Maanvi Ecotech
CATALYZING GREEN FUTURE

Maanvi EcoSoft

High Efficiency Softener

A compact packed-bed softening platform designed to minimise salt, water and space while delivering consistently low hard



50% salt saving*	**80%** water saving*
50% footprint saving*	**<1 ppm** hardness claim*

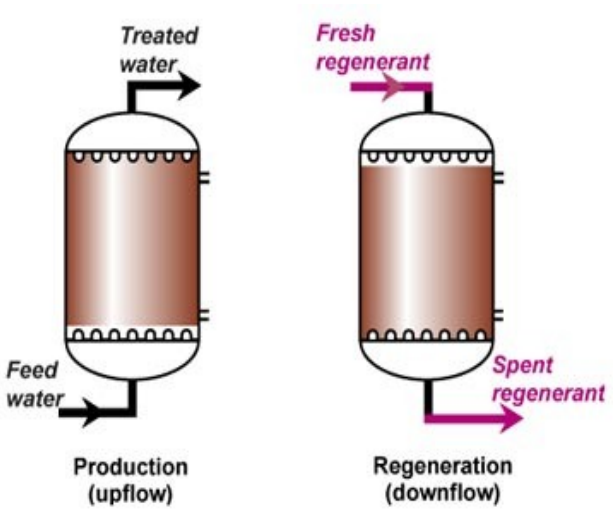
** Up to values / design claim. Actual performance is site-specific.*

Purity by Design, Engineered for Compliance, Future-proof Green Solutions.

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How EcoSoft works

Packed-bed service + counter-flow regeneration



1. Service upflow

Hard water passes upward through the packed strong-acid cation resin bed.

2. Regeneration downflow

Brine moves opposite to service, improving regenerant utilisation.

Packed bed

No routine backwash requirement in the packed-bed concept; only allowance for resin swelling is needed.

Higher effective bed depth

Compact vessel geometry enables more useful resin-bed depth inside the installation envelope.

Automation options

- Throughput-based regeneration
- Time-based cycle control
- Optional online hardness monitoring
- Automatic salt mixing / brine sequencing
- Duty-standby, alternating, parallel or series configurations

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Why EcoSoft lowers lifecycle cost

Up to 50%
salt saving*

Up to 80%
water saving*

Up to 50%
footprint reduction*

Lower ETP / ZLD burden

Less regeneration wastewater means lower downstream hydraulic and salt load.

Lower operator effort

Automatic regeneration and salt preparation reduce routine manual intervention.

High-quality soft water

EcoSoft literature targets less than 1 ppm hardness as $CaCO_3$ under approved design conditions.

Flexible operating philosophy

Select cycle trigger by throughput, time or online hardness, depending on process criticality.

Typical applications

BOILERS | COOLING WATER | RO FEED | PROCESS

** Savings depend on raw-water hardness, resin selection, regeneration dose, cycle length, rinse end-point and site operation. A site-specific calculation is recommended before commercial commitment.*

Reference cases: proven operating savings

Two industrial replacements demonstrate how EcoSoft converts lower salt and regeneration-water demand into measurable operating savings - on the same useful softened-water basis.

₹30.1 lakh
Pharma case - 2-year saving

₹40.0 lakh
API case - 2-year saving

ETP / ZLD excluded
Savings shown are conservative

Case 1 - Pharmaceutical facility

Existing: 2 conventional softeners in series
Replacement: 1 × EcoSoft 600
Duty: 25 m³/h | Target hardness: <1 ppm as CaCO3

58% less
salt consumption

86% less
regen water / effluent

Normalised 2-year basis

420,000 m³ useful softened water

₹30.1 lakh
Direct salt + fresh-water operating saving

Case 2 - API manufacturing plant

Existing: 2 × 60 m³/h conventional (1W + 1S)
Replacement: 3 × 30 m³/h EcoSoft (2W + 1S)
Normalised plant duty: 60 m³/h

46% less
salt consumption

78% less
regen water / effluent

Normalised 2-year basis

1,008,000 m³ useful softened water

₹40.0 lakh
Direct salt + fresh-water operating saving

Combined impact across the two design case studies

₹70.1 lakh direct saving over 2 years

Based on salt at ₹10/kg and fresh water at ₹50/m³, 350 operating days/year.
ETP / ZLD treatment and disposal cost are excluded; actual site savings depend on approved operating conditions.

Maanvi Ecotech (OPC) Pvt. Ltd.

Application Engineering | Water • Chemical • Energy Reduction

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