

EXTRUDED CARBON FILTERS

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Matrikx+1 extruded carbon filters offer the highest chemical adsorption capacity of any filter having similar dimensions, with comprehensive removal of chlorine and chemicals that contribute to taste and odor and high VOC removal capacity. **Matrikx+1** filters provide 2µm absolute particulate filtration and extended life as a fine sediment and silt control filter. **Matrikx+1** filters flow in the radial (outside-to-inside) direction, providing increased dirt capacity and low pressure drop. Unlike granular activated carbon (GAC) filters, **Matrikx+1** filters will not channel or bypass, due to the extreme uniformity of their extruded activated carbon core.

Service life of **Matrikx+1** filters is greatly extended by two layers of prefiltration media consisting of a coarse 15µm, outer prefiltration layer and a fine, 5µm, inner layer. **Matrikx+1** provides the longest service life of any high-contaminant-level-removal carbon filter. Recommended installations are in fluids having upstream 1-5µm prefilters.

Function: removal of chlorine, volatile organic compounds (VOCs), chlorinated hydrocarbons, particulates, and organic impurities from water, aqueous solutions or suspensions, and many organic solvents (call KX Industries for advice regarding non-aqueous applications).

Applications: residential and industrial water purification systems, industrial effluent water treatment, food service, pre- and post-RO systems, industrial makeup, product rinse, and process water.

Features:

- Bonded fine-mesh carbon in high-integrity structure.
- 2µm Absolute Filtration
- Integral Extruded Construction.
- Two-layer In-Depth Prefiltration.
- Custom Designs Available.

Benefits:

- Highest Chemical Adsorptive Capacity.
- Highest Adsorptive Efficiency.
- Highest VOC Reduction.
- Highest TOC Reduction.
- No Channeling/No Fluidizing/No Bypassing.
- Maximum Service Life.
- No Release of Carbon Fines.
- Residential & Industrial Applications.



Chlorine Reduction

Test Results: Standard 2.50" O.D. x 1.25" I.D. x 9.75"L. **Matrikx+1** extruded carbon filters removed all detectable free chlorine (<0.05 ppm) to provide greater than 99% removal of free chlorine from an influent containing 6 ppm free chlorine, continuously flowing at 1 gpm, and maintained this removal efficiency to the end of the test (total flow of 6,000 gallons).

Test Conditions: Two randomly selected production cartridges were evaluated for chlorine reduction claims under the following test conditions.

Flow: 1 gpm, constant.

System Pressure: 60 psi, constant.

Prefiltration: 0.2µm absolute.

Influent water: 250 gallon batches.

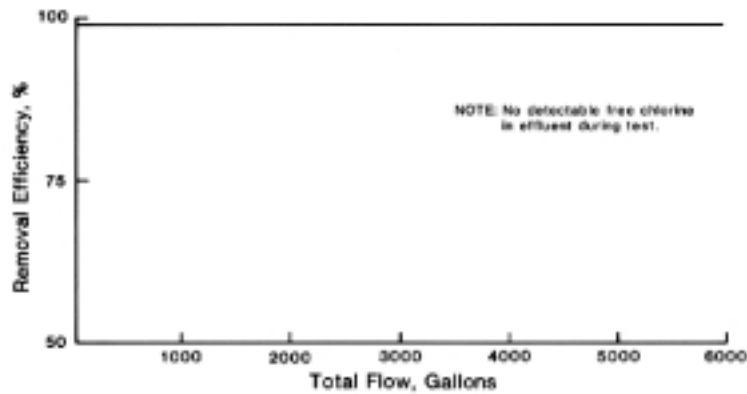
Chlorine challenge: sodium hypochlorite @ 6 ppm FAC (free available chlorine).

Analysis: Standard methods for the examination of water and wastewater method number 4500-Cl G, used to analyze both influent and effluent water.

Total challenge: 6,000 gallons.

Influent water analysis:

Turbidity: <1.0 NTU,	Hardness: 171 mg/L
Prefiltered with 0.2 µm absolute prefilter.	Alkalinity: 26.8 mg/L
pH: 7.9 ± 0.5	Temperature: 24° ± 2° c.
TDS: 190 mg/L	Phosphate: <1 mg/L



Source of test data: Spectrum Laboratories, New Brighton, Minnesota.

Flow Resistance

Test Results: Standard 2.50" O.D. x 1.25" I.D. x 9.75"L. **Matrikx+1** extruded carbon filters were tested with municipal tap water from Bridgeport, CT, at 60 psig system pressure, to determine differential-pressure vs. flow curves. **Matrikx+1** filters have an initial flow resistance of 3.0-3.5 psid at 1.00 gpm.

Test Conditions: Three randomly selected 2.50" O.D. x 9.75"L. **Matrikx+1** extruded carbon filter cartridges were tested with municipal tap water from Bridgeport, CT at 60 psig system pressure, to determine differential-pressure vs. flow curves.

Influent water: Bridgeport, CT municipal water.

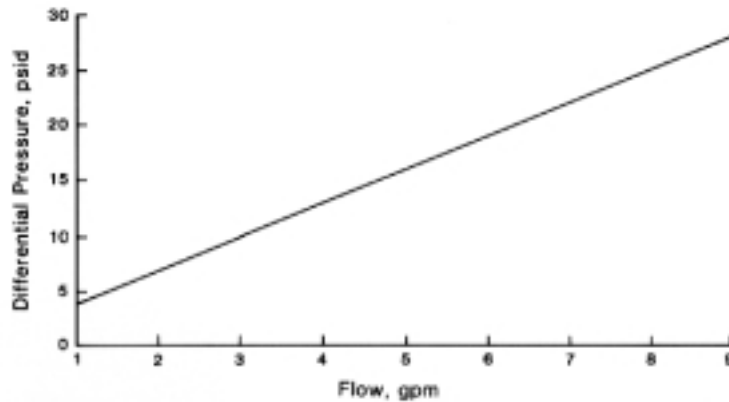
pH of Influent water: 6.3-6.5.

Temperature: 16°C.

Range of tested flows: 1-9 gpm.

Duration of test: approx. 4 minutes.

Instrumentation: Omega Engineering FL710 Series, 1 to 11 gpm range, with 0.2 gpm accuracy. Orange Research, Inc. differential pressure gauges, 0 to 40 psid.



Source of test data: KX Industries, LP, Bridgeport, CT.

Chloroform Reduction

Test Results: Standard **Matrìkx**+12.50" O.D. x 1.25" I.D. x 9.75"L. filter cartridges were tested at flows of 0.5 and 1.0 gpm, with an average influent challenge of 300 ppb chloroform. The **Bestfilters.com** cartridges removed >95% of influent chloroform for approximately 500 gallons at 1.0 gpm, and for approximately 750 gallons at 0.5 gpm.

Test Conditions: Two randomly selected cartridges were evaluated for chloroform reduction at each flow rate.

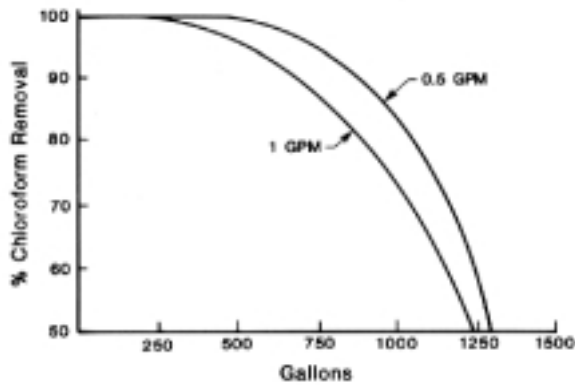
Flow rate: 0.5 gpm and 1.0 gpm.

System Pressure: 60 psig.

Average Influent chloroform: 300 ppb

Influent water analysis:

Turbidity: <1.0 NTU,	Hardness: 171 mg/L
Prefiltered with	Alkalinity: 26.8 mg/L
0.2 µm absolute	Temperature:
prefilter.	24 ± 2°c
pH: 7.9 ± 0.5	Phosphate:
TDS: 190 mg/L	<1 mg/L



Source of test data: Spectrum Laboratories, New Brighton, Minnesota.

Particulate Removal

Test Results: Five 2.50" O.D. x 1.25" I.D. x 9.75"L. **Bestfilters.com** filters were tested for particulate removal with two different particle counting instruments and demonstrated greater than 99.9% removal of 2 µm particles.

Test Conditions #1: Performed by KX Industries, LP.

Instrumentation: Met-One model 233-S157; dual solid-state laser detectors.

Instrument capability: 2 µm to 200 µm.

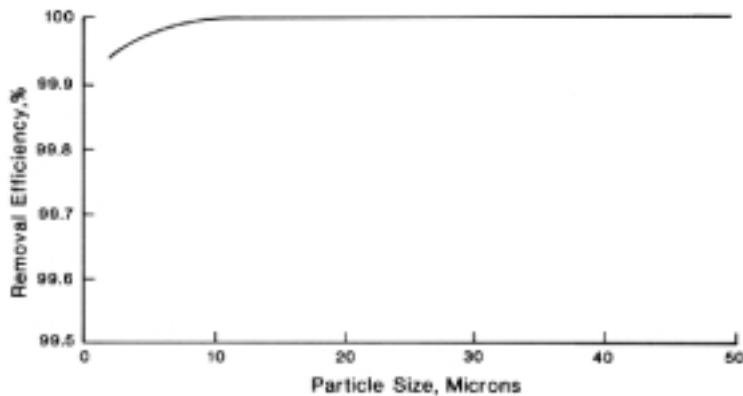
Influent water temperature: 16°C.

Challenge: 1,500 particles/ml influent within 2 µm to 50 µm.

Flow: 1 gpm, constant.

Sensor flow rate: 50 ml/min.

Particle removal assay: performed at 30 minutes after start of flow through filter element.



Source of test data: KX Industries, LP, Bridgeport, CT.

Test Conditions #2: Performed by third party testing laboratory.

Test method: single pass retention efficiency per IBR TM E-100.

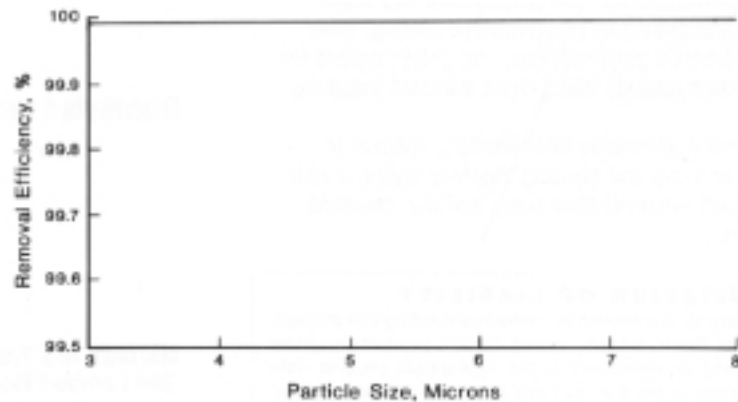
Instrumentation: Hiac 4200 and Hiac/Royco 2100A turbidimeter.

Contaminant: AC fine test dust, LN 1538.

Temperature: ambient

Flow rate: 1 gpm.

Description of samples: filter elements, preflushed for 15 minutes.



Source of test data: Inter Basic Resources, Inc. Ann Arbor, Michigan.

TABLE 1* SUMMARY TECHNICAL DATA

Part Number	O.D. x Length	Carbon Weight ¹	Chlorine capacity @ Flow ²	Absolute μm rating ³	Chloroform capacity @ Flow ⁴	Initial ΔP @ Flow
01-250-125-975	2.50" x 9.75"	0.75 lb.	> 20,000 gal. @ 1.0 GPM	2 μm	750 gal. @ 0.5 GPM	3.5 psid @ 1.0 GPM
01-250-125-20	2.50" x 20"	1.75 lb.	> 45,000 gal. @ 2.3 GPM	2 μm	1,750 gal. @ 1.2 GPM	3.0 psid @ 2.0 GPM
01-425-125-975	4.25" x 9.75"	2.60 lb.	> 70,000 gal. @ 3.0 GPM	2 μm	2,600 gal. @ 1.5 GPM	9.0 psid @ 2.0 GPM
01-425-125-20	4.25" x 20"	5.60 lb.	> 150,000 gal. @ 7.0 GPM	2 μm	5,600 gal. @ 3.5 GPM	8.5 psid @ 4.0 GPM

Notes: TABLE 1

¹Performance of a **Matrikx+1** extruded carbon filter varies in direct proportion to the total weight of carbon in each filter. For example, a 4.25" O.D.x 20"L. **Matrikx+1** filter contains approximately seven more times more activated carbon as a 2.50" O.D. x 9.75" L. filter, and will therefore have seven times the rated chlorine and chloroform capacities when operating at seven times the rated flow of the smaller cartridge. Rated flow is based on maintaining identical contact/residence times for all filters.

²Chlorine capacity is the estimated capacity in gallons during which the filter will remove greater than 95% of the influent chlorine (2ppm) when operating continuously at the given flow.

³Particulate rating is for > 99.9% removal of particles of a given size as determined from particle counting results.

⁴Chloroform removal capacity, in gallons total flow to maintain minimum >95% removal of influent chloroform (300 ppb) at the given flow.

Ordering Information (cases only) Matrikx+1 Extruded Carbon Filters

Part Number	Outer Diameter	Length
01-250-125-975	2.50"	9.75"
01-250-125-20	2.50"	20.00"
01-425-125-975	4.25"	9.75"
01-425-125-20	4.25"	20.00"
Special Order	1" to 6"	1" to 60"

Standard filters are finished with an outer polypropylene spunbonded prefiltration medium. A protective polypropylene netting is applied to the exterior of the cartridge. Polypropylene end caps with compression gaskets fit most standard housings.

Inquire concerning alternative filter finishing options, including alternative end cap and housing interface styles, a wide range of non-standard extruded filter sizes, and non-standard prefiltration systems.

Warnings:

- Maximum Operating Temperature: 125° F.
- Maximum Operating Pressure: 250 psig.
- Maximum Differential Pressure: 100 psid.
- Collapse Pressure: 200 psid.
- **Matrikx+1** filters are not to be autoclaved or steam sterilized.
- Activated carbon filter units covered by this standard are not intended to be used where the water is microbiologically unsafe or with water of unknown quality without adequate disinfection before or after the unit.
- Use **Matrikx+1** carbon filters only with microbiologically safe water. Activated carbon filters are not designed to kill or remove bacteria or viruses.
- Actual results obtained will vary with various combinations and amounts of organic contaminants, changes in pH or other conditions encountered in actual use.
- All information presented here is based on data believed to be reliable. It is offered for evaluation and verification, but is not to be considered a warranty of any kind.

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