



**M A T R I K X<sup>®</sup> P b 1 E X T R U D E D F I L T E R S**

***Multi-function Filter***

- *Soluble and insoluble lead reduction*
- *Powerful activated carbon filter*
- *99.96%+ reduction of 1-2  $\mu$ m particles*
- *High dirt capacity sediment filter*

# P b 1 E X T R U D E D F I L T E R S

## MATRIKX® Pb1 HEAVY METALS REDUCTION

MATRIKX® Pb1 extruded carbon filters reduce soluble lead using a powerful ion-exchange filter medium with high specificity for soluble lead. Particulate filtration is used to intercept insoluble lead-containing particles, even those less than 2µm in diameter. Standard filters\* reduce lead (meeting National Sanitation Foundation Standard 53 test protocol) for over 2,500 gallons when operated at a flow of 0.75 GPM.

## CHEMICAL ADSORPTION

MATRIKX® Pb1 filters offer high levels of organic chemicals reduction, and reduce trihalomethanes (THMs), volatile organic chemicals (VOCs), chlorine, and chemicals that contribute to taste and odor.

## PARTICULATE, CYST AND TURBIDITY REDUCTION

MATRIKX® Pb1 filters provide ≥99.984% reduction of 3 - 4 µm particles (≥99.96% reduction of 1 -2 µm particles) and operate as high performance sediment filters with extended life. Graded-density prefiltration combined with a high dirt capacity extruded activated carbon serve to provide several times greater dirt life than molded filter products.

## DESIGN FEATURES

MATRIKX® Pb1 filters flow in the radial (outside-to-inside) direction, providing increased dirt capacity and low pressure drop. Unlike granular activated carbon (GAC) filters, MATRIKX® Pb1 cartridges will not channel or bypass, due to the extreme uniformity of their extruded activated carbon core. Service life of the MATRIKX® Pb1 filter is greatly extended by two layers of prefiltration media consisting of a 15 µm polypropylene spunbonded outer prefiltration layer and a 5µm polypropylene melt-blown inner layer. Recommended installations are in fluids having upstream 1-5 µm prefilters or as stand-alone high-performance filter elements.

## APPLICATIONS

MATRIKX® Pb1 is a powerful, multi-functional, filter cartridge for residential and industrial water purification systems, industrial effluent water treatment, food service, and industrial makeup, product rinse, and process water treatment.

\*A "standard filter" is 2.50" O.D. x 9.75" length and fits most standard household and commercial filter housings.

### FEATURES:

Mixture of fine-mesh granular carbons and ultra-micronized ion-exchange filtration medium in high-integrity extruded structure.

99.984%+ reduction of 3 - 4 µm particulates.

99.96%+ reduction of 1 - 2 µm particulates.

Graded-density prefiltration design.

Manufactured using FDA-compliant materials.

### BENEFITS:

Efficient reduction of soluble lead.

High chemical adsorptive capacity.

No channeling/ no fluidizing/ no bypassing.

High TOC reduction.

Eliminates release of carbon fines.

Efficient reduction of insoluble lead particles.

Cyst reduction: *Giardia lamblia*, *Cryptosporidium*.

Effective turbidity reduction.

Meets NSF Standard 42 Class 1 filtration standards.

Maximum service life, resistance to fouling.

Lowest extractables, pure materials of construction.

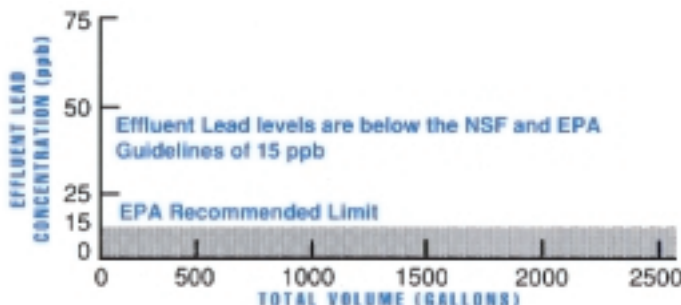
# SOLUBLE LEAD REMOVAL

**Test Results:** Standard 2.50" O.D. x 1.25" I.D. x 9.75" L MATRIKX® Pb1 extruded carbon filter cartridges were challenged with influent water flowing at 0.75 GPM and containing approximately 150 ppb of soluble lead at both high pH and alkalinity, and low pH and low alkalinity. The results demonstrate that the MATRIKX® Pb1 will reduce soluble and insoluble lead to below 15 ppb for greater than 2,500 gallons.

**Test Conditions:** Two randomly selected, standard production cartridges were challenged with water containing an average of 150 ppb of soluble lead nitrate at a flow rate of 0.75 GPM to determine the filter's efficiency for the reduction of soluble lead at low pH, TDS and alkalinity. A second set of filters were tested under similar conditions, but with influent water at high pH, high TDS and alkalinity.

**Flow rate:** 0.75 GPM  
**System pressure:** 60 psig  
**Operating cycle:** 50% on / 50% off  
**Influent water analysis:**

	Low Ph	High Ph
Alkalinity	30mg/L	210 mg/L
pH	6.7	8.3
TDS	144 mg/L	284 mg/L
Turbidity	<0.1 NTU	<0.1 NTU
Temperature:	20° C.	20° C.
Hardness:	24 mg/L	120 mg/L
Polyphosphate:	<0.05 mg/L	<0.05 mg/L



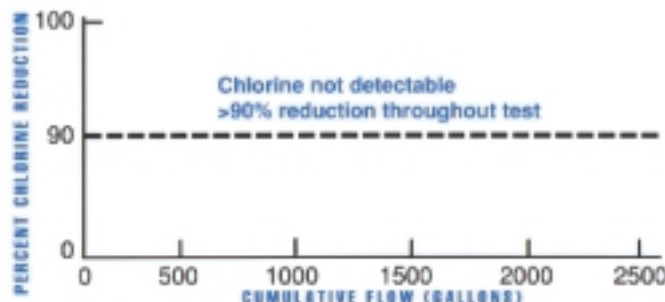
Source of test data: Spectrum Laboratories, New Brighton, Minnesota.

# CHLORINE REDUCTION

**Test Results:** Standard 2.50" O.D. x 1.25" I.D. x 9.75" L MATRIKX® Pb1 extruded carbon filters removed all detectable free chlorine (<0.1 ppm) from an influent challenge containing an average of 2.0 ppm free chlorine flowing at 0.75 GPM, and maintained this level of performance for 2,500 gallons.

**Test Conditions:** Two randomly selected, standard production cartridges were evaluated for chlorine reduction.

**Flow rate:** 0.75 GPM  
**System pressure:** 60 psig  
**Operating cycle:** 50% on / 50% off  
**Chlorine challenge:** 2 -2.5 ppm FAC (free available chlorine).  
**Total challenge:** 2,500 gallons  
**Influent water analysis:** pH . . . . . 7.5  
 TDS . . . . . 280 mg/L  
 Turbidity . . . . . <0.1 NTU  
 Temperature . . . 20° Celsius



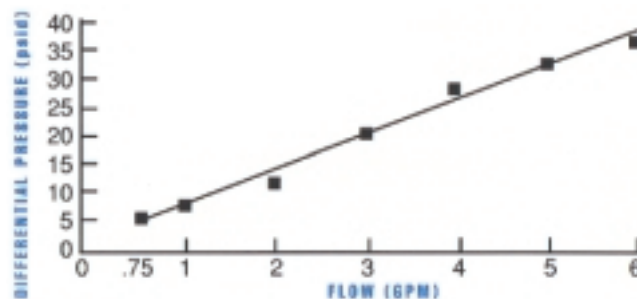
Source of test data: Spectrum Laboratories, New Brighton, Minnesota.

# FLOW RESISTANCE

**Test Results:** Standard MATRIKX® Pb1 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. The standard 2.50" O.D. x 9.75" L MATRIKX® Pb1 filter has a ΔP= 4.00 psid at 1.0 GPM flow.

**Test Conditions:** Three randomly selected, standard production cartridges were subjected to varying flows to determine the initial-differential-pressure vs. flow curve.

**Influent water:** Bridgeport, CT municipal drinking water  
**pH of Influent water:** 6.5  
**Temperature:** 20° C  
**System pressure:** 60 psig, constant  
**Range of tested flows:** 1 - 10 GPM.  
**Instrumentation:** Omega Engineering FL710 Series,  
 1 to 11 GPM range, with 0.2 GPM accuracy

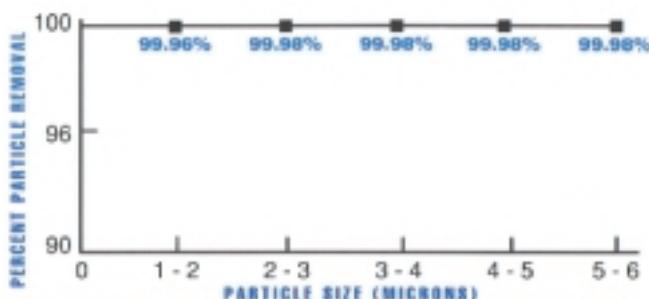


Source of test data: KX Industries L.P., Bridgeport, CT

# PARTICULATE, CYST AND TURBIDITY REDUCTION

**Test Results:** Standard 2.50" O.D. x 1.25" I.D. x 9.75" L MATRIKX® Pb1 extruded carbon filters were evaluated for particulate reduction using in-line particle counting instruments, and demonstrated ≥99.984% reduction at 3-4 μm particles (≥99.96% reduction at 1 - 2 μm particles) which exceeds the current NSF requirement for cyst and turbidity reduction under NSF Standard 53.

**Test Conditions:**  
**Instrumentation:** HIAC ROYKO 8000A, automatic particle counter.  
**Sensor:** LD 400  
**Influent water temperature:** 20° C.  
**Challenge:** Fine test dust  
**Flow rate:** 4.0 GPM



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

# TABLE 1: SUMMARY TECHNICAL DATA

Part Number	O.D. x Length	Filter Weight <sup>1</sup>	Chlorine capacity @ Flow <sup>2</sup>	Absolute µm Rating <sup>3</sup>	Lead Reduction Capacity @ Flow <sup>4</sup>	Initial ΔP @ Flow
06-250-125-975	2.50" x 9.75"	0.85 lb.	>6,000 gal. @ 0.75 GPM	1-2 µm	2,500 gal. @ .75 GPM	4.0 psid @ 0.75 GPM
06-250-125-20	2.50" x 20"	1.90 lb.	>12,000 gal. @ 1.5 GPM	1-2 µm	5,000 gal. @ 1.5 GPM	4.0 psid @ 1.50 GPM
06-425-200-975	4.25" x 9.75"	3.20 lb.	>20,000 gal. @ 2.5 GPM	1-2 µm	8,000 gal. @ 2.5 GPM	7.0 psid @ 2.50 GPM
06-425-200-20	4.25" x 20"	6.60 lb.	>42,000 gal. @ 5.0 GPM	1-2 µm	17,000 gal. @ 5.0 GPM	6.5 psid @ 5.00 GPM

## NOTES:

<sup>1</sup>Performance of a given MATRIKX® 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® filter contains approximately seven times as much activated carbon as a 2.50" O.D. x 9.75" L MATRIKX® filter, and will therefore have seven times the rated chlorine and lead absorption capacities, when operating at seven times the rated flow of the smaller cartridge. Hence, rated flow is based on maintaining identical contact/residence times for all filters.

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

<sup>3</sup>Particulate rating for >99.9% removal of a given size as determined from particle counting results.

<sup>4</sup>Lead reduction capacity in gallons to obtain ≥90% removal of influent lead (150 ppb influent) at a given flow and at a pH of 6.5/8.5, according to the standard National Sanitation Foundation protocol.

## WARNINGS:

- Maximum Operating Temperature: 125° F.
- Maximum Operating Pressure: 250 psig.
- Maximum Differential Pressure: 100 psid.
- Collapse Pressure: 200 psid.
- MATRIKX® filters are not to be autoclaved or steam sterilized.
- Use MATRIKX® 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.
- MATRIKX® filters are designed to fit most standard household and commercial or industrial housings. Call KX Industries to check filter housing compatibility.

## ORDERING INFORMATION:

### MATRIKX® Pb1 Extruded Carbon Filters

Part Number	Outer Diameter	Length
06-250-125-050	2.50"	5.00"
06-250-125-975	2.50"	9.75"

Part Number	Outer Diameter	Length
06-425-200-975	4.25"	9.75"
06-250-200-20	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.

### LIMITED LIABILITY

SELLER MAKES NO WARRANTIES OF ANY KIND, EXPRESSED OR IMPLIED, CONCERNING THIS PRODUCT, INCLUDING WARRANTIES OF THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EXCEPT THAT THIS PRODUCT SHOULD BE CAPABLE OF PERFORMING AS DESCRIBED IN THE APPROPRIATE PRODUCT DATA SHEET. SELLER'S OBLIGATION SHALL BE LIMITED SOLELY TO REFUND OF PURCHASE PRICE OR REPLACEMENT OF PRODUCT PROVED DEFECTIVE, AT SELLER'S SOLE DISCRETION. DETERMINATION OF SUITABILITY OF PRODUCT FOR USES AND APPLICATIONS CONTEMPLATED BY BUYER SHALL BE THE SOLE RESPONSIBILITY OF BUYER. USE OF THIS PRODUCT CONSTITUTES BUYER'S ACCEPTANCE OF THIS LIMITED LIABILITY.

This product is made in accordance with or covered under one or more of the following United States patents: 5,019,311; 5,147,722; 5,189,092; 5,249,948; 5,331,037; 5,922,803; 5,946,342; 6,061,384 and corresponding patents in other countries.

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