



WATCH GmbH
A Water Company

MADE IN GERMANY

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



www.watchwater.de





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 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_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.



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

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®**'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



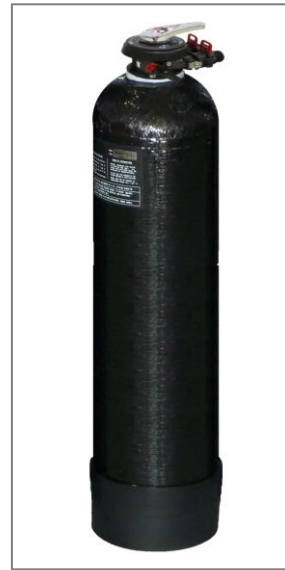


Watch® **Katalox Light®** systems offer a new technology with advanced catalytic filtration available in water treatment industry. All systems have been engineered keeping both professionals and consumers in mind. Systems are available with different models and customized for manual backwash without 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.

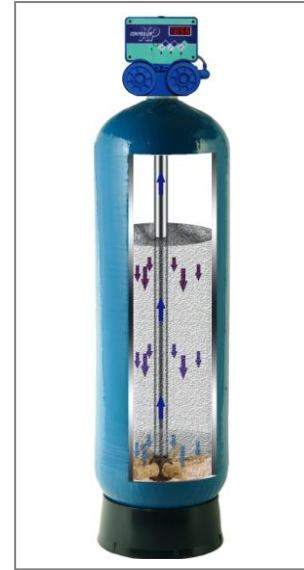
Standard systems are designed with a filtration velocity of 20 m/h (8.2 gpm/ft²) to provide a good filtration. This value may differ for advanced application like Arsenic, Radium, Uranium and other Heavy Metal removal where co-precipitation process requires higher contact time thus lower filtration velocity. Running the system at higher velocity may compromise the filtration performance.

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

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 3000 lph = 6000 lph (26.2 gpm)

Standard Pressure Vessel Listing for KL Systems (Manual/Automatic)

Pressure Vessel			KL media amount			Service flow rate				Backwash	
			volume		Bed Height	Standard		Maximum			
Vessel Model	Area	Freeboard	liters	ft³		mm	flow-rate		flow-rate		flow-rate
	m²	%			m³/h		gpm	m³/h	gpm	m³/h	gpm
08x44	0.03	30	24	0.8	725.3	0.6	2.9	1.0	4.3	0.8	3.6
10x54	0.05	30	42	1.5	838.6	1.0	4.5	1.5	6.7	1.3	5.6
12x52	0.07	30	56	2.0	767.5	1.5	6.4	2.2	9.6	1.8	8.0
14x65	0.10	30	98	3.5	986.8	2.0	8.7	3.0	13.1	2.5	10.9
16x65	0.13	30	126	4.5	971.3	2.5	11.4	3.9	17.1	3.2	14.3
18x65	0.16	30	170	6.0	1035.5	3.5	15.5	4.9	21.7	4.1	18.1
21x60	0.22	30	224	8.0	1002.4	4.5	19.7	6.7	29.5	5.6	24.6
24x69	0.29	30	308	11.0	1055.3	6.0	26.3	8.8	38.6	7.3	32.1
30x72	0.46	30	510	18.0	1118.3	10.0	44.2	13.7	60.2	11.4	50.2
36x72	0.66	30	764	27.0	1163.4	15.0	66.0	19.7	86.7	16.4	72.3
42x78	0.89	30	935	33.0	1046.1	20.0	86.6	26.8	118.1	22.3	98.4
48x82	1.17	30	1300	46.0	1113.5	25.0	110.0	35.0	154.2	29.2	128.5



Composition of KATALOX LIGHT®:

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

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	
Removal Capacity	for Fe ²⁺ alone	3000 mg/l 85000 mg/ft ³ (aprx)
	for Mn ²⁺ alone	1500 mg/l 42500 mg/ft ³ (aprx)
	for H ₂ S alone	500 mg/l 14000 mg/ft ³ (aprx)

Recommended System Operating Conditions:

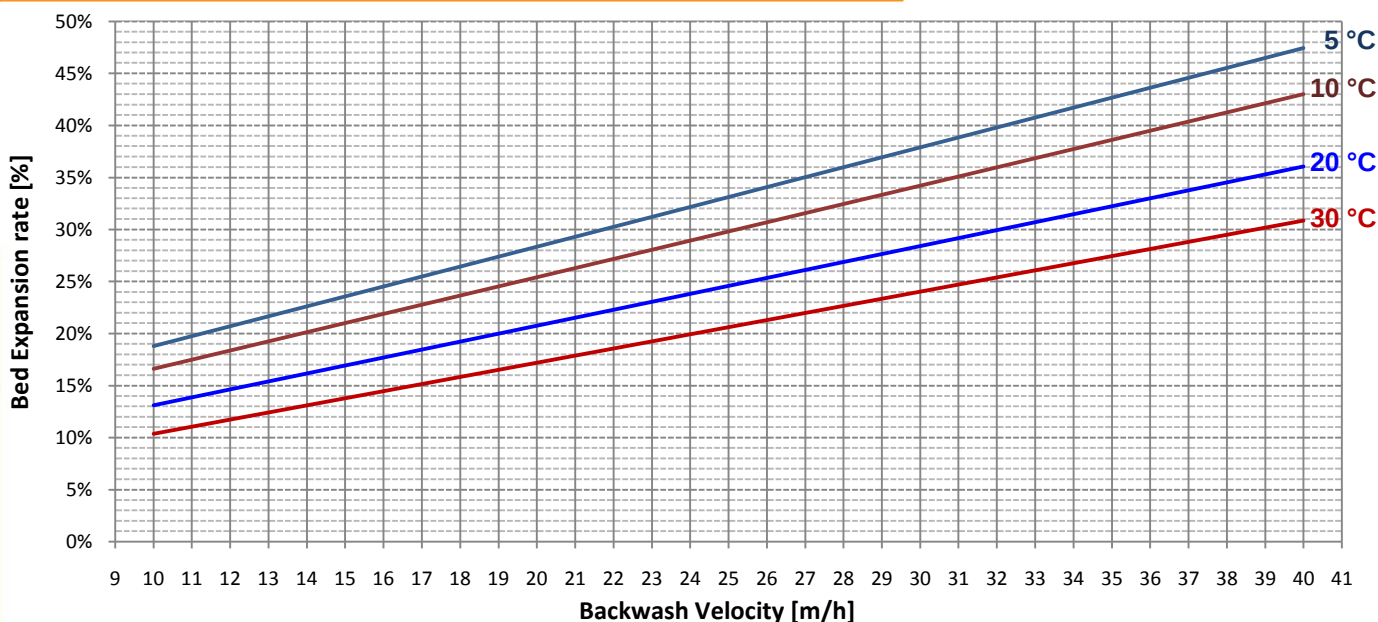
Inlet water pH	5.8 - 10.5	
Freeboard	25 - 35%	
Min. Bed Depth	US	29.5 inches
	SI	75 cm
Optimal Bed. Depth	US	47 inches
	SI	120 cm
Service flow	US	6 - 12 gpm/ ft ²
	SI	15 - 30 m/h
Backwash velocity	US	8 - 10 gpm/ ft ²
	SI	20 - 25 m/h
Backwash time	5 - 10 minutes	
Rinse time	1 - 2 minutes	

Regeneration/Dosing (optional*)

*Only if the water doesn't have sufficient oxygen to oxidize the contaminants. It also helps to clean the media surface better if used at the backwash

H ₂ O ₂	for 1.0 mg/l of	Fe ²⁺	0.9 mg/l
	for 1.0 mg/l of	Mn ²⁺	1.8 mg/l
	for 1.0 mg/l of	H ₂ S	4.5 mg/l
KMnO ₄ /Cl	for 1.0 mg/l of	Fe ²⁺	1.0 mg/l
	for 1.0 mg/l of	Mn ²⁺	2.0 mg/l
	for 1.0 mg/l of	H ₂ S	5.0 mg/l

Backwash Velocity [m/h] vs. Bed Expansion [%]:



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A Water Company

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