

# KATALOX LIGHT

## ADVANCED FILTRATION MEDIA

### Filtration of

- Less than 3 micron
- Suspended solids
- Sediments
- Turbidity
- Organics
- Color
- Odor

### Removal of

- Iron
- Manganese
- Hydrogen Sulfide
- Arsenic
- Radium
- Heavy Metals
- Radionuclides

### Advantages

- High content MnO<sub>2</sub> coating (10%)
- Very High Surface Area
- Contains NO Crystalline Silica
- Light Weight - providing significant savings on backwash water
- Higher Filtration rates
- Filtration of sand, sediment and suspended solids, down to 3 micron
- High efficiency removal capacity of Iron, Manganese and Hydrogen sulfide
- Effective reduction of Arsenic, Zinc, Copper, Lead, Radium, Uranium, radionuclides and other heavy metals
- Media replacement every 7 - 10 years
- No disinfection by-product
- No mandatory KMnO<sub>4</sub>, chlorine or chlorine dioxide dosing
- Low operational costs
- Unique product, unmatched by our competitors





## WHAT IS KATALOX LIGHT<sup>®</sup>?

**KATALOX LIGHT<sup>®</sup>** is a new brand of revolutionary advanced filtration media completely developed in Germany. It's composition simply makes it outstanding against the contemporary filter media available in water treatment industries, like sand, BIRM, Greensand Plus, Manganese Greensand etc. **KATALOX LIGHT<sup>®</sup>** is manufactured in Germany.

**KATALOX LIGHT<sup>®</sup>** is engineered with unique MnO<sub>2</sub> coating technique on **ZEOSORB<sup>®</sup>**, providing it light weight, higher filtration surface, more service life and more reliable performance (filtration down to 3 µm) than any other existing granular filter media.

**KATALOX LIGHT<sup>®</sup>** is being used in numerous system for residential, commercial, industrial and municipal applications worldwide, for High level filtration, color and odor removal, Iron, Manganese, Hydrogen sulfide removal, efficient reduction of Arsenic, Zinc, Copper, Lead, Radium, Uranium and other radionuclides and heavy metals.

**KATALOX LIGHT<sup>®</sup>** is ANSI/NSF 61 Certified for drinking water applications and has met the ANSI/NSF 372 Lead free compliance.



## Advanced use

High concentration coating of MnO<sub>2</sub> on the **KATALOX LIGHT<sup>®</sup>** surface (10%) is the biggest advantage compared to any similar product available in the market. This makes the oxidation and co-precipitation of contaminants much more effective. For removal of very high concentration of contaminant it's recommended to use H<sub>2</sub>O<sub>2</sub> as an oxidizer, which provides accelerated catalytic oxidation on the surface of the media. Conventional oxidizing agents like chlorine or potassium permanganate also could be used if required.

**KATALOX LIGHT<sup>®</sup>** can be used for Arsenic, Radium, Uranium removal but in these cases there is requirement of Iron in the water. **KATALOX LIGHT<sup>®</sup>** system is designed with special iron dosing technology which has many advantages over Adsorbent media used for Heavy Metal removal.

## The Future

The future of water treatment, as we see it, is going to give us more difficult challenges and we all need more advanced and robust products.

In Watch Water<sup>®</sup>'s vision, **KATALOX LIGHT<sup>®</sup>** can be addressed for advanced concepts like Water Reuse, Controlled Adsorption of Arsenic and Heavy Metals, advanced Membrane pre-treatment, Zero-Discharge Cooling tower etc.

Contact us for information.

**Standard Packaging:**  
1 ft<sup>3</sup> bags (28 Liters);  
Mass: 30 kg (66 lb)  
40 bags on a Pallet  
16 Pallets in a container



Watch Water<sup>®</sup> **KATALOX LIGHT<sup>®</sup>** systems offer a new technology with advanced catalytic filtration available in water treatment industry. All systems have been engineered keeping both professionals and consumers in mind. Systems are available with different models and customized for manual back-wash without using electricity or it can be made fully-automatic. System can be used in a variety of applications including residential, commercial and any process water applications for food and beverage industry.

Standard systems are designed with a filtration velocity of 20 m/h (8.2 gpm/ft<sup>2</sup>) to provide a good filtration. This value may differ for advanced application like Arsenic, Radium, Uranium and other



KL System with simple Manual Control



KL System with fully Automatic Control



Parallel configuration for higher flow rates

**Example:**  
2 parallel KL 1465-Mn would have a total flow of 2 x 1800 lph = 3600 lph (15.9 gpm)



RED-OXY TREATMENT  
FILTRATION  
ADSORPTION  
FILTERS ORB  
INSTANT PRODUCTS

Heavy Metal removal where co-precipitation process requires higher contact time thus lower filtration velocity. Running the system at higher velocity may compromise the filtration performance.

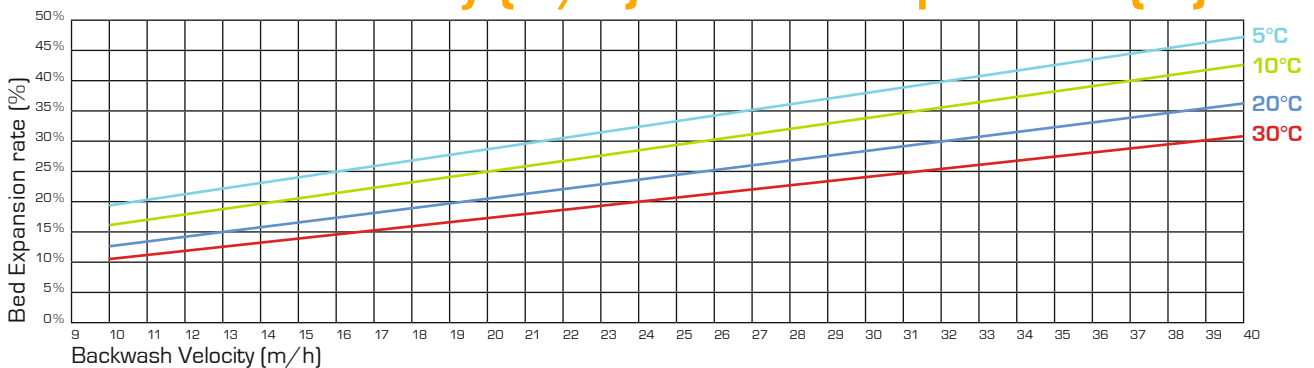
Virtually there is no flow rate limitations for **KATALOX LIGHT®** systems as **KATALOX LIGHT®** units can be configured in parallel to address industrial high flow requirements.

## Standard Pressure Vessel Listing for Katalox Light® Systems (Manual/Automatic)

PRESSURE VESSEL KL MEDIA AMOUNT							SERVICE FLOW RATE				BACKWASH FLOW RATE	
Vessel Mode	Tank Volume (liters)	Free-board (%)	Volume (%)	Volume (liters)	Bed Height (ft <sup>3</sup> )	Bed Height (mm)	Standard (m <sup>3</sup> /h)	Standard (gpm)	Maximum (m <sup>3</sup> /h)	Maximum (gpm)	(m <sup>3</sup> /h)	(gpm)
10x44	49.0	40	55	28.0	1.0	580	0.5	2.20	0.6	2.64	1.40	6.2
13x54	105.7	40	55	56.0	2.0	740	1.0	4.40	1.2	5.28	2.39	10.5
14x65	148.0	40	55	84.0	3.0	897	1.5	6.60	1.8	7.96	3.63	16.0
18x65	257.0	40	55	140.0	5.0	940	2.5	11.00	3.0	13.20	4.59	20.2
21x60	310.0	40	55	168.0	6.0	834	3.0	13.21	3.6	15.85	6.25	27.6
24x69	450.0	40	55	252.0	9.0	926	4.5	19.81	5.4	23.77	8.84	39.0
30x78	710.0	40	55	392.0	14.0	935	7.0	30.82	8.4	36.98	12.76	56.3
36x78	1020.0	40	55	560.0	20.0	932	10.0	44.02	12.0	52.83	18.37	81.0
42x78	1360.0	40	55	756.0	27.0	913	13.5	59.44	16.2	71.32	25.01	110.3
48x82	1840.0	40	55	1008.0	36.0	946	18.0	79.25	21.6	95.10	32.67	144.0

- Note:**
- This is standard system parameter by considering ideal situation. It might vary depending on inlet parameters.
  - Consider to design system with standard flow rate. At higher flow rate filtration quality might be compromised.
  - 5 % gravel has been considered in above system parameters. If not, then consider 60% media volume.

## Backwash Velocity (m/h) vs. Bed Expansion (%)



## RED-OXY TREATMENT

## FILTRATION

KATALOX LIGHT  
CRYSTOLITE

## ADSORPTION

CATALYTIC CARBON  
TITANSORB  
FERROLOX

## FILTERSORB

FILTERSORB CT  
SORBEX  
FILTERSORB SP3  
SPECIAL FILTER

## INSTANT PRODUCTS

ISOFT CHEMICALS  
OXYDES  
OXYDES-P  
OXYSORB  
BIOXIDE  
SCALE-OVER  
GREEN-ACID

## Composition of Katalox Light®

Compounds	Typical value	Specifications
<b>ZEOSORB</b> (Naturally Mined)	85 %	>85 %
Manganese dioxide	10 %	>9.5 %
Hydrated Lime	5 %	<5 %

## Regeneration / Dosing\* for 1.0 mg/l of

	Fe <sup>2+</sup>	Mn <sup>2+</sup>	H <sub>2</sub> S
H <sub>2</sub> O <sub>2</sub>	0.9 mg/l	1.8 mg/l	4.5 mg/l
KMnO <sub>4</sub> /Cl	1.0 mg/l	2.0 mg/l	5.0 mg/l

\* Optional: Only if the water doesn't have sufficient ORP (Oxidation Reduction Potential) to oxidize the contaminants. OXYDES-P helps to keep the media surface clean and could be used during backwash.

**Warning:** Do NOT exchange pressure vessel media from one pressure vessel to another. Reason for inadequate sanitation during the exchange of media. Wet media will absorb nitrogen and oxygen in the air which will immediately kick off the bacteria growth. Biofouling on surface of media and other contaminants are present during the exchange. Media is designed only for iron manganese, hydrogen sulfide and other heavy metals. Media containing biofouling cannot be reused as it is harmful for drinking water. Replacing new media is highly suggested.

To know and learn more about this huge potential of **KATALOX LIGHT®** please contact us:



## Physical Properties

<b>Appearance</b>	Granular black beads	
<b>Odor</b>	none	
<b>Mesh size</b>	<b>US</b>	14 x 30
	<b>SI</b>	0.6 - 1.4 mm
<b>Uniformity Coefficient</b>	≤ 1.75	
<b>Bulk density</b>	<b>US</b>	66 lb / ft <sup>3</sup>
	<b>SI</b>	1060 kg / m <sup>3</sup>
<b>Moisture Content</b>	<0.5 % as shipped	
<b>Filtration</b>	<3 micron	
	<b>for Fe<sup>2+</sup> alone</b>	3000 mg / l
		85000 mg / ft <sup>3</sup> [aprx]
<b>Loading Capacity</b>	<b>for Mn<sup>2+</sup> alone</b>	1500 mg / l
		42500 mg / ft <sup>3</sup> [aprx]
	<b>for H<sub>2</sub>S alone</b>	500 mg / l
		14000 mg / ft <sup>3</sup> [aprx]

## Recommended System Operating Conditions

<b>Inlet water pH</b>	5.8 - 10.5	
<b>Freeboard</b>	40%	
<b>Minimal Bed Depth</b>	<b>US</b>	29.5 inches
	<b>SI</b>	75 cm
<b>Optimal Bed Depth</b>	<b>US</b>	47 inches
	<b>SI</b>	120 cm
<b>Service flow</b>	<b>US</b>	4 - 8 gpm / ft <sup>2</sup>
	<b>SI</b>	10 - 20 m / h
<b>Backwash velocity**</b>	<b>US</b>	10 - 12 gpm / ft <sup>2</sup>
	<b>SI</b>	25 - 30 m / h
<b>Backwash time**</b>	10 - 15 minutes	
<b>Rinse time**</b>	2 - 3 minutes	

\*\* Note: Starred parameters could be more or less in some cases depending on inlet parameters.