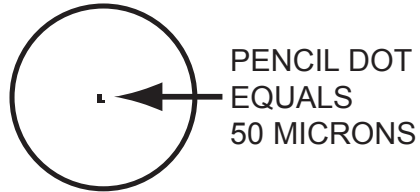
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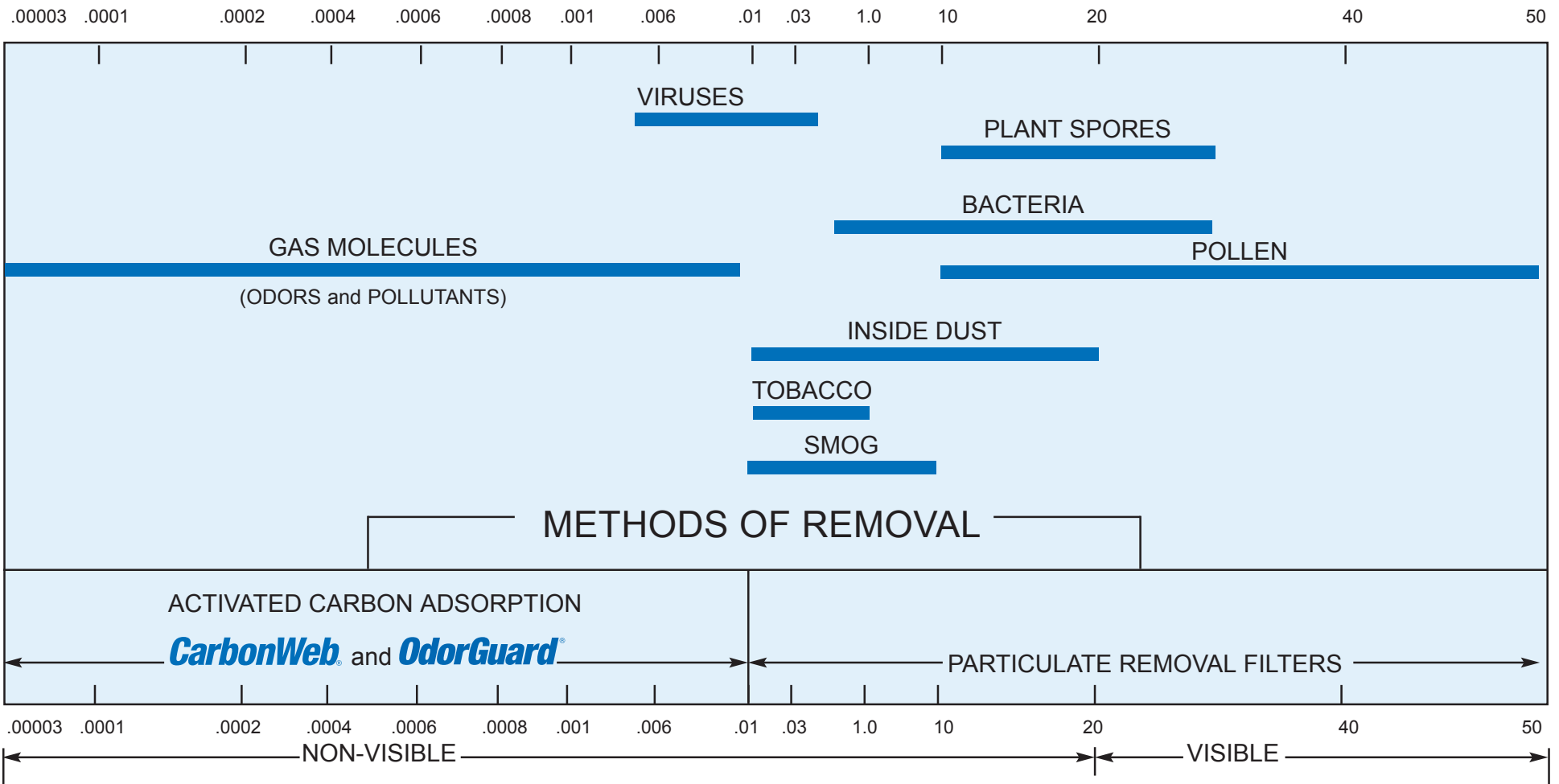
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REMOVAL OF TYPICAL POLLUTANTS

MICRONS



CarbonWeb® and OdorGuard® Odor and Pollutant Capacity Index Chart

SUBSTANCE	INDEX	SUBSTANCE	INDEX	SUBSTANCE	INDEX	SUBSTANCE	INDEX	SUBSTANCE	INDEX	SUBSTANCE	INDEX
Acetaldehyde	2	Carbon Tetrachloride	4	Ethyl Acrylate	4	Iodine	4	Nitro Benzene	4	Resins	4
Acetic Acid	4	Cellosolve	4	Ethyl Alcohol	4	Iodoform	4	Nitroethane	4	Reodorants	4
Acetic Anhydride	4	Cellosolve Acetate	4	Ethyl Amine	3	Irritants	4	Nitrogen Dioxide	2	Ripening Fruits	4
Acetone	3	Charred Materials	4	Ethyl Benzene	4	Isophorone	4	Nitroglycerine	4	Rubber	4
Acetylene	1	Cheese	4	Ethyl Bromide	3	Isoprene	3	Nitromethane	4	Sauerkraut	4
Acids	3	Chemicals	3	Ethyl Chloride	3	Isopropyl Acetate	4	Nitropropane	4	Sewer Odors	4
Acrolein	1	Chlorine	3	Ethyl Ether	3	Isopropyl Alcohol	4	Nitrotoluene	4	Skatole	4
Acryaldehyde	3	Chlorobenzene	4	Ethyl Formate	3	Isopropyl Ether	4	Nonane	4	Slaughtering Odors	3
Acrylic Acid	4	Chlorobutadiene	4	Ethyl Mercaptan	4	Kerosene	4	Noxious Gases	3	Smog	4
Acrylonitrile	4	Chloroform	4	Ethyl Silicate	4	Kitchen Odors	4	Octylene	4	Smoke	4
Adhesives	4	Chloro Nitropropane	4	Ethylene	1	Lactic Acid	4	Octane	4	Soaps	4
Aged Manuscripts	4	Chloropicrin	4	Ethylene Chlorhydrin	4	Lingering Odors	4	Odors	4	Solvents	3
Air Wick	4	Cigarette Smoke	4	Ethylene Dichloride	4	Liquid Fuels	4	Odorants	4	Sour Milk	4
Alcohol	4	Citrus and other fruits	4	Ethylene Oxide	3	Liquor Odors	4	Onions	4	Spilled Beverages	4
Alcoholic Beverages	4	Cleaning Compounds	4	Essential Oils	4	Lubricating Oils and Greases	4	Organic Chemicals	4	Spoiled Food Stuffs	4
Amines	2	Coal Smoke	3	Eucalyptole	4	Lysol	4	Ozone	4	Stale Odors	4
Ammonia	2	Combustion Odors	3	Exhaust Fumes	3	Masking Agents	4	Packing House Odors	4	Stoddard Solvent	4
Amyl Acetate	4	Cooking Odors	4	Fabric Finishes	3	Medicinal Odors	4	Paint and Redecorating Odors	4	Stuffiness	4
Amyl Alcohol	4	Corrosive Gases	3	Fecal Odors	4	Melons	4	Palmitic Acid	4	Styrene Monomer	4
Amyl Ether	4	Creosote	4	Female Odors	4	Menthol	4	Paper Deteriorations	4	Sulfur Compounds	3
Animal Odors	3	Cresol	4	Fertilizer	4	Mercaptans	4	Paradichlorobenzene	4	Sulfur Dioxide	2
Anesthetics	3	Crotonaldehyde	4	Film Processing Odors	3	Mesityl Oxide	4	Paste and Glue	4	Sulfur Trioxide	3
Aniline	4	Cyclohexane	4	Fish Odors	4	Methane	1	Tar	4	Sulfuric Acid	4
Antiseptics	4	Cyclohexanol	4	Floral Scents	4	Methyl Acetate	3	Tarnishing Gases	3	Tar	4
Asphalt Fumes	4	Cyclohexanone	4	Food Aromas	4	Methyl Acrylate	4	Tetrachloroethane	4	Tarnishing Gases	3
Automobile Exhaust	3	Cyclohexene	4	Formaldehyde	2	Methyl Alcohol	3	Tetrachloroethylene	4	Tetrachloroethylene	4
Bacteria	3	Dead Animals	4	Formic Acid	3	Methyl Bromide	3	Tetrahydrofuran	3	Theatrical Makeup Odors	4
Bathroom Smells	4	Decane	4	Freon	3	Methyl Butyl Ketone	4	Perfumes, Cosmetics	4	Tobacco Smoke	4
Benzene	4	Decaying Substances	4	Fuel Gases	2	Methyl Cellosolve	4	Perspiration	4	Toilet Odors	4
Bleaching Solutions	3	Decomposition Odors	4	Fumes	3	Methyl Cellosolve Acetate	4	Persistent Odors	4	Toluene	4
Body Odors	4	Deodorants	4	Gangrene	4	Methyl Chloride	3	Pet Odors	4	Toluidine	4
Bromine	4	Detergents	4	Garlic	4	Methyl Chloroform	4	Phenol	4	Trichlorethylene	4
Burned Flesh	4	Dibromethane	4	Gasoline	4	Methyl Ether	3	Phosgene	4	Turpentine	4
Burned Food	4	Dichlorobenzene	4	Heptane	4	Methyl Ethyl Ketone	4	Pitch	4	Urea	4
Burning Fat	4	Dichlorodifluoromethane	3	Heptylene	4	Methyl Formate	3	Plastics	4	Uric Acid	4
Butadiene	3	Dichloroethane	4	Hexane	3	Methyl Isobutyl Ketone	4	Poison Gases	3	Valeric Acid	4
Butane	2	Dichloroethylene	4	Hexylene	3	Methyl Mercaptan	4	Popcorn and Candy	4	Valeric Aldehyde	4
Butanone	4	Dichloromonoethane	3	Hexyne	3	Methylal	3	Poultry Odors	4	Vapors	4
Butyl Acetate	4	Dichloro-Nitroethane	4	Hospital Odors	4	Methylcyclohexane	4	Propane	2	Varnish Fumes	4
Butyl Alcohol	4	Dichloropropene	4	Household Smells	4	Methylcyclohexanol	4	Propionaldehyde	4	Vinegar	4
Butyl Cellosolve	4	Dichlorotetrafluoroethane	3	Hydrogen	1	Methylcyclohexanone	4	Propionic Acid	4	Vinyl Chloride	3
Butyl Chloride	4	Diesel Fumes	3	Hydrogen Bromide	2	Methylene Chloride	4	Propyl Acetate	4	Viruses	3
Butyl Ether	4	Diethyl Amine	3	Hydrogen Chloride	2	Mildew	3	Propyl Alcohol	4	Volatile Materials	3
Butylene	2	Diethyl Ketone	4	Hydrogen Cyanide	3	Mixed Odors	4	Propyl Chloride	4	Waste Products	4
Butyraldehyde	3	Dimethylaniline	4	Hydrogen Fluoride	2	Mold	3	Propyl Ether	4	Waterproofing Compounds	4
Butyric Acid	4	Dimethylsulfate	4	Hydrogen Iodide	2	Monochlorobenzene	4	Propyl Mercaptan	4	Wood Alcohol	3
Camphor	4	Dioxane	4	Hydrogen Selenide	3	Monofluorotrichloromethane	3	Propylene	2	Xylene	4
Cancer Odor	4	Dipropyl Ketone	4	Hydrogen Sulfide	3	Moth Balls	4	Propyne	2		
Caprylic Acid	4	Disinfectants	4	Incense	4	Naphtha (Coal tar)	4	Putrefying Substances	3		
Carbolic Acid	4	Embalming Odors	4	Indole	4	Naphtha (Petroleum)	4	Putrescine	4		
Carbon Bisulfide	3	Ethane	1	Inorganic Chemicals	3	Naphthalene	4	Pyridine	4		
Carbon Dioxide	1	Ether	3	Incomplete Combustion	3	Nicotine	4	Radiation Products	2		
Carbon Monoxide	1	Ethyl Acetate	4	Industrial Wastes	3	Nitric Acid	3	Rancid Oils	4		

Some of the contaminants listed in the table are specific chemical compounds. Some represent classes of compounds and others are mixtures and of variable composition. Activated carbons capacity for odor varies somewhat with the concentration in the air, with humidity and temperature. The numbers given represent typical or average conditions and might vary in specific instances.

The capacity index has the following meaning-

4. High capacity for all materials in this category. One pound takes up about 20% to 50% of its own weight - average about 1/3 (3301/3%). This category includes most of the odor causing substances.
3. Satisfactory capacity for all items in this category. These constitute good applications but the capacity is not as high as for category 4. Adsorbs about 10% to 25% of its weight - average about 1/6 (16.67%).
2. Includes substances which are not highly absorbed but which might be take up sufficiently to give good service under the particular conditions of operation. These require individual checking.
1. Adsorption capacity is low for these materials. Activated Carbon cannot be satisfactorily used to remove them under ordinary circumstances.

* For the asterisked compounds, impregnated carbon or activated alumina with KMnO₄ will greatly increase the adsorption ability.

*Innovators in Odor
and Pollution Control*



130 N. Groesbeck Hwy.
Mt. Clemens, MI 48043
www.dmarkinc.com

586.949.3610
fax 586.949.4181
dmark@dmarkinc.com

ACTIVATED CARBON

Carbons for air purification applications are normally activated by utilizing a gas fired, multiple hearth furnace where atmosphere, time, and temperature are used to control oxidation-activation.

Activation greatly increases the “internal surface area” of the carbon which is a prime requisite for good adsorption.

Activated carbon particles that are hard, dust free and have both a large “surface” area available for adsorption and a strong retention capacity are suitable for air purification applications.

WHY USE ACTIVATED CARBON?

When purifying air, both particulate matter and gaseous/vaporized compounds must be removed. Activated carbon is used only to adsorb materials that are in the gaseous or vaporized state; materials that cannot be removed by particulate filters.

Activated carbon has proven itself to be the most effective means of odor and pollution control available because of its high affinity for a broad spectrum of chemical compounds.

Activated carbon is a cost effective means of achieving compliance with ASHRAE 62-1989 and providing quality indoor air.

By properly utilizing activated carbon adsorption:

1. A high single pass efficiency will be achieved and odor/pollution control will not be solely dependent upon recirculation.
2. Many building codes will allow a greater portion of air to be recirculated, thereby lowering winter heating and summer cooling costs.
3. Efficiency is not dependent upon the compound being soluble, nor is it limited by the laws of partial pressure.
4. Nothing is added to the air stream and clean pure air can be enjoyed.
5. Corrosion resistant materials are not normally required.

ACTIVATED CARBON WILL ABSORB:

Activated carbon will adsorb numerous chemical compounds, and preferentially adsorbs them to moisture.

In many cases, odors and pollutants are made up of several compounds.

Here is a partial list of gases that are of concern in air purification systems and can be removed with activated carbon.

Organic Compounds: Acids, Alcohols, Aldehydes, Chlorinated Hydrocarbons, Esters, Ethers, Hydrocarbons, Ketones, Mercaptans, Amines.

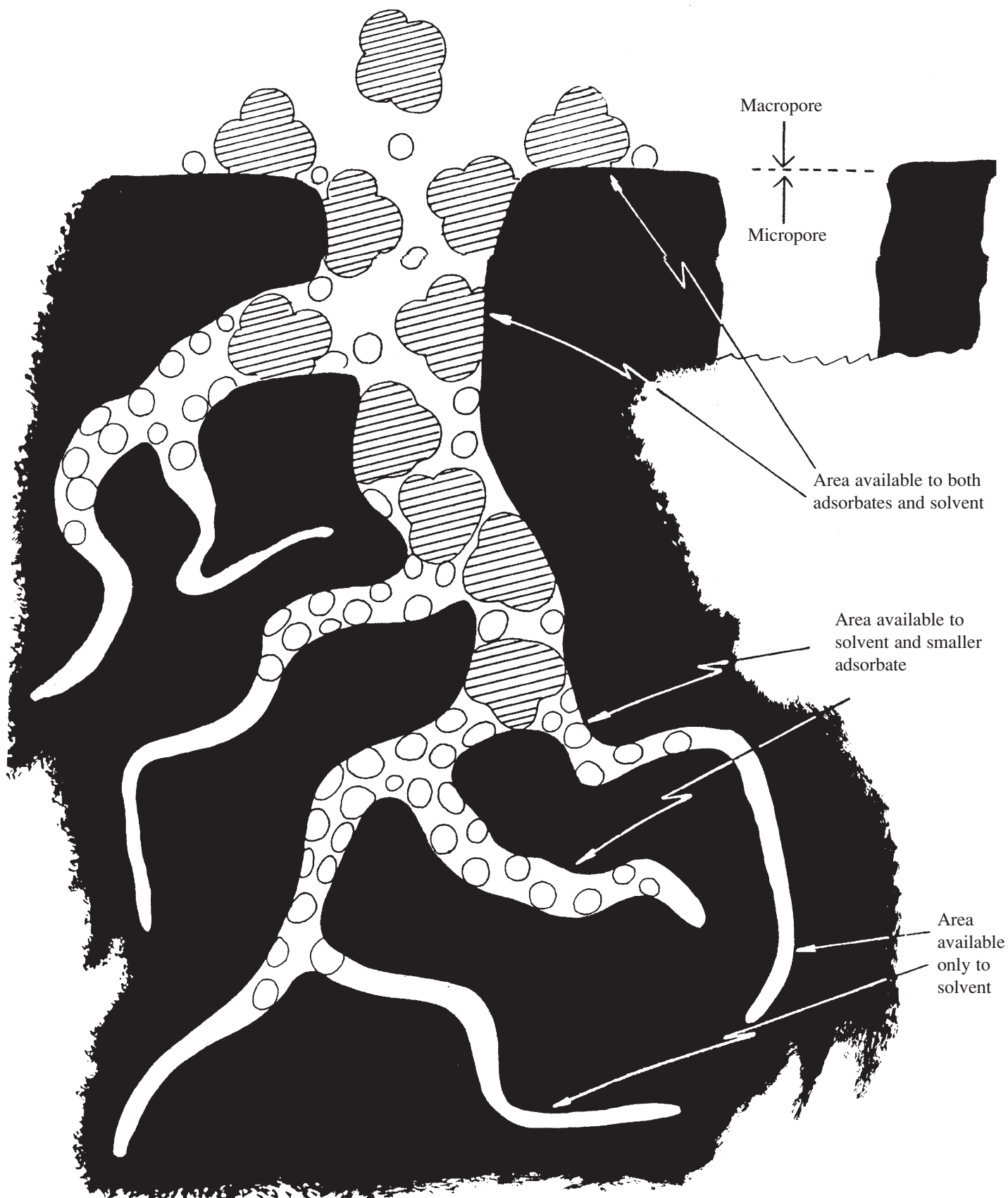
Inorganic Compounds: Halogen Acids, Halogens, Sulphuric Acid, Sulphur Dioxide, Phosgene.

Miscellaneous: Human and Animal Body Odors, Cooking, Foods, and Waste Odors.

Applications:

1. Eliminate contaminants from outside air for airports, libraries, hospitals, research facilities, office buildings, computer rooms, electrical rooms.
2. Prevent odor build-up in recirculated air and lower air handling costs in stadiums, auditoriums, municipal buildings, and restaurants.
3. Prevent discharge of objectionable materials to the atmosphere by using adsorption as the final step in processing effluent gases.

CONCEPT OF MOLECULAR SCREENING
IN MICROPORES



ACTIVATED CARBON

- ▶ How is it used?
- ▶ How does it work?
- ▶ How is it applied in HVAC applications?



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ACTIVATED CARBON

This presentation was originally written in 1992. It has been revised in 2007 to reflect the newer carbon filter products that are now available and being utilized throughout the HVAC industry.

Introduction

Improved Indoor Air Quality continues to be one of the MAJOR issues facing the HVAC industry.

The Air Movement Industry has been very effective in the areas of human comfort and the removal of particulates. However, to totally "clean" the air, the gases and vapors – the chemical pollution that affects health and productivity – must also be removed.

For HVAC applications, adsorption is the most effective and the most economical process. Activated carbon, known as the universal adsorbent, is the most effective adsorbent.

A variety of products utilizing activated carbon are readily available. Some have been in use for decades, others for 10 years or less. When applied properly, the vast majority have proven to be effective in eliminating the chemical pollution found in HVAC systems.

Why Is It Used?

Theoretically, we can remove almost all particulate matter from the air stream. We are now faced with "how should the gases and vapors – the chemical pollution – be removed?"

HEPA filtration is effective down to the .3 micron range and will remove some particulates smaller than .3 microns. Gases and vapors are .01 microns and smaller. Benzene and naphthalene, two compounds that are strongly adsorbed by carbon, are approximately .0006 and .0007 microns respectively. One micron equals 1/25,400 of an inch.

Very simply, particulate filters do not, and can not, remove material that is this small and is a gas. If particulate means cannot be used to remove gases, then how can they be removed?

For HVAC applications, where the concentrations are very low and the contaminant loading varies constantly, adsorption has proven to be the most effective and the most economical process.

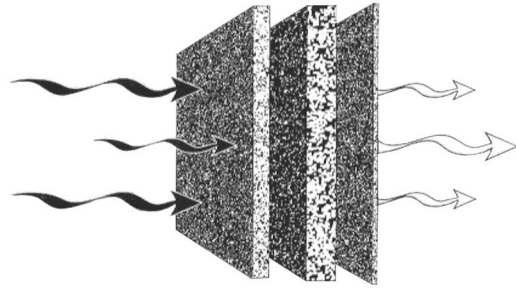
Adsorption with activated carbon is also the process of choice for applications such as gas masks, space capsules, nuclear submarines and radioactive iodine removal (nuclear plants).

Are there other processes to remove gases from an air stream? Certainly, there are other processes. When higher concentrations are present, incineration, chemisorption and solvent recovery [an adsorptive process] all have their places.

Absorption vs. Adsorption

A question that is often asked – "What is the difference between **ABSORPTION** and **ADSORPTION**?"

ABSORPTION can be understood if we think of sugar being dissolved in water and mixing evenly throughout, or cream being mixed into coffee. Industrial absorption would be a gas being **ABSORBED** (taken into and mixing evenly) by a "scrubbing" liquid.



In contrast, **ADSORPTION** is the physical attraction and adherence of gas or liquid molecules to the surface of a solid. The attractive force is very small, van der Waal's forces, and exists between any two bodies, such as between the earth and the moon. Gas molecules are **ADSORBED** by activated carbon.

Why Is It Known As The Universal Adsorbent? Why Is Activated Carbon Used As The Adsorbent With HVAC Processes?

Activated carbon is truly a unique material. There are no other materials, natural or man-made, that will do all that it will do.

Activated carbon:

1. Has a capacity for virtually any vapor contaminant; it will adsorb "some of almost any vapor".
2. Has a large capacity for organic molecules, especially solvents.
3. Will adsorb and retain a wide variety of chemicals at the same time.
4. Has an extremely large capacity to catalytically destroy ozone, a major component of smog.
5. Works well under a wide range of temperature and humidity conditions.
6. Adsorbs odors and chemicals preferentially to moisture. It is not a desiccant and will release moisture to adsorb chemicals.
7. Can be used as a carrier of one material to attract and hold or react with another material.
8. Is inert and safe to handle and use.
9. Is available and affordable.

What Is It?

It is a material that has been treated (activated) to increase the internal surface area of the structure to the range of 950 to 1150 square meters per gram for gas phase applications. The internal area is the area that holds the adsorbed chemicals, in effect, this is where the "work" is done.

How Much Internal Area Is Available For "Work"?

Using the number 1000 square meters per gram, which equals 1197 square yards, and multiplying 1197 by 454 (454 grams/lb.), results in 543,438 square yards of available surface area per pound of carbon. Comparing this to a football field, which is 50 by 100 yards, or 5000 square yards, this would be the surface area of more than 100 football fields.

When the 543,438 sq. yards is multiplied by 9 (9 sq. ft./sq. yd.), it equals almost 5 million square feet of available surface area per pound of carbon. Utilizing a maximum working capacity of 33%, up to 1,650,000 square feet would be available for adsorption.

How Much Gas, Or How Many Gas Molecules Can Be Adsorbed And "Held" On This Area?

Consider the gas molecule benzene, which has a molecular weight of 78 and is approximately 6×10^{-4} microns in diameter. Utilizing one pound (454 grams) of carbon and a maximum capacity of 33%, then 150 grams of a gas, (in this case, benzene) can be adsorbed.

Dividing 150 grams by 78 gram moles of benzene yields 1.9 gram moles of benzene that can be adsorbed by one pound of carbon. Multiplying the Avogadro number*, 6.023×10^{23} , by 1.9 yields 11.44×10^{23} molecules.

Therefore, 1 pound of carbon would have enough internal surface area to adsorb (hold) 11.44×10^{23} molecules the size of benzene.

How Many Molecules Is 11.44×10^{23}

The national debt is over seven trillion dollars, (\$7,000,000,000,000). Two trillion times the national debt would be an approximation of 11.44×10^{23} . Simply put, whether the working capacity for a specific application is 33%, 5%, or 2% - this is a huge number of gas molecules!

*The Avogadro number states that the number of molecules in a gram mole of a gas is 6.023×10^{23} .

Activated Carbon

There are many types and grades of carbon that can be used for adsorption. There are carbons used for liquid and gas phase applications; they are not interchangeable. For the purpose of this presentation, only gas phase carbons that are used for general HVAC applications will be addressed.

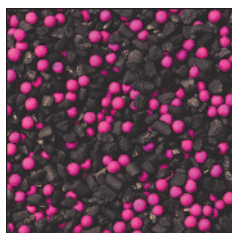
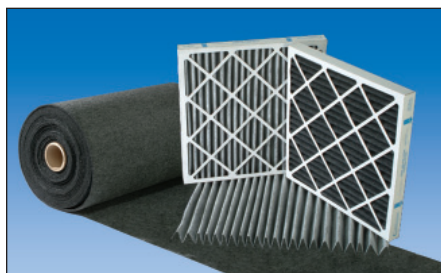
The commercial quality HVAC carbons that are being manufactured today are produced from either coal or coconut shells. These materials are interchangeable, as long as the activity level and the average particle size are the same.

Activated Carbon Specifications For HVAC Applications

The HVAC industry currently uses 60% activity** carbons in a variety of mesh sizes depending upon the manufacturing process and the application. In the newer products, where fibers and granular carbons are blended, 20/50 mesh carbons are applied. Where polyesters are impregnated by a slurry process, fine carbon powders are used. For the older filled trays, used in Vbanks, either 6/8 mesh (3mm) [pelletized] or

6/12 mesh [granular] are utilized. I believe there are definite advantages of pelletized over granular materials, but either of these materials will do a satisfactory job.

**This activity level will insure that the internal surface area is in the range of 1000 - 1100 square meters/gram.



▲
*OdorGuard Pleated
Filters and CarbonWeb
Roll Media*

▲
*CarbonWeb Media with
Activated carbon and
impregnated amina*

Activated Carbon or Activated Charcoal?

The term CHARCOAL is used widely, and the question often asked "What is the difference between activated carbon and activated charcoal?"

There is only one material, and the terms are used interchangeably. Normally, those who are in the carbon business will use the term carbon. Those outside the industry, or just learning, will use the term charcoal. ASTM - The American Society of Testing Materials - utilizes the term carbon.

How Does It Work? What Does It Do?

Activated carbon ADSORBS a wide variety of gases and vapors - chemical pollutants.

Whether there is one gas molecule and one carbon particle, or many of each, the adsorption process is the same. The physical process begins with a gas molecule coming into contact with the surface of an activated carbon particle and coming to rest in a large surface pore. Then, due to unbalanced forces on and within the carbon particle, the gas molecule will begin to move "down" into the carbon particle - into the smaller pores, where it will finally stop and be held in place. At some point between the surface and the "stopping point", this gas molecule will condense and become a liquid particle.

For those who would like a more technical version: The adsorbate diffuses thru the surface film to the macropore structure. Then, due to van der Waals' forces, the gas molecule migrates into the micropore structure, condensing during this movement, and finally stopping when either the forces become balanced or it becomes physically blocked.

This molecule, which was an objectionable gas, will remain a liquid inside the carbon until it receives enough energy, in the form of heat, to excite it.

If this condition arises, the molecule will begin moving toward the surface. If enough energy (heat) is absorbed, it will be vaporized, returned to a gas and be released back into the air stream, i.e. the process will be reversed.

In HVAC applications, there is normally not enough heat to excite, or re-energize, adsorbed molecules. With regular carbon filter or bulk carbon "changeouts", sufficient capacity will always be available.

It is interesting to note, the adsorbed gases that condense and become liquid molecules will "line" the internal surface area - and this "lining" will be one (and only one) molecule thick.

How Is It Applied In HVAC Applications?

As a reminder, this presentation deals only with the removal of gaseous and vapor contaminants.

The application of carbon to HVAC installations is considerably different when compared to how carbon is applied to solvent recovery systems and other industrial removal applications.

For the latter, air streams with hundred to thousands of parts per million (ppm) of gas molecules are recovered, or removed, with beds that can be several feet thick and contain thousands of pounds of carbon.

For HVAC applications, thin bed filters with comparatively small amounts of carbon are utilized. Therefore, it is not only important that these differences be recognized, but that the parameters be defined.

First, air in a structure can be treated as it:

1. Enters.
2. Leaves.
3. Is re-circulated.
4. Or a combination of the above.

For the majority of HVAC applications, the air to be treated is a combination of air entering (make-up) and air that is re-circulating. The gaseous contaminant loading that should be removed:

1. Is always a combination of many odors and pollutants – chemicals.
2. Is normally unknown either as to the chemical make-up, the amount of each pollutant, or the total loading.
3. Varies constantly with changes in occupancy levels, activity within or without the structure, and shifts in the wind.
4. Is in the 1 ppm range.

Loading Variations

In four above, the “1 ppm range” has been used. When the loading drops below 1 ppm, down to the ppb [parts per billion] or to the .1 ppb range and below, there is no concern. When the loading increases, which it can do for short periods, there are concerns and questions.

Knowing that the industry has utilized, and continues to utilize, thin bed carbon filters, the following situations must be considered:

How high are these higher loadings (peaks), and how long do they last?

Answer: Unless the structure has been studied over a period of time, there is no definite answer. Ten to 20 ppm would be a heavy overload and may be within reason for this application. This condition may last for minutes to hours as opposed to days.

During the peaks, how effective is the filtration system?

Answer: The percentage of these peaks, which exceeds the design capability of the filter or the capacity of the carbon at that time, will pass thru and into the inside air. Since the air is being re-circulated, these peaks will be adsorbed on future passes.

As stated earlier, carbon must be changed on a regular basis. This regularity, which should be established during the first year of operation by utilizing test samples, will insure that these peaks, typical to that installation, will be quickly adsorbed.

How Much Carbon Should Be Used?

The old ASHRAE specification of 45 pounds per 1000 cfm per year has been used for many years as the design guideline. In all probability, the vast majority, if not all, of the older carbon V-banks that are being utilized in airports, sports stadiums, and commercial buildings were designed with these numbers. When this amount of carbon is changed regularly, these filters perform effectively.

Is this the optimum amount of carbon? From experience with many installations, the answer would certainly be “This

has proven to be enough carbon.” A remaining question is “Would somewhat less carbon be as effective; and if so, how much less?” The older V-banks were “designed” to be changed out in approximately one [1] year. This time would be adjusted, based on the specifics of the application. Obviously, utilizing less carbon per filter, but changing more frequently, would produce similar results.



Ring Panel Filters with self-sealing edges and an internal wire “ring” for added support

For the newer “clean room” type applications, which may call for the removal contaminants in the ppb or less range, filters with significantly less carbon are being used successfully.

Commercial vs. Industrial Application

The carbon adsorption products that have been designed and utilized for HVAC applications are very effective. When they are misapplied in industrial applications, problems can and do arise.

Normally, it is not that the carbon does not adsorb, but rather the concentration exceeds the capability of thin bed products, and neither the pass efficiency nor the life (capacity) are satisfactory.

Industrial applications, although they will contain many of the same chemicals found in HVAC applications, can be defined as having:

1. Primarily one contaminant (chemical).
2. A chemical that is known, both as to it’s formulation and quantity (ppm).
3. Either a constant quantity or a constant range.
4. A loading well above the 1 ppm range.

Very simply, this will be, by comparison, a heavy-duty application, and the information concerning the contamination will be known.

One example that will crystallize the differences between these applications:

A printing company with a large printing press may have a solvent recovery system to recover the solvents from the inks. This system will remove the high concentrations of solvent with large amounts of carbon. However, the solvent “leakage” that escapes into the general air and into the air handling system will be heavily diluted and be just one of the many other chemicals in the HVAC system. This air, that re-circulates thru the offices, lunchrooms, laboratories, etc., would now be treated as an HVAC application, with thin bed products.

Adsorption may not be the most effective process for industrial applications. Companies skilled in these fields should be consulted to make the determination regarding the most effective process and system.

Non-Vented Areas

Activated carbon will adsorb without the air being drawn thru it, i.e. without a fan or blower. This is of importance when there are rooms or closed areas that do not have ventilation ducts, electricity and/or where the use of a portable air cleaner would not be practical. Carbon pads can be placed in these areas and be a very effective solution.

How Does Carbon Work in Non-Vented Areas?

Gas molecules will disperse (mix) themselves evenly throughout a given area, in accord with the "Perfect Gas Laws". Activated carbon will attract and adsorb the odor or pollutant molecules to which it is closest, causing an unequal mixture to result. Whereupon the gases will redistribute themselves, the carbon will again adsorb the closest, and the process will continue until the air is "cleaned" or the carbon reaches its capacity.

A relatively small amount of carbon can, and will, keep these types of areas odor and pollutant free.

An example of utilizing a small amount of carbon is to maintain a refrigerator odor free. By adsorbing gases, it thereby eliminates the transfer of odors and tastes from one food to another, and to ice cubes.

Activated Carbon Adsorption Products

For HVAC applications, adsorption products can be divided into several categories:

Panel filters, extended surface filters and V-banks.

1. **Panel Filters:** Panels filters are available in a variety of designs and configurations. They are available in a variety of thickness, 1", 2" and 4", with 2" being the predominant commercial product.

Panel filters can in turn be divided into two groups:

- A. **The newer products:** Carbon filter products that are designed to have a low pressure drop and are normally interchangeable with particulate filters.

Filters using either pads or pleats, contain either granular or powdered carbon. Carbon is either integrated with fibers during manufacturing or impregnated via a slurry process into an existing non-woven product.

For 2" filters, in either pad or pleat form, carbon loadings will vary from approx. 300 grams per square foot of filter face area, down to about 35 grams per square foot.

Products include, three stage filters, pads, pads in die cuts, pleats and ring panels.

- B. **The older products:** Filled or honeycomb filters have relatively high pressure drops and therefore can not be interchanged with particulate filters. They are utilized in V-banks.

Filled filters have perforated metal faces, held in place with welded metal spacers, surrounded with a metal frame and filled with carbon. Honeycomb filters utilize a honeycomb shaped material as the internal structure, which is either partially or completely filled with carbon. The carbon is

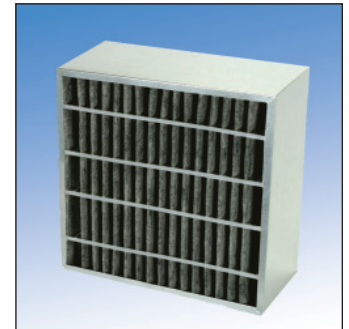
contained within the honeycomb structure by a thin netting and a metal frame which surrounds the structure.

As filters, they are available in ¾", 1" and 2" thickness. When used in V-banks, the ¾" and 1" "trays" account for almost all HVAC applications. The 2" thickness is used only in special applications.

Both filters contain packed granular carbon. Loadings vary from approx. 2.1 lbs/sq. foot of filter face area for a 1" filled filter, to slightly under 1 lb/sq. foot for a ¾" honeycomb filter.

2. **Extended surface filters [Rigid Cells]:**

Deep Pleat, rigid cell extended surface filters, are the newer products. They are applied in many normal HVAC applications, previously reserved for the older V-banks. They are also used in clean room and microelectronic applications where contaminants are in the ppb or ppt [parts per trillion] range.



These "Rigid Cells" utilize several different types of "thin bed" activated carbon media, that are formed into pleats that are 4", 6", or 12" deep, the later being by far the most popular. The "deep" pleats are then sealed into a metal frame [rigid cell]. They can be used individually, but are normally used in a filter bank.

Activated carbon loadings for a 24" x 24" x 12" cell, vary from as high as approx. 7 lbs, to as low as slightly over 1 lb, depending upon the carbon filter media that is utilized.

3. **V-Banks**, the older products, are still in use. They are used in airports, stadiums and commercial buildings and in many clean room applications.

These products will offer from approx. 30 to 45 pounds of carbon per 1000 cfm of air, and are available for flow rates of 500, 1000 or 2000 cfm.

Virtually all units will have a face area of either 24" x 24" or 12" x 24"; utilize removable trays, V sections, or have a serpentine bed configuration; can be applied individually, or be built into filter banks.

Product Application

The application of these products can be divided into two areas – either new construction or retrofitting existing installations. When a new structure is being designed, the engineer has the option of utilizing any of the above products. When adsorption applications arise in existing installations, panel filters, although they will need to be changed more frequently to offer similar capacities, offer the advantage of interchangeability, thereby eliminating the need to alter the existing air handling system.

[HVAC Applications For Activated Carbon](#)

As stated earlier, activated carbon, the universal adsorbent, will adsorb “some of almost any vapor”. Detailed lists of gases and vapors – chemical compounds – are available from carbon and equipment manufacturers. The following is a partial list of gases that are of concern in the air purification systems and can be removed with carbon:

ORGANIC COMPOUNDS: Acids, Alcohols, Aldehydes.

CHLORINATED HYDROCARBONS: Esters, Ethers, Ketones, Mercaptans, Amines.

INORGANIC COMPOUNDS: Halogen Acids, Halogens, Sulphuric Acid, Sulphur Dioxide, Phosgene.

MISCELLANEOUS ODORS FROM: Humans, Animals, Foods, Cooking, and Waste Processes.

[Where Are The HVAC Applications?](#)

Odor and gaseous pollution occurs in:

- airports, libraries, hospitals, research facilities, office buildings, computer rooms.
- clean rooms, electrical rooms, microelectronic applications.
- retail stores, print shops, stadiums, auditoriums, municipal buildings, restaurants.
- homes, pet hospitals, pet groomers, medical laboratories, nursing homes and health care facilities.
- and the list goes on.

[Conclusions](#)

The removal of chemical contaminants, which affect the health and productivity of many Americans at work and at play, must and will continue to be addressed by the Air Movement Industry.

Due to the comparatively low contamination levels found in HVAC applications, adsorption has, and will continue to be, the most economical process.

Activated carbon, the universal adsorbent, has a capacity for virtually all vapor contaminants and will adsorb and retain a wide variety of chemicals at the same time.

Adsorption products utilizing activated carbon are available from a variety of sources. These products, when properly applied and maintained, can eliminate the vast majority of pollution problems caused by the gases and vapors – the chemical pollution – found in HVAC systems.

[Acknowledgments](#)

A special thanks to Joe C. Enneking, Vice-President, Nuclear Consulting Services (NUCON), Columbus, Ohio. A friend and colleague for many years, Mr. Enneking is truly an expert in the field of activated carbon, solvent recovery, and nuclear air cleaning.

Written by: James W. Kasmak Jr., President, D-Mark, Inc., Chesterfield, Michigan.

D-Mark is a manufacturer of activated carbon odor and pollution control filters and roll products. These products include filters for the HVAC industry, Air Cleaners and Appliances.

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