

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_2 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_4 , chlorine or chlorine dioxide dosing
- Low operational costs
- Unique product, unmatched by our competitors





WHAT IS KATALOX LIGHT®?

KATALOX LIGHT® 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®** is manufactured in Germany.

KATALOX LIGHT® is engineered with unique MnO_2 coating technique on **ZEOSORB®**, providing it light weight, higher filtration surface, more service life and more reliable performance (filtration down to $3 \mu m$) than any other existing granular filter media.

KATALOX LIGHT® 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® is Certified to NSF/ANSI-61 standard for drinking water applications and has met the ANSI/NSF 372 Lead free compliance.



Advanced use

High concentration coating of MnO_2 on the **KATALOX LIGHT®** 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_2O_2 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® can be used for Arsenic, Radium, Uranium removal but in these cases there is requirement of Iron in the water. **KATALOX LIGHT®** 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®'s vision, **KATALOX LIGHT®** 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 ft³ bags (28 Liters);
Mass: 30 kg (66 lb)
40 bags on a Pallet
16 Pallets in a container



Watch Water® **KATALOX LIGHT®** 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.

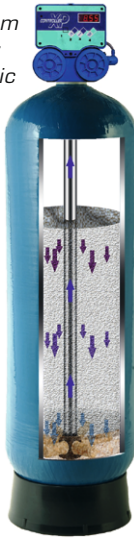
Standard systems are designed with a filtration velocity of $20 m/h$ ($8.2 gpm/ft^2$) to provide a good filtration. This value may differ for advanced application like Arsenic, Radium, Uranium and other



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 $2 \times 1800 \text{ lph}$
= 3600 lph (15.9 gpm)



WATCHER[®]
WATCH WATER
a Water Company

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.

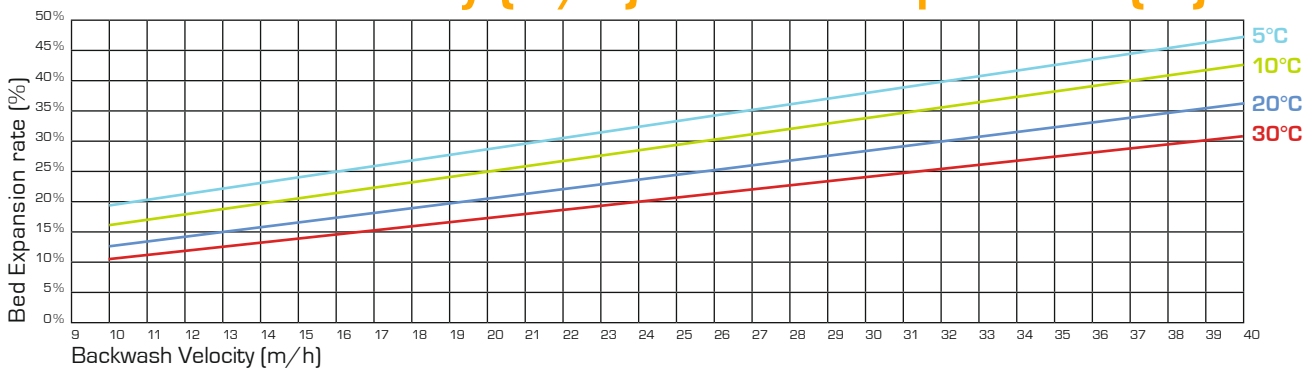
Standard Pressure Vessel Listing for Katalox Light[®] Systems (Manual/Automatic)

PRESSURE VESSEL KL MEDIA AMOUNT							SERVICE FLOW RATE		BACKWASH FLOW RATE			
Vessel Mode	Tank Volume	Free-board	Volume		Bed Height		Standard	Maximum				
	[liters]	(%)	(%)	[liters]	[ft ³]	(mm)	[m ³ /h]	[gpm]	[m ³ /h]	[gpm]	[m ³ /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
ZEOSORB (Naturally Mined)	85 %	>85 %
Manganese dioxide	10 %	>9.5 %
Hydrated Lime	5 %	<5 %

Regeneration / Dosing *

for 1.0 mg/l of

	Fe ²⁺	Mn ²⁺	H ₂ S
H ₂ O ₂	0.9 mg/l	1.8 mg/l	4.5 mg/l
KMnO ₄ /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

Appearance	Granular black beads	
Odor	none	
Mesh size	US	14 x 30
	SI	0.6 - 1.4 mm
Uniformity Coefficient	≤ 1.75	
Bulk density	US	66 lb / ft ³
	SI	1060 kg / m ³
Moisture Content	<0.5 % as shipped	
Filtration	<3 micron	
Loading Capacity	for Fe²⁺ alone	3000 mg / l
		85000 mg / ft ³ [aprx]
	for Mn²⁺ alone	1500 mg / l
		42500 mg / ft ³ [aprx]
	for H₂S alone	500 mg / l
		14000 mg / ft ³ [aprx]

Recommended System Operating Conditions

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

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