

# **SPECIALITY CHEMICAL TREATMENT PROGRAMMES FOR WATER AND PROCESS APPLICATIONS**



Ion Exchange offers a complete range of world-class Speciality Chemical Treatment Programmes for water and non-water applications across industries.

Our INDION Specialty Water Treatment Programmes include cooling water treatment, boiler water treatment, fireside treatment, coagulants, flocculants, antiscalants for RO and MEE, membrane cleaning chemicals and water testing kits.

We also offer a wide range of Speciality Process Chemicals under the brand names INDION, INDFLOC, INDSERSE, INDFOAM, IONEX and IONREF for the sugar, textile, paper, iron ore, copper, alumina, oil & gas, mining and many other industries.

Our Speciality Chemicals are manufactured at our state-of-the-art Industrial Chemicals manufacturing unit in Telangana, India, which is ISO 9001, 14001, 45001 certified. The facility includes an inhouse R&D Centre which is recognized by the Department of Scientific and Industrial Research (DSIR), Govt. of India. This is backed by our Application Laboratory facilitated with unique diagnostic tools, product customization and an end-to-end product evaluation set up. Our simulation facility ensures optimal product performance and efficacy of various treatment programmes.



Manufacturing Facility



R&D Centre

Patancheru, Telangana

## SPECIALITY PROCESS TREATMENT CHEMICAL PROGRAMMES

**INDION®** | **INDFLOC®** | **INDBOND** | **IONREF®**

**INDFROTH** | **INDSERSE** | **INDSLIME** | **INDFOAM** | **INDFLOAT** | **INDZYME** | **INDSIZE**

With increasing water scarcity, availability of water is a major problem for industries especially those which require huge volumes of water for their production processes. Moreover, there are stringent environmental discharge norms that the industry has to meet.

With comprehensive range of technologies, best quality products, superior application knowledge and outstanding service support, Ion Exchange provides customized one-stop Water and Environment Management Solutions for the industry's varied needs.

Our range of speciality chemicals includes wide range of water treatment chemicals and speciality performance and process chemicals customized for the manufacturing process. Our products help increase processing yields, quality of finished products and reduce the consumption of water in the manufacturing processes.





## Sugar & Distillery Process Chemicals

Offering a complete range of sugar and distillery chemicals to process cane and beet, our wide range of speciality sugar processing chemicals improve product quality, operating costs and efficiency. Our *Green Chemistry* and technologies for process biocides, antiscalants and scale inhibitors, coagulants and flocculants and defoamers meet the industry's growing requirement for safe and sustainable products.

Application	End use	Product
Sugar	Mill Sanitation Chemicals	INDION 9053, 1592
	Flocculant for Juice Clarification	INDFLOC 27
	Antiscalant for Evaporators	INDION 8102, 8104, 8106, 8108
	Viscosity Reducers	INDION 1513, 1514
	Resins for Sugar Refining	INDION 830 S, 930 A
	Dextarnase for Dextrin Conversion in Sugar Process	INDNZYME 713
	Amaylase Starch for Hydrolyzing endoamylase in Sugar Process	INDNZYME 714
	Mud / Baggase POL enhancer	INDION 1517, 1515
	Scale Softener for Evaporator	INDION 1501
	Descalant for Evaporator	INDION 1502, 1503, 1504
	No Phos / Alizine	INDION 1550
Bleaching Aid	INDION 1516	
Remelt Sugar	Colour Precipitant	INDION 1951, 1952, 1954
	Floatation Aid	INDFLOAT 100
Distillery	Enzyme based alcohol booster for Fermentation Process	INDNZYME 711, 712
	Antifoams	INDFOAM 5001, 5002, 5003
	Antiscalant	INDION 8108, 8102

### Resins for Sugar Decolourization:

Application	Product
Removal of high level colour bodies from sugar syrup	INDION 950, 930
Removal of colour bodies from sugar syrup & other process streams. Conforms to NSF/ANSI/CAN 61 & is GOLD seal certified by WQA	INDION 830 S (Type 1)

### Resins for Glucose / Dextrose / Sorbitol Deashing:

Application	Product
Treatment of non-aqueous solution such as deashing of glucose, dextrose, sorbitol & purification of MSG	INDION 225 H, 860 S, 845



## Textile Process Chemicals

We offer the following products to enhance the value of end products while recognising our responsibility to the environment and people's lives.

Application	Product
Antimigrating Agent	INDFLOC 831 T
Lubricating Agent	INDFLOC 860 T
Colour Removal Polymer	INDFLOC 85 X Series

### Resins:

Application	Product
Purification of NMMO solvent (20-25 % aqueous solution)	INDION 236, 266, 810
DM PLANT	INDION 225, 2250 H, 236, GS300, GS3000, FFI, 850, 860

## Oil & Gas Process Chemicals

Ion Exchange meets the industry's need for speciality process chemicals to improve performance across its value chain - from upstream exploration to downstream refining process. Under our Process Treatment Chemicals Solution, we offer a range of process chemicals applications and fuel additives to suit the crude basket of every refiner.

Application	End use	Product
<b>Refinery: Downstream</b>		
Refinery Process Chemicals	Demulsifier	IONREF 3823 (Oil Soluble) IONREF 3824 (Water Soluble)
	Dew Point Neutralizers	IONREF 3801
	Corrosion Inhibitors/ Filmers	IONREF 3804
	Corrosion Inhibitor (Amine Unit)	IONREF 3811
	Diesel Hydrotreater Antifoulant	IONREF 3820
	Coker Antifoam	IONREF 3831
	Amine Unit Antifoam	IONREF 3833
Fuel Additives	Diesel Fuel Lubricity Improver	IONREF 3872
	Pour Point Depressant	IONREF 3849 IONREF 3850
Oil Field Chemicals	H <sub>2</sub> S Scavenger (Water Soluble)	IONFLD 3902
	H <sub>2</sub> S Scavenger (Oil Soluble)	IONFLD 3910
<b>Oilfield: Upstream</b>		
For the upstream oil field programs, we offer customized products for applications like desalter programs, corrosion inhibition / filmer range of antifoulants.		

## Resins:

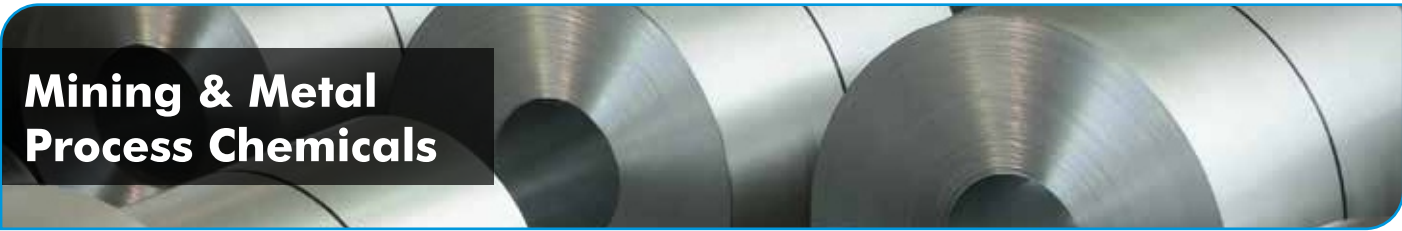
Application	Product
Fe removal MEG	INDION 525 H
MEG lean cycle water purification	INDION 790, 890
Aldehyde removal from MEG	INDION 860
DM PLANT	INDION 225, 2250 H, 236, GS300, GS3000, FFI, 850, 860

## Ceramics Process Chemicals

Our range includes organic dispersants and binders to improve efficiency during production of various ceramic products including vitrified ceramic tiles. Our products improve the wet milling process and green strength of ceramic products.

Application	Product
Dispersants	INDSPERSE 1938
Binders	INDBOND 2905





## Mining & Metal Process Chemicals

Our range of specialty process chemicals for alumina, bauxite, coal, iron ore, copper nickel, zinc, uranium, gold and silver provide several benefits like increasing mineral recovery, finished product quality, high degree of operation flexibility etc. These products also help in decreasing operating cost. They are also designed to be environmentally sustainable using [Green Chemistries](#).

Application	Product
Flocculants & Coagulants for thickeners & belt press	INDFLOC 443 HM, 238, 239
Collector & Frother	INDFROTH 3665
Dust Suppressant	INDION 6251
Tailing Management of Ores	INDFLOC 443 HM
Coal flow aid for wet coal in CHP	INDION 6250, 6259
Antioxidants	INDION 6250
Fuel Additives	INDION 6289
Foam Control	INDION 1500

## Resins:

Application	Product
Selective adsorption of bivalent mercury from industrial effluent	INDION MSR
Selective recovery of mercury and precious metals	INDION TCR
Extraction and recovery of metals, removal of heavy metals	INDION BSR, SIR
Recovery of metals from aqueous and non-aqueous streams	INDION 790, 730, 740, 236
Recovery of precious metals like palladium, platinum etc	INDION PRR1
Removal of colour, Fe from HCl	INDION IFF
Removal of phenol, phenoxy from HCl	INDION PA 800, 1200
Removal of phenol, phenoxy from waste water	INDION PA 800, 1200, 500, 600
Removal of phenol, phenoxy from waste mother liquor formed during manufacture of 2-4 D acid	INDION PA 1200
Removal of PFOA from liquid PTFE process stream	INDION GS 350 SP CL



## Pulp & Paper Process Chemicals


Our range of specialty process chemicals for the Pulp and Paper industry help improve quality of products and processing yields and decrease operating costs thereby enhancing product profitability and minimizing Environment, Health and Safety (EHS) concerns.

Application	End use	Product
Pulping	Defoamers	INDFOAM 3000 HS, 3001, 1500
Machine Runability	Fixing Agents	INDFLOC 2048 C, 238, 239
	Drainage aids & anionic trash removers	INDFLOC 239 LT, POLYDRAIN 243 H
	Dry strength resins	INDFLOC 41, 42, 47, 2820, 3029, 8315
Wet End	Retention aids	INDFLOC 240, 140 PG4, 441
	Biocides & Slimicides	INDSLIME 1014, 1015, 1016, 1018, 1019, 1020, ClO <sub>2</sub>
	Boil out program	INDION 7610
	Defoamers	INDFOAM 3000 HS, 3001
Performance Specialities	Dispersing agents	INDSPERSE 1938
	Colour removal agents	INDFLOC 856, 857, 859 M
	Thickeners	INDFLOC 8325
Surface Sizing Agents		INDSIZE SA 225, SA 230, SC 201

# SPECIALITY WATER TREATMENT CHEMICAL PROGRAMMES

**INDION® | INDFLOC®**

Our utility water treatment chemical solutions include efficient treatment and management of raw water, boiler and cooling water systems, membranes and evaporator systems and waste water treatment systems. Their use significantly improves the performance of utility water systems, safeguarding the metallurgy and assets while protecting the environment through safe and reduced discharge of water.

Our range also includes products using *Green Chemistries* and under the brand name **INDION®** . These chemicals are safe to use, made from renewable feedstocks and are easily biodegradable.

## **INDION® Boiler Water Treatment Chemicals**

We offer a wide range of boiler water treatment chemicals for low, medium, and high-pressure boilers. Our chemical programs – both standardized and customized, prevent deposits and corrosion in pre-boiler, boiler, and post-boiler systems. Our range also includes NSF certified products to meet the exacting needs of the Food & Beverage, Sugar and Pharma industry.

Our range of speciality boiler water treatment chemicals includes:

- **Antifoams** - for managing Steam Purity
- **pH boosters** - for DM Water and Boiler Feed and Drum Water
- **Oxygen scavengers** - Sulphite, Hydrazine Hydrate, Carbahydrzide, Erythorbate and DEHA based
- **Neutralizing and Filming Amines** – for Condensate Return line protection
- **Scale softening additives** - Carbonate and Phosphate based
- **Co-ordinated / Congruent / Equilibrium Phosphate Treatment** - for high pressure boilers
- **All Volatile Boiler Treatment**
- **Single Drum Polyamine Treatment** – Neutralizing and Filming amines
- **Sludge conditioners** - for calcium carbonate, calcium phosphate and metal oxides



### **INDION® Easy Test Kit**

Specially designed for on-the-spot analysis of make-up water & boiler water without a trained chemist

## Fuel & Fireside Additives

Ion Exchange offers complete range of fuel and fire side additives for SO<sub>x</sub> reduction, reduction in clinker formation, reduction in Loss of Ignition (LOI), improvement in the boiler efficiency and antioxidants for elimination of coal auto combustion.

Application	Products
Improvement in the boiler efficiency and SO <sub>x</sub> reduction	INDION 6354
Reduction in clinker formation and improvement in boiler efficiency	INDION 6436
Reduction of LOI and improvement in boiler efficiency	INDION 6330
Antioxidant for elimination of coal auto combustion	INDION 6250

# INDION® Cooling Water Treatment Chemicals

We offer a broad range of environmentally safe cooling water treatment programmes for managing open and closed recirculation systems. Our speciality chemicals and programs are effective for treating a variety of water quality and make-up waters like treated and contaminated raw waters, industrial and domestic effluents, sea water under differing system conditions.

Our range of products include:

- Scale Control Additives
- Corrosion Inhibitors
- Dispersants to control fouling by suspended solids and metal oxides
- Silica Scale Inhibitor
- High Stress Scale Retardants
- Bio dispersants
- Oxidizing Biocides – Stabilized Chlorine, Stabilized Bromine and Chlorine dioxide
- Non Oxidizing Biocides
- Multipurpose deposit and corrosion control programs of various types
  - Zinc Phosphates
  - Extended Phosphate
  - Alkaline Zinc or Zinc organic
  - All organic
  - Low Nitrate
  - Molybdates
- Chlorine dioxide Generators – Single Pump, Two Pump and Three Pump method
- INDION AutoChem – Automatic Dosing Systems



**INDION® Easy Test Kit**

Specially designed for on-the-spot analysis of cooling water without a trained chemist

## Speciality Chemicals for Membrane and Thermal Evaporators

Ion Exchange offers a complete range of membrane chemicals to reduce membrane and evaporator fouling, improve permeate production and quality. Use of our speciality chemicals enhances membrane and evaporator systems KPI's (performance parameters) and life. They also help in reducing downtimes and prevent failures.

- Acidic and Alkaline Cleaners for removing mineral scales, organic foulants and microbial fouling in UF / RO / NF / MBR membranes and evaporators
- Membrane Sanitizers and non-oxidizing biocides
- Preservatives to enhance life of stored membranes
- Antiscalants for preventing mineral deposits, inorganic foulants and silica in membrane and thermal evaporation systems. NSF Certified.
- Defoamers for MED and MSF Thermal Desalination systems



## Speciality Synthetic Polyelectrolytes

Coagulation and flocculation are the unit processes employed for the removal of contaminants like - suspended particulates, colloidal particles, colour bodies and soluble heavy metals. Our wide range of synthetic polyelectrolytes (cationic, anionic and non-ionic organic coagulants and flocculants) are applied for clarification of contaminated water and wastewater streams.

Ion Exchange offers a complete range of NSF Certified Polyelectrolytes (coagulants, flocculants and colour precipitants) for various solid liquid separations.

- Pretreatment of raw water and untreated effluents
- Colour removal in dyeing, textile, paper, distillery and other effluent streams
- De-oiling and de-emulsification of refinery effluents (DOPE)
- Brine Clarification



# IONSITE DATA MANAGEMENT SERVICE

Our cooling and boiling water processes are also digitally managed by INDION AutoChem system. The system allows real time monitoring, analysis and control of the treatment program, resulting in operational efficiency, asset protection, water conservation and regulatory compliances related to discharge of water.

The INDION AutoChem system meets the fundamental objective of an effective cooling water treatment management programme that includes interdependency between the three key elements namely corrosion, scale / deposits and microbiological activity. Using digital technology, it monitors, analyses and controls the treatment programme remotely for all the key elements thereby increasing operational efficiencies, asset life and reducing risk of failure during the implementation of the treatment program.



**INDION AutoChem**

The IONSITE Data Management Service is a secure cloud-based solution that automatically collects process and performance data in real time. It uses advanced analytical tools and algorithms to take real time action remotely for optimization of the water treatment programs. With 24x7 secure access to a dedicated web portal, the system can be monitored in real time from any digital device. Customized SOP's and dashboards present an overview of the system performance KPI's. Real time alerts provide instant notification of system upsets or exceptions to KPI's, with the capability to perform root-cause analysis by the central technical service team managing the performance through the IONSITE digital service to our customers.

By harnessing the power of digitalization using the INDION AutoChem system and the IONSITE digital platform, we manage our treatment programs remotely and in real time.

## Total Water and Environment Management Services



Leveraging our strong engineering capabilities, we have also created large number of impressive references in providing Alternate Sources of Water as detailed below:

Industrial Effluent	Sea Water	Municipal Sewage
50+ for Recycle	14+	100+
25+ for ZLD		
100+ for ETP		

Ion Exchange is one of the largest comprehensive service providers for total water and environment management for industries, homes and communities. We extend our service capabilities to manage water assets in an integrated way along with process and utility chemical treatment systems to deliver single single-window services that include:

- Remote (digital) and onsite Operation & Maintenance for process and utility systems
- Rehabilitation, modification and automation of systems
- Supply of critical consumables and spares
- Water audits
- Onsite training

We follow and adhere to stringent statutory health and safety requirements not only in our facilities but also at the sites managed by us.

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**<sup>®</sup>, **INDFLOC**<sup>®</sup> & **IONREF**<sup>®</sup> are registered trademarks of Ion Exchange (India) Limited.



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#### Regional and Branch Offices

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Hyderabad | Kolkata | Lucknow | Vadodara/Vashi | Visakhapatnam

#### Overseas Offices

Bangladesh | Canada | Indonesia | Kenya Malaysia | Oman | Portugal  
Saudi Arabia | Singapore/South Africa | Sri Lanka | Tanzania | Thailand | UAE | USA

#### Manufacturing Units

India - Ankleshwar | Hosur | Patancheru | Rabale | Verna | Wada Overseas - Bangladesh | Indonesia | Saudi Arabia | UAE

All India Service and Dealer Network

[www.ionexchangeglobal.com](http://www.ionexchangeglobal.com)

