

INDION® High Purity Water Systems

INDION High Purity Water (HPW) Systems are designed to meet the stringent requirements of the pharmaceutical industries and have been developed after consultations with the pharmaceutical engineers and end users. The net result is a fully pre-validated system that is compliant with the Current Good Manufacturing Practices (CGMP) and Good Automated Manufacturing Practices (GAMP) and FDA compliant.

The system includes

- INDION water softener and microfiltration (MF) for preconditioning the process feed water.
- Multipurpose tank of SS construction designed to minimize microbial contamination and provide for water storage, hot water sanitization and chemical cleaning capabilities.
- Reverse Osmosis (RO) unit to remove upto 97% of Total Dissolved Solids and over 99% of total dissolved organics and particulate matters. RO also provides total removal of microbial species.
- Continuous Electro Deionization (CEDI) to remove boron and weakly ionized species like silica and carbon dioxide and produce high purity water with resistivity exceeding 18 mega Ω cm at 25°C.
- Ultrafiltration (UF) system (optional) to remove endotoxins and bacteria from the product water to produce highly purified water.
- Ultraviolet (UV) disinfection system (optional) provides a high transmissivity medium that allows the UV to effectively kill any trace microbial species.

Features

Hot Water Sanitization

- Provision for hot water sanitization
- No chemical requirement

Packaged System

- All the units are skid mounted for minimal foot print and easy installation and commissioning.



Designed for pharmaceutical industry

- Compliance with Current Good Manufacturing Practices (CGMP) and Good Automated Manufacturing Practices (GAMP).
- Compliance with Food and Drug Authority (FDA), International Society for Pharmaceutical Engineering (ISPE) and EU Pharmacopoeia (Ph. Eur) standards.
- All standards are of sanitary design.

Standard pre-validated system

- Pre-validation to industry accepted standards.
- Pre-delivery Factory Acceptance Testing (FAT)
- Provisional Installation Qualifications (IQ) at our factory.

Ultimate Process Security

- Multi-stage monitoring.
- Automated hot water sanitization at 85°C.
- Pass code PLC security.
- Advanced CEDI purification technology.

Designed for serviceability

- Easy access design.
- PLC information download facility.
- Performance qualification option for system validation.
- Inter-stage sampling capability.
- Automated membrane condition alarm.
- Full range of service maintenance contracts.

Treated water quality: Resistivity at 25°C Greater than 18 mega Ω cm; Total Organic Carbon (TOC) Less than 100 ppb
Total Bacterial Count (TBC) Less than 10 CFU / 100 ml

Specifications

- One INDION Softener complete with frontal pipe work & valves and initial charge of ion exchange resin
- One Microfiltration MF unit
- One Multipurpose Tank of SS 316 L construction
- One RO unit complete with high pressure pump, membranes and other accessories
- One Continuous Electro Deionisation (CEDI) unit
- One Ultrafiltration unit (optional)
- One Ultraviolet unit (optional)
- One lot Sanitary fixtures

Applications

Pharmaceutical industries involved in the manufacture of:

- Large and small volume parenterals
- Serum/media
- Genetically engineered drugs
- Ophthalmic solutions
- Antibiotics
- Cosmetics & Neutraceuticals
- Veterinary products
- OTC and ethical products
- Fermenter make-up
- Diagnostics & Medical devices

Technical Specifications

| Model Number | | 400 | 1000 | 1500 | 2000 | 3000 | 4000 | 6000 |
|------------------|-----|-----|------|------|------|------|------|------|
| Product flow | l/h | 400 | 1000 | 1500 | 2000 | 3000 | 4000 | 6000 |
| Feed flow | l/h | 533 | 1333 | 2000 | 2666 | 4000 | 5333 | 8000 |
| Concentrate flow | l/h | 133 | 333 | 500 | 666 | 1000 | 1333 | 2000 |
| Average recovery | % | 75 | | | | | | |

Nominal flows are based on operation at 25°C, 500 mg/l TDS, 20 mg/l CO₂, and SDI<3. Product flows at a maximum outlet pressure of 1 bar

Our state-of-the-art manufacturing facilities are ISO 9001, ISO 14001 & ISO 45001 certified.

To the best of our knowledge the information contained in this publication is accurate. Ion Exchange (India) Ltd. maintains a policy of continuous development and reserves the right to amend the information given herein without notice. Please contact our regional / branch offices for current product specifications.

INDION is the registered trademark of Ion Exchange (India) Ltd.



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Manufacturing Units

India - Ankleshwar | Hosur | Patancheru | Rabale | Verna | Wada

Overseas - Bangladesh | Indonesia | Saudi Arabia | UAE

All India Service and Dealer Network

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