Ultra Pure Water Filter

eliminates nitrate and silica

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pressure-resistant 10" ultrapure water filter in PP housing

The advantages of the AquaCare Ultra Pure Water Filter

- at silica concentrations (silicate) of more than 5 mg/l or nitrate concentrations of more than 50 mg/l in tap water
- ultrapure water for simple analytical tasks
- is connected directly behind a reverse osmosis unit
- is sufficient for approx. 1,000 litres of ultrapure water* (10" filter)
- Disposable resin (no regeneration required; higher capacity; lower residual conductivity)
- easy exchange of resin
- Simple control of effectiveness via electrical conductivity possible

Technical data of the resin

Ion exchange mixed bed resin type 1 (demineralizer in H+, OH- form)
38...42% strongly acidic component and 56...62% strongly alkaline component,
Bulk density 665...740 g/l,
max. operating temperature 60°C,
Minimum electrical conductivity for reverse osmosis operation* < 0.1 µS/cm

Technical data of the 10" filter

Order number	**BM001PP**
Volume, ca.	0,7 litres
Capacity *	1,000 litres
Service life **	6...7 months
Pressure (20°C)	0…8 bar
Temperature	4...35°C
order number 2 litres ultrapure water resin in PE bag	580-002
order number 25 litres Ultrapure water resin in PE bag	580-025

* at 15 µS/cm reverse osmosis water
** at 5 litres water per day

* with water of an R.O. unit with a permeate conductivity of 15 µS/cm (25°C); at higher conductivities it will be less

Pressureless ultrapure water filters made of acrylic glass

For larger requirements the acrylic glass filters from AquaCare are available. They are available in three heights. These filters are not pressure resistant!

Type	MB002PMMA MB003PMMA MB004PMMA	MB005PMMA MB009PMMA MB013PMMA
Reactor height	50 cm 70 cm 100 cm	
Useful volume, approx.	2.1 litres 3.2 litres 4.9 litres	5.5 litres 8.7 litres 13,4 litres
Capacity, approx.*	3000 litres 4500 litres 7000 litres	6700 litres 10500 litres 16000 litres
Minimum electrical conductivity	< 0,1 µS/cm	
Footprint size	21 × 15 cm	31 × 22 cm
Materials	PMMA (Acrylic glass), NBR, silicone, PA	
Weight	3.6 kg 4.7 kg 6.6 kg	8 kg 10.7 kg 15 kg
Connectors	of your choice	

Pressure-resistant ultrapure water filters made of FRP from 4 to 250 litres content on request.

Example for a 45 litre ultrapure water filter completely mounted on a reverse osmosis rack.

* with water of an R.O. unit with a permeate conductivity of 15 µS/cm (25°C); at higher conductivities it will be less

Conductivity Meter for Ultra Pure Water

Type	¼“ connector for small filters	½“ connector for FPR filters
Order number	610-010	610-011
Measuring range	0.00...19.99 µS/cm	
Resolution	± 0.01 µS/cm	
Accuracy	± 2% of range	
Temperature compensation	automatically at 5...50°C with 2,4%/°C	
Alarm	with LED	
Probe	two-electrode-technique with 2 m cable	
Power supply	External with 12 V adapter (within the scope of delivery)	
Ambient conditions	0...50°C; RH 100%	
Dimensions	86 × 94 × 33	
Weight	150 g	

Reverse Osmosis Technique

To produce pure water gets more and more important with increasing concentrations of harmful substances in the tap water. Many aquarists have to produce pure water with reverse osmosis units. The advantages of this technique: simple to handle, high rejections of substances, no chemical compounds, automatically operation possible.

Harmful substances

But in some areas tap water contains high concentrations of silica and nitrate. Silica is used to take care the tap water system of corrosion. Sometimes you can measure more than 20 mg/l (ppm) silica in tap water. Nitrate is a problem caused by the agricultural industry. In German tap water 50 mg/l is the maximum concentration - in the European Community 25 mg/l.

If the tap water contains more than 50 mg/l nitrate of more than 5 mg/l silica the best low pressure reverse osmosis unit is not able to reduce these substances below a harmless concentration for marine aquariums. Good units reduce nitrate and silica only to 80-90%.

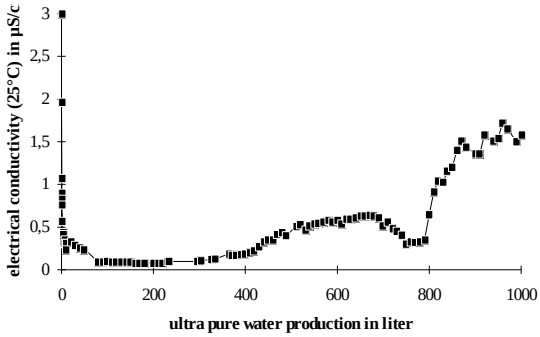
If you use water with nitrate and especially silica a massive population of algae (green, blue green and diatoms) can grow. Most times you can see them as a greasy dark brown and green film that grows over stones, sand and animals. If these films get to thick they can kill bentic animals like corals. Additionally these films does not look good.

Ultra Pure Water Filter

The AquaCare Ultra Pure Water Filter contains a resin that changes positive ions (cations) with H^+ and negative ions with OH^-. The changed H^+ and OH^- combine to neutral water H_2O. The result is water of over 99.9% quality without salts like silica and nitrate. The ultra pure water is of best quality for fresh and sea water, tropical plants and technical purpose.

The AquaCare Ultra Pure Water Filter is easy to install. You have to mount it simply after a reverse osmosis unit (30…160 liters per day for 10” filter).

If you use AquaCare reverse osmosis unit Excel 30 to 160 on the mounting plate is enough place to fix the Ultra Pure Water Filter. If the reverse osmosis unit runs the filter produces ultra pure water without harmful substances.



Ultra pure water quality of an AquaCare filter fed with reverse osmosis water of 15 µS/cm.

Time to change

The quality of the ultra pure water can be measured with a good electrical conductivity meter. If the conductivity is above 3-5 µS/cm you have to change the resin. To measure regularly concentrations of silica or nitrate is possible, too. If you can measure these substances you have to change the resin.

Capacity of the AquaCare 10” Ultra Pure Water Filter:

conductivity feed in µS/cm	10	**15**	20	25	30	35	40	50
capacity in liter	1500	**1000**	750	600	500	430	380	300

* with water of an R.O. unit with a permeate conductivity of 15 µS/cm (25°C); at higher conductivities it will be less