

The background of the left half of the image is a light, airy composition featuring several water droplets of various sizes and colors (clear, white, orange, grey) scattered across the space. The word "ECOMIX" is prominently displayed in a bold, dark blue, sans-serif font. A small orange triangle is positioned below the letter "X", and a registered trademark symbol (®) is located to its right.

ECOMIX[®]

ADVANCED SOFTENING MATERIAL FOR PROBLEM WATER

Reduces:

- HARDNESS
- IRON
- MANGANESE
- ORGANICS

Since 1998

SIMPLE SOLUTION FOR 5 PROBLEMS

ECOMIX® is a multi-component filter media, specifically designed to treat well and tap water containing hardness, iron, manganese and organics.

ECOMIX® is a scientifically grounded technology, confirmed by the patent and service world-wide since 1998.



01



Hardness

ECOMIX® softens water with hardness up to 45 gpg (750 ppm CaCO₃)*

ECOMIX® C ECOMIX® P

02



Iron

ECOMIX® reduces common types of iron: ferrous, organic, and colloidal. Feed water iron concentration must not exceed 15 ppm

ECOMIX® C ECOMIX® P

03



Natural organic matter

ECOMIX® is a proven technology for reducing water containing tannins and other natural organics. Maximum permissible influent values: TOC – 17 ppm, tannins – 5 ppm

ECOMIX® C

04



Manganese

ECOMIX® is one of the most reliable means for manganese reduction. Feed water manganese concentration must not exceed 3 ppm

ECOMIX® C ECOMIX® P

05



Organic Iron

ECOMIX® reduces organic iron commonly found in well water, which often causes yellow or tea-colored water

ECOMIX® C

STANDARDS OF QUALITY



ECOMIX® A material is tested and certified by WQA against NSF/ANSI 44 and NSF/ANSI/CAN 61 for materials safety only and against NSF/ANSI 372 for low lead. Only certified if the volume of the media per volume of water ratio is < 1600 g/L.

ECOMIX® is certified according to the requirements of the American NSF standards.

The **Gold Seal** certificate confirms the compliance of certified products with the most stringent requirements of the American standards NSF/ANSI/CAN. Namely:

NSF/ANSI/CAN 61 – Drinking Water System Components – Health Effects. Ensures materials used in drinking water systems are safe and do not leach harmful contaminants.

NSF/ANSI 44 – Residential Cation Exchange Water Softeners. Specifies the quality and performance requirements for residential ion exchange water softeners.

NSF/ANSI/CAN 372 – Drinking Water System Components – Lead Content. Confirms that components in drinking water systems meet low lead content requirements.

EFFICIENCY AND LIMITATIONS



Raw water quality requirements and efficiency of purification

Hardness, gpg

Iron, ppm

Manganese, ppm

Total organic carbon, ppm

Tannins, ppm

Service life, years



ECOMIX® C

5 in 1

- Hardness
- Iron
- Manganese
- Organic Iron
- Natural Organics & Tannins



ECOMIX® P

3 in 1

- Hardness
- Iron
- Manganese

45

15

3

17

3

5

45

15

3

3

1

5

Requirements for feed water:

Chlorine max — 0.5 ppm

pH — 5-9

TDS max — 4000 ppm

H₂S is not limited

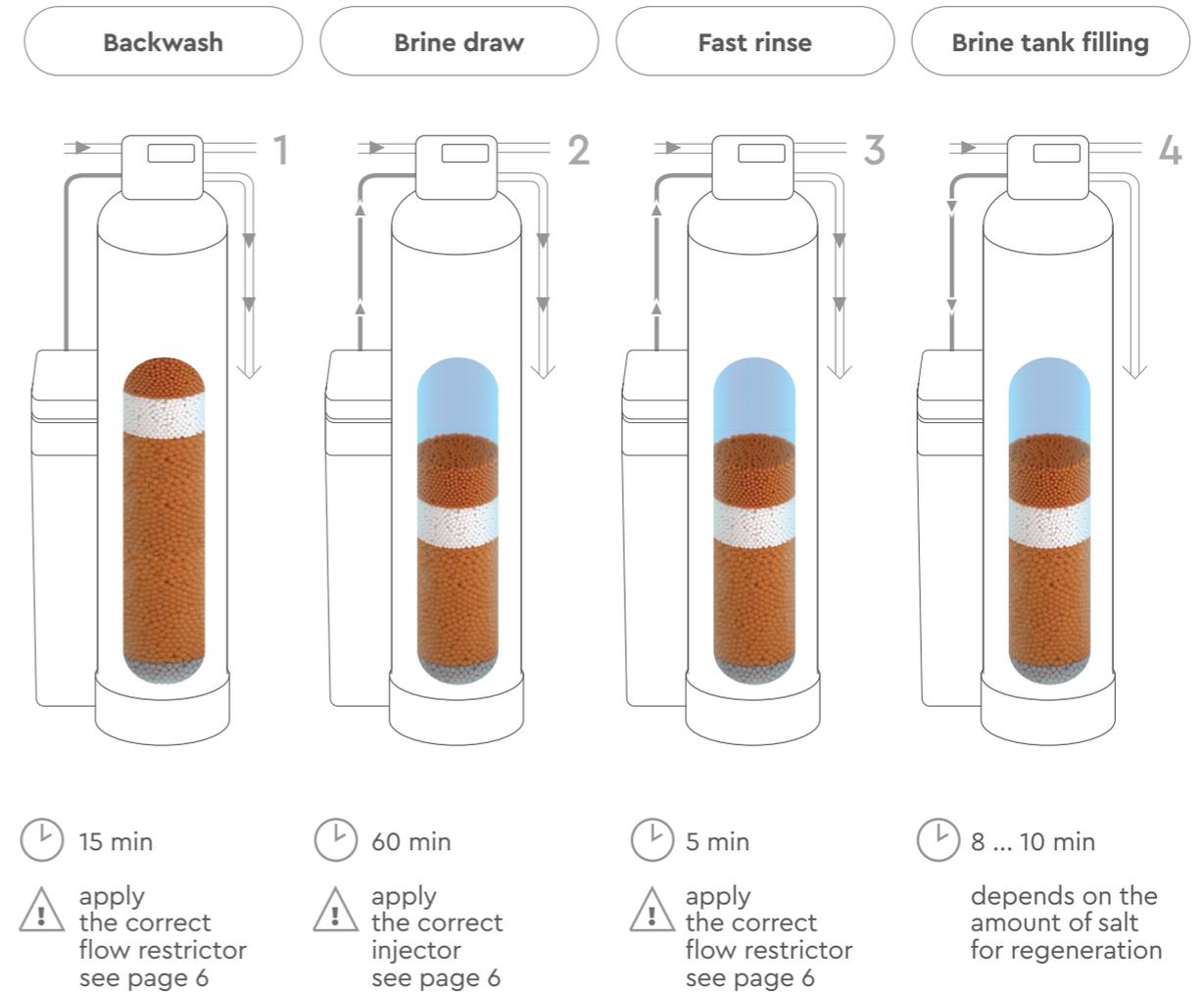
ECOMIX® C & ECOMIX® P reduce ammonium

ECOMIX® STRUCTURE AND FUNCTION



Once you regenerate the system, the ECOMIX® materials will automatically organize themselves into 5 layers.

ECOMIX® REGENERATION



TECHNICAL SPECIFICATIONS

When designing ECOMIX® units, refer to the following figures:

Parameter	Value	
Service flow rate, gpm/ft ²	8-10	
Backwash flow rate, gpm/ft ²	4-6	⚠
Brine (slow rinse) flow rate, gpm/ft ²	1.2-2	
Minimum bed depth, inches	20	
Recommended bed depth, inches	30	
Freeboard, %	40 or more	⚠
Salt consumption, lbs/ft ³	6.3*	
Brine concentration, %	8-10	
Water consumption per regeneration, gallon/ft ³	less than 75	

* If using potassium chloride increase salt dosage to 9 lbs/ft³

⚠ — for efficient iron removal proper backwash rate needs to be performed

⚠ — if the FRP tank is filled with more than 60% of ECOMIX backwash won't be done correctly

The use of resin cleaner or other harsh regeneration aid is not recommended



TECHNICAL SPECIFICATIONS



ECOMIX® is supplied in two size types:

Bag — 0.88 cu. ft. (25L)

Half bag — 0.42 cu. ft. (12L)

Tank Size	948	1054	1252	1354	1465	1665	2162
ECOMIX® volume, bags	1	1.5	2	2.5	3	4	5
Flow Rate, GPM	4.5	5.6	8.0	9.4	11.0	14.3	24.6
Capacity ECOMIX® C, Grains	11 500	17 000	23 000	28 500	34 500	46 000	69 000
Capacity ECOMIX® C, gal*	1 600	2 500	3 300	4 000	5 000	6 500	8 200
Capacity ECOMIX® P, Grains	15 300	22 700	30 700	38 000	46 000	61 300	92 000
Capacity ECOMIX® P, gal*	2 200	3 300	4 400	5 500	6 500	8 700	11 000
Salt per Regeneration, lbs	5.5	8.2	11.0	13.7	16.5	22.0	28.0
Backwash flow rate, GPM	2.7	3.4	4.8	5.7	6.6	8.7	14.8
Drain line flow restrictor** (DLFC)	027	032	042	053	065	075	130
Injector**	D - Red	E - white	F - blue	G - yellow	H - green	I - orange	K - light green

* Calculations based on the 7GPG Hardness.

** Injectors and DLFCs are shown for Clack Corporation control valves.

CALCULATION OF ECOMIX® VOLUME CAPACITY

The volume capacity is calculated in a simple way using only influent water hardness and the media's ion-exchange capacity as follows:

ECOMIX® C — 13 000 grain/ft³

ECOMIX® P — 17 500 grain/ft³

$$\text{Volume Capacity, (gal)} = \frac{\text{ECOMIX® volume (ft}^3\text{) x Ion-exchange capacity (grain/ft}^3\text{)}}{\text{Influent Hardness (gpg)}}$$

The volume capacity doesn't have to be corrected for the influent iron, manganese and organics levels

Example is given for a tank size 1252 containing ECOMIX® C:

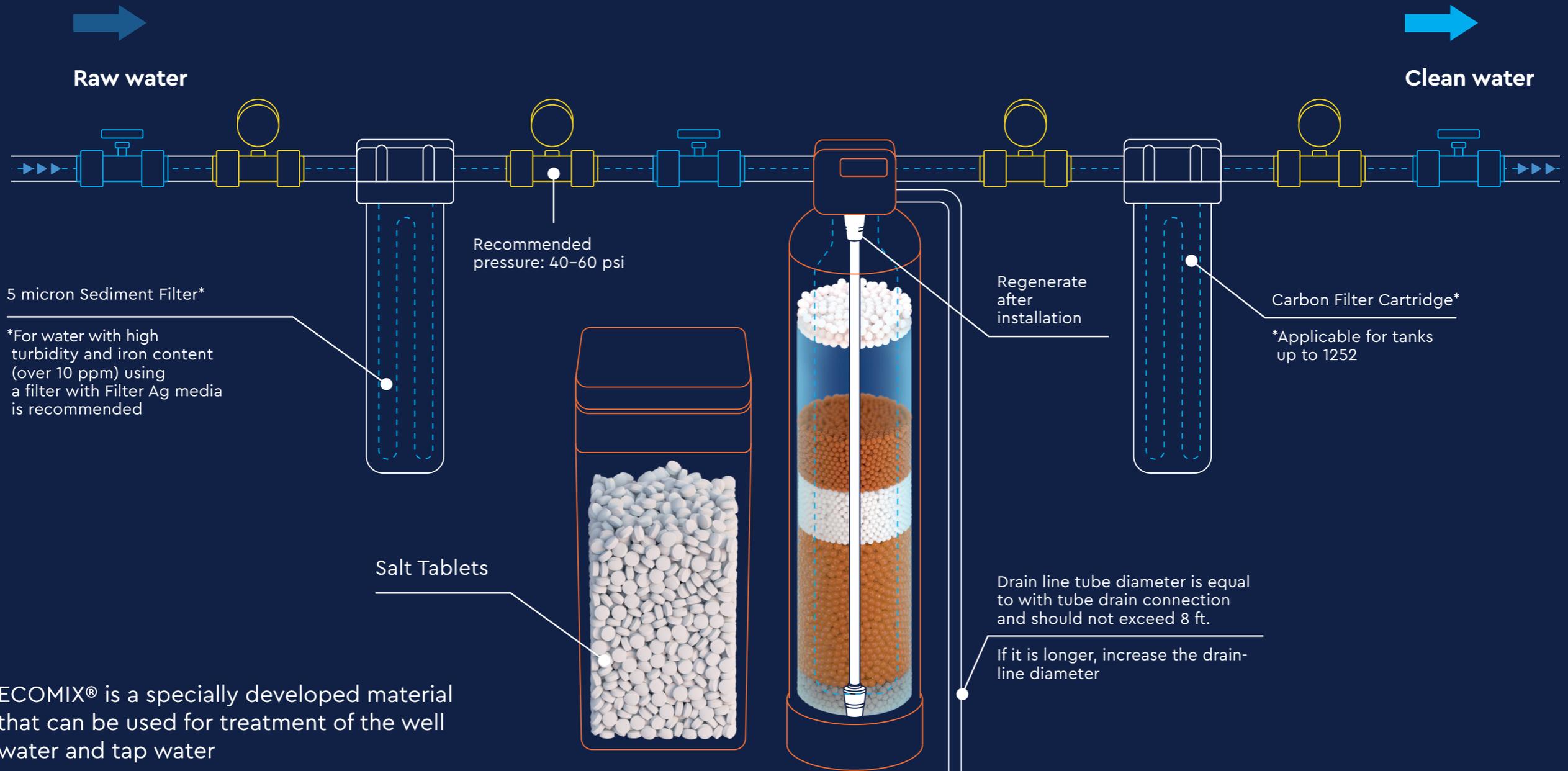
ECOMIX® C — 13 000 grain/ft³

0.88 ft³ + 0.88 ft³

Water test:
Iron — 8 ppm;
Manganese — 0.28 ppm;
Hardness — 7 gpg

$$\text{Volume Capacity} = \frac{1.76 \text{ ft}^3 \times 13\,000 \text{ grain/ft}^3}{7 \text{ gpg}} = 3\,200 \text{ gal}$$

ECOMIX® FILTER INSTALLATION SCHEME



ECOMIX® REALLY WORKS SO WELL!

ECOMIX® Type P

Case №1

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	30.5	0.6
Iron	ppm	≤0.3	2.59	<0.01
Manganese	ppm	≤0.05	0.34	<0.01
TOC	ppm	-	2.3	2.2
Ammonium	ppm	-	0.4	0.05
TDS	ppm	≤500	705	739
pH		6.5–8.5	6.9	6.5

Case №3

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	34.5	1.7
Iron	ppm	≤0.3	0.32	<0.01
Turbidity	NTU	≤ 5 (1)	0.5	<0.1
Ammonium	ppm	-	0.4	0.05
TDS	ppm	≤500	763	954

Case №2

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	9	0.1
Iron	ppm	≤0.3	9.5	0.1
Manganese	ppm	≤0.05	0.06	0.03
Ammonium	ppm	-	1.0	0.4
TDS	ppm	≤500	375	475
pH		6.5–8.5	6.6	6.6

Case №4

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Turbidity	NTU	≤5 (1)	5	0.5
Hardness	gpg	-	30.4	0.6
Iron	ppm	≤0.3	0.592	<0.01
TDS	ppm	≤500	701	737

*SMCL – Secondary Maximum Contaminant Level (non-enforceable aesthetic guideline)
United States Environmental Protection Agency (EPA)

ECOMIX® REALLY WORKS SO WELL!

ECOMIX® Type C

Case №5

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	34	0.9
Iron	ppm	≤0.3	1.9	0.07
Manganese	ppm	≤0.05	0.04	<0.03
TOC	ppm	-	6.5	0.27
TDS	ppm	≤500	625	660

Case №6

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	32	1
Iron	ppm	≤0.3	1.8	0.1
Manganese	ppm	≤0.05	1.7	0.01
TDS	ppm	≤500	615	648
pH		6.5–8.5	7.1	7.2

Case №7

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	40	0.5
Iron	ppm	≤0.3	9.3	0.18
Manganese	ppm	≤0.05	0.15	<0.01
TOC	ppm	-	12.7	3.9
Ammonium	ppm	-	0.45	0.05
TDS	ppm	≤500	742	870
pH		6.5–8.5	6.9	6.9

Case №8

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	24.9	1.1
Iron	ppm	≤0.3	0.4	0.178
Manganese	ppm	≤0.05	4.89	0.043
Ammonium	ppm	-	0.4	0.02
pH		6.5–8.5	7.4	7.6

Case №9

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	29.8	1.5
Iron	ppm	≤0.3	2.9	0.178
Manganese	ppm	≤0.05	0.25	0.043
Ammonium	ppm	-	2.8	0.4

Case №10

Parameter	Units	Recommended limit (SMCL)*	Raw water	Treated water
Hardness	gpg	-	31.3	0.8
Iron	ppm	≤0.3	2.2	0.16
Manganese	ppm	≤0.05	0.06	0.03
TOC	ppm	-	6.1	1.2
TDS	ppm	≤500	709	783
pH		6.5–8.5	7.7	7.7

*SMCL – Secondary Maximum Contaminant Level (non-enforceable aesthetic guideline)
United States Environmental Protection Agency (EPA)

ECOMIX® Q&A

Should I use resin cleaners or salt with resin cleaners when I regenerate ECOMIX® system?

No, resin cleaners should not be used with ECOMIX®. There are several reported cases when ECOMIX® efficiency was severely impaired after usage of resin cleaners. Regular softener salt and proper regeneration sequencing will keep ECOMIX® clean.

How does TDS change after treatment with ECOMIX®?

The TDS after the ECOMIX® system will increase by an average of 10% of the original content. This is due to the replacement of hardness cations with harmless sodium cations during ion exchange.

My tank holds a bag and a half of media. Can I use half a bag of ECOMIX® and save the other half for another installation?

Each bag contains 5 separate components in specific amounts. ECOMIX® components are thoroughly mixed during production and there should be no problem using half a bag. If you intend to use just half it is important to shake the bag before loading the vessel. To avoid the trouble, you can order ECOMIX® in full AND half bags. Specify packaging when ordering from your supplier.

Why is the softening capacity of ECOMIX® so low compared to cation softening resin?

The softening capacity is not lower. The capacity of the cation resin component of ECOMIX® is rated lower because a bag of ECOMIX® contains more than just cation resin. Cation softening resin is only one of the five components in ECOMIX®.

Is it possible to use ECOMIX® when iron content in water is higher than the limit of 15 ppm?

There are ECOMIX® units in operation which successfully remove iron in even greater concentrations. However, before doing so you should contact your water treatment specialist with a complete water analysis.

Can I use ECOMIX® if there is aeration or oxidant dosing ahead of the unit?

We do not recommend installation of oxidation and/or aeration before the ECOMIX® system. If you have to use aeration or oxidant dosing for any reason we highly recommend pretreatment with a multimedia sediment filter and an activated carbon filter to remove residual active chlorine.

Is ECOMIX® sensitive to H₂S?

ECOMIX® is not sensitive to hydrogen sulfide content in well water and its efficiency will not be affected.

Will ECOMIX® reduce H₂S?

Sometimes ECOMIX® may slightly reduce the rotten odor of H₂S but it is not recommended as a solution.

Can I use ECOMIX® if it was accidentally frozen during storage?

Freezing of ECOMIX® should be avoided as it may cause damage to its components. To avoid freezing, ECOMIX® should be stored in a dry room protected from sunlight at temperatures of 35–80 °F (2–27 °C). If it does freeze, ECOMIX® should be thawed out slowly at room temperature before loading and use. Do not treat frozen ECOMIX® with heat or steam.

Why is a top basket distributor necessary?

This distributor is necessary in order to prevent ECOMIX® from being lost during the backwashing sequence of regeneration.

What happens if I operate the ECOMIX® system without that first regeneration?

The system will not remove the contaminants properly. There are 5 components in one bag of ECOMIX®. For proper filter operation these components need to be «layered». When ECOMIX® is being regenerated, the mixture self-classifies into layers making it becoming ready for usage.

Is it true that ECOMIX® will remove all types of iron, including ferric?

ECOMIX® will not remove ferric or oxidized iron efficiently. In applications where ferric iron is present we recommend to install a sediment filter before the ECOMIX® system to trap ferric iron particulates.

Can I use ECOMIX® in cases of high iron, manganese or tannins content and with low hardness level?

ECOMIX® will operate successfully under these conditions. However, raw water hardness must be used to program the control valve and you must set the «Day Override» to 3 or 4 days. Be sure to contact your water treatment specialist if you have any questions.

ECOMIX® Q&A

My application is a well that is placed close to the surface water (lake, rivers, canals, ponds).

Shallow wells that are close to surface water may contain a mixture of well and surface water and may have higher than normal TOC and color. It could be microbiologically contaminated. In these situations, ECOMIX® is applicable but additional treatment may be required. We recommend paying attention to the color of the water and doing a tannin test. You must strictly follow the test instructions. For example, commonly used LaMotte test kits require a 30-minute wait before the results are indicated. Once complete, please send the water analysis and the tannin test results with a picture of the water in a white bucket to your water treatment specialist.

Is the Ferrosorb an ion exchange based product that is also regenerated by salt?

Ferrosorb is regenerated due to surface scouring mechanism during backwash. This is the reason why we always draw attention on the proper backwash flow rate.

Can I use ECOMIX® to just remove organic matter and tannins?

ECOMIX® should not be used if organic matter reduction is the only purpose of treatment. But ECOMIX® can be used to reduce organic matter (color) and to soften water from well or municipal supply. The unit's capacity should still be rated based on raw water hardness.

I have customers who use surface water (lake, rivers, canals, ponds) rather than well water. Can I use ECOMIX® for this application?

ECOMIX® is intended for well, but not the surface water treatment. Surface water may be microbiologically contaminated, have high levels of TOC (total organic carbons), tannins and color that often exceed ECOMIX® limitations. Surface water can be treated with ECOMIX® only after chlorination and sediment filtration followed by activated carbon filter.

Is ECOMIX® sensitive to active chlorine, pH level or TDS?

ECOMIX® shows stable operation with active chlorine levels below 1 ppm and pH in the range of 5 to 9. ECOMIX® is not affected by the anion composition of the water and is stable with feed water TDS below 4000 ppm.

Can ECOMIX® be used for treating mains water with high hardness and low iron, manganese content?

Yes, absolutely. ECOMIX® is the most suitable choice for this type of water.

Is ECOMIX® compatible with both downflow and upflow regeneration modes?

Yes, both downflow and upflow regeneration modes can be used for ECOMIX® with no preference.

Can the tank be completely filled with ECOMIX®?

No, the tank must maintain at least 40% free bed above ECOMIX® to ensure effective regeneration.

What determines the minimum required tank height?

The minimum tank size of 8×44 inches is based on the required minimum media bed height of 20 inches and at least 40% free bed for proper regeneration.

Is it necessary to install a sediment filter before the ECOMIX®?

It is highly recommended. Fine particulate matter can reduce ECOMIX® efficiency by clogging the surface of the media.

What does waste water contain after ECOMIX® regeneration?

Post-regeneration waste water may contain chloride, sodium, calcium ions, and other contaminants removed by ECOMIX®.

Does low backwash flow rate affect the ECOMIX® cleaning efficiency?

Yes, the backwash flow rate must be matched to the tank size to ensure proper fluidization and effective media cleaning.

ECOMIX®

up to **10** years
of service life



ECOMIX® C — 5-in-1 Solution in a single process:
Hardness, Iron, Manganese, Organic Iron, and Organics

ECOMIX® P — 3-in-1 Solution in a single process:
Hardness, Iron and Manganese

Consistently high efficiency regardless of water pH (5–9), hydrogen sulfide (H₂S) content, TDS (< 4000 ppm) or anionic composition

Simple regeneration with tableted salt — no need for additional chemicals

No pretreatment with oxidizing agents is required for iron and manganese reduction

No release of iron and manganese, even if the service run exceeds the softener's capacity

NSF/ANSI/CAN 61, NSF/ANSI 44, NSF/ANSI/CAN 372 quality certifications

ECOMIX® is not only a unique water treatment technology, ECOMIX® has been a firm platform for the business success of numerous companies around the globe