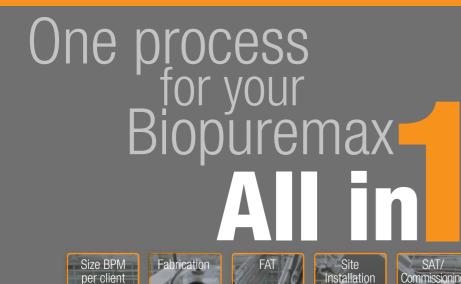
BIOPUREM A Media & Chemical Free

operation of high quality BioPharma water systems.

RO feed water without the need of any additional treatment.

Full hot water sanitization capability gives the Biopuremax system a unique advantage: the removal of all biofilm and viable organisms through an 80°C-90°C hot water cycle.

Biopuremax provides FAT, SAT and IQ-OQ validation and documentation as part of its





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BIOPUREMAX

The Next Generation of Pharmaceutical Pretreatment Water Systems

Green Technology Electrical Scale Removal

Photodecomposition of Free Chlorine Complete Hot Water Sanitization

Feed water from city supply

> Electrical reduction of scale for RO feed

ESR

HOD

RO feed

Oxidizer removal stage

Continues Bio burden Reduction (CBR) HOT water sanitization from feed to product!

Biopuremax – Maximum Purity for Your Needs

Biopuremax is the ultimate pretreatment system solution for pharmaceutical pure water systems: clean, simple, reliable and effective.

The system is based on Integration of two technologies: ESR and HOD

Electrical Scale Reduction (ESR) is an elegant solution that replaces both ion exchange softeners and antiscalant chemicals.

An electric field generates a high pH near the cathode which deposits scale in the reaction chamber and releases CO2.

Hydro Optical De-Chlorination (HOD) treats the ESR water, by exposure to ultra violet radiation which decomposes the free chlorine.

Municipal feed water is commonly treated with a sanitization agent Chlorine that damages delicate RO membranes or CEDI resin. This oxidizer is removed by the high powered ultraviolet lamp - the HOD unit. The HOD unit is an electromagnetic radiation device that uses no added substance.

Biopuremax technology has no moving parts, no regeneration requirement and its SS 316 smooth clean pipe construction has no media that may trap incoming contamination and incubate biogrowth.

Biopuremax Added Values:

Electrical Scale Reduction (ESR)

- No waste brine
- No salt and no salt handling
- No organic resins
- No backwash or regeneration

Photodecomposition of Free Chlorine (HOD)

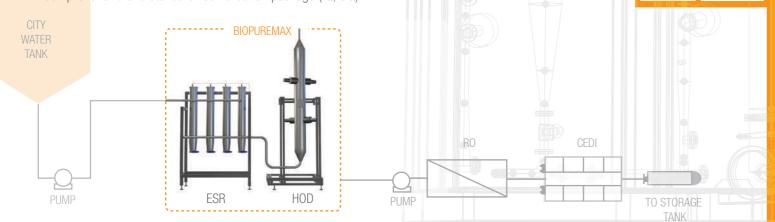
- No ACF no biofilm
- No SBS no chemical handling and no RO fouling
- Environmentally safe

Complete Hot Water Sanitization for total system

- The optimal sanitization method
- The most straightforward and effective solution for killing bacteria

Biopuremax is Cost Effective:

- Short ROI
- No moving parts
- Reduced operational costs
- Automated hot water sanitization
- Fast-track project delivery through standardization
- Skid mounted, pre-assembled, small foot print, short lead times, quick start-up.
- Optional RO-CEDI combination with hot water sanitization for a one-stop-shop solution
- Comprehensive and standardized validation package (IQ, OQ)



Electrical Scale Removal (ESR)

City Water

With Chlorine

- Easy removal of scale
- No tools
- No backwash or regeneration

Hydrodynamic Decomposition (HOD)

Feed Water To RO-CEDI Dechlorinated

- Oxidizer removal stage
- No moving parts
- Dechlorination: no chemicals, no media

Continues Bio burden Reduction (CBR) | Unlimited periodic sanitization with 80°C-90°C Hot Water

Environmental

- Water savings No waste stream No Sodium Bi Sulfate No NaOH or HCL

User Friendly

- Fully automated
 Very low maintenance

- Easy removal of scale
 No backwash
 No manual regeneration
 Auto hot water sanitization from city water,
 through the pretreatment system and RO-CEDI

Biopuremax

Quality & Compliance

Validation Package:

- FDA Requirements
- cGMP Requirements
- Latest USP and EP Standards
- ISPE Engineering Guide

Options

- GAMP 5
- CFR 21 part 11
- Free Chlorine / Chlorine Dioxide / Ozone in
- Supply of Complete System: City Water Tank, Biopuremax, RO, CEDI



