

*Serving the  
Pharmaceutical Industry...*

*...in more ways than one*



Ion Exchange India has been a pioneer in total water management for more than four decades. Our close association with the pharmaceutical industry, technological expertise and R&D capabilities, have enabled us to develop customised and speciality products and solutions to meet the industry's stringent requirements for high purity water treatment and distribution, bulk drug purification and manufacture of pharmaceutical formulations.

## INDION® High Purity Water Systems

### RO-EDI Systems



- Hot water sanitisation
- Complete pure water generation package on one skid
- Fully pre-validated to industry accepted standards
- Compliance with latest USP and Ph Eur specifications
- Compliance with GAMP and ISPE design standards

### SWIFT Demineraliser



- Instantaneous flow rates upto 20 m<sup>3</sup>/h
- Conductivity less than 1 μS-cm, with low running costs
- Automatic PLC control with continuous display readout of system status
- Short cycle (4 hours), rapid regeneration (35-min)
- High chemical efficiency, smaller footprint and higher flow rates than conventional plants.
- Near neutral effluent reduces disposal costs

### Distribution Systems



- Hot water sanitisation at > 80° C
- Imported SS316 L tubes with original certificates with mill finish <0.8R<sub>a</sub>, after EP: 0.3 - 0.5R<sub>a</sub>
- All pumps, UV steriliser & fittings in sanitary construction
- Orbitally welded with printout facility
- Built around ISPE and cGMP guidelines
- Fully automatic with SCADA 21 CFR Part 11 compliant

## INDION® Water Quality Monitoring Products

Ion Exchange India, in exclusive tie-up with Eutech Instruments, Singapore manufactures a wide range of water quality monitoring instruments at a state-of-the-art manufacturing facility at Hosur, Tamil Nadu.

The range includes process analysers and hand-held portable instruments for measuring critical water parameters like conductivity, pH, redox, resistivity.



## **INDION<sup>®</sup>** Speciality Products for Pharmaceutical Formulations

Ion Exchange India is the first company in India to have an ISO 9001 & 14001 certified state-of-the-art resin manufacturing facility, at Ankleshwar, Gujarat. We are also the first to have an FDA approved manufacturing facility for pharmaceutical excipient resins, also at Ankleshwar. Our R&D and technical experts interact closely with customers and develop solutions best suited to the manufacture of pharmaceutical formulations.



Our range of speciality excipient resins is widely used for several applications such as:

### **Taste Masking**

The problem of bitter and obnoxious taste in paediatric and geriatric formulations is solved by using INDION speciality resins in dispersible tablets and suspensions, particularly in formulations based on Chloroquine Phosphate, Roxithromycin, Dextromethorphan, Ciprofloxacin, Norfloxacin, Pseudoephedrine, Bromhexine, Dicyclimine Hydrochloride, Ofloxacin, Azithromycin and several other drugs.

### **Sustained and Controlled Release**

INDION resins are formulated to required particle size, degree of crosslinking and functionalities for specific drug release. They provide uniform, prolonged and predictable drug release characteristics.

These resins are used in formulations based on Isoxsuprine Hydrochloride, Pseudoephedrine Hydrochloride, Ephedrine Hydrochloride, Diltiazem Hydrochloride and many other drugs.

### **Vitamin B<sub>12</sub> Stabilisation**

Vitamin B<sub>12</sub> deteriorates on storage, resulting in expensive overages. The stability of Vitamin B<sub>12</sub> can be prolonged by complexing it with INDION speciality resin.

The complex is as effective as the free form of the vitamin.



### **Tablet Disintegrants**

INDION speciality resins expand upto 900% on contact with moisture, causing effective disintegration of tablets.



### **Cholesterol Reducers**

Cholestyramine resin USP, when used as an active ingredient, binds bile acids leading to replenishment of the bile acids through increased metabolism of serum cholesterol. This helps reduce serum cholesterol levels.

## **Processing of Pharmaceuticals and Bulk Drugs**

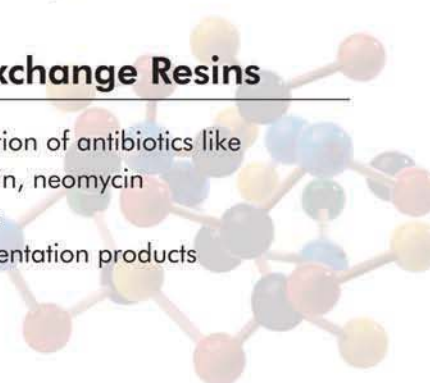


As the behavioural pattern of chemical compounds can be highly individualistic, the pharmaceutical industry requires products that are engineered to meet the requirements of a particular application.

Ion Exchange India offers the pharmaceutical industry customised solutions consisting of:

### **INDION<sup>®</sup> Ion Exchange Resins**

- Isolation and concentration of antibiotics like streptomycin, gentamycin, neomycin
- Isolation of amino acids
- Decolourisation of fermentation products
- Deashing of antibiotics



## **INDION<sup>®</sup>** Polymeric Adsorbents

Polymeric adsorbents are available in different polarities, surface areas and various chemical natures with polystyrenic and polyacrylic ester matrices for:



- Isolation and concentration of antibiotics like tetracycline and oxytetracycline
- Decolourisation of antibiotics and bulk drug intermediates

## **NORIT Activated Carbon**

Ion Exchange India offers the NORIT range of activated carbon for purification and decolourisation of bulk drugs and intermediates. NORIT NV is the world's largest producer of activated carbon, manufactured to stringent ISO 9000 norms. The products adhere to the US Food and Chemical Codex 1996.

NORIT carbon offers a wide range of products in granular, powder and extrudates form with:



- Extremely low impurities such as ash content, acid solubles and other extractables
- Lower drug retention
- Superior filterability; reduction in process time

**Also available, a range of speciality chemicals for boiler and cooling water treatment, RO antiscalants and speciality cleaners.**

## **INDFLOC<sup>®</sup>** Polyelectrolytes

Ion Exchange India offers a range of synthetic polyelectrolytes for various applications such as:

- Treatment of pharmaceutical broth
- Clarification and purification



These are manufactured in our ISO 9001 & ISO 14001 certified facility at Patancheru, Andhra Pradesh.

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.

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