



PAPER CARE

PROCESS CHEMICALS & WATER MANAGEMENT
FOR THE PAPER INDUSTRY



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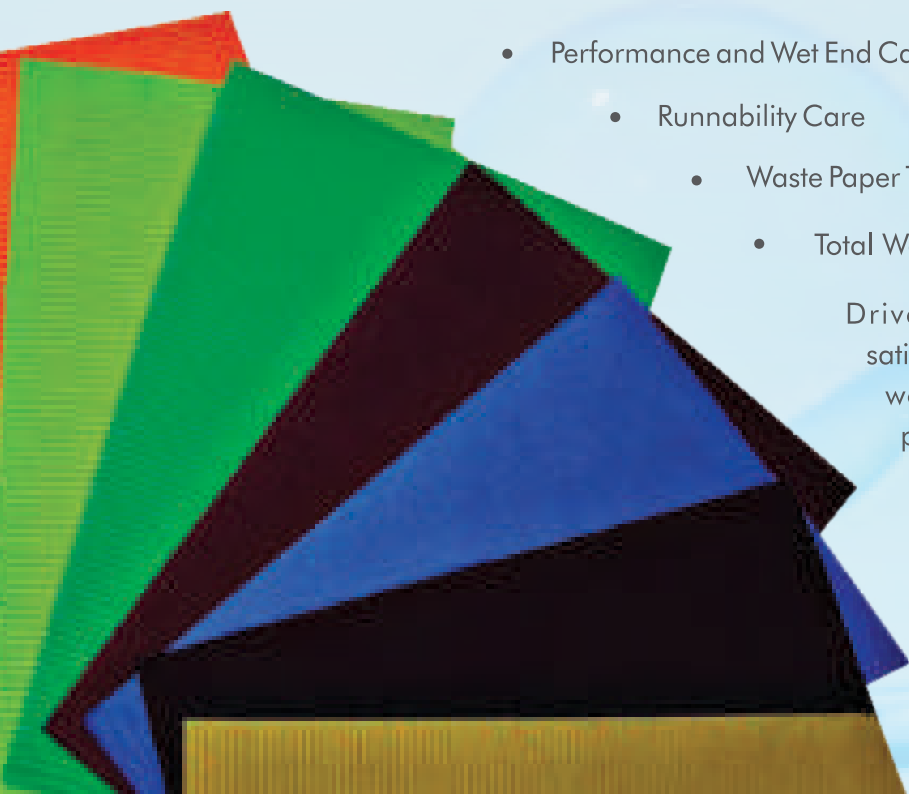
Innovative Solutions for the Paper Sector

Ion Exchange leverages more than five decades of pioneering specialisation in process chemicals, water and environment management.

With the most comprehensive range of technologies, best quality products, superior application knowledge and outstanding service support, we truly provide customised one-stop solutions for the paper sector's varied needs.

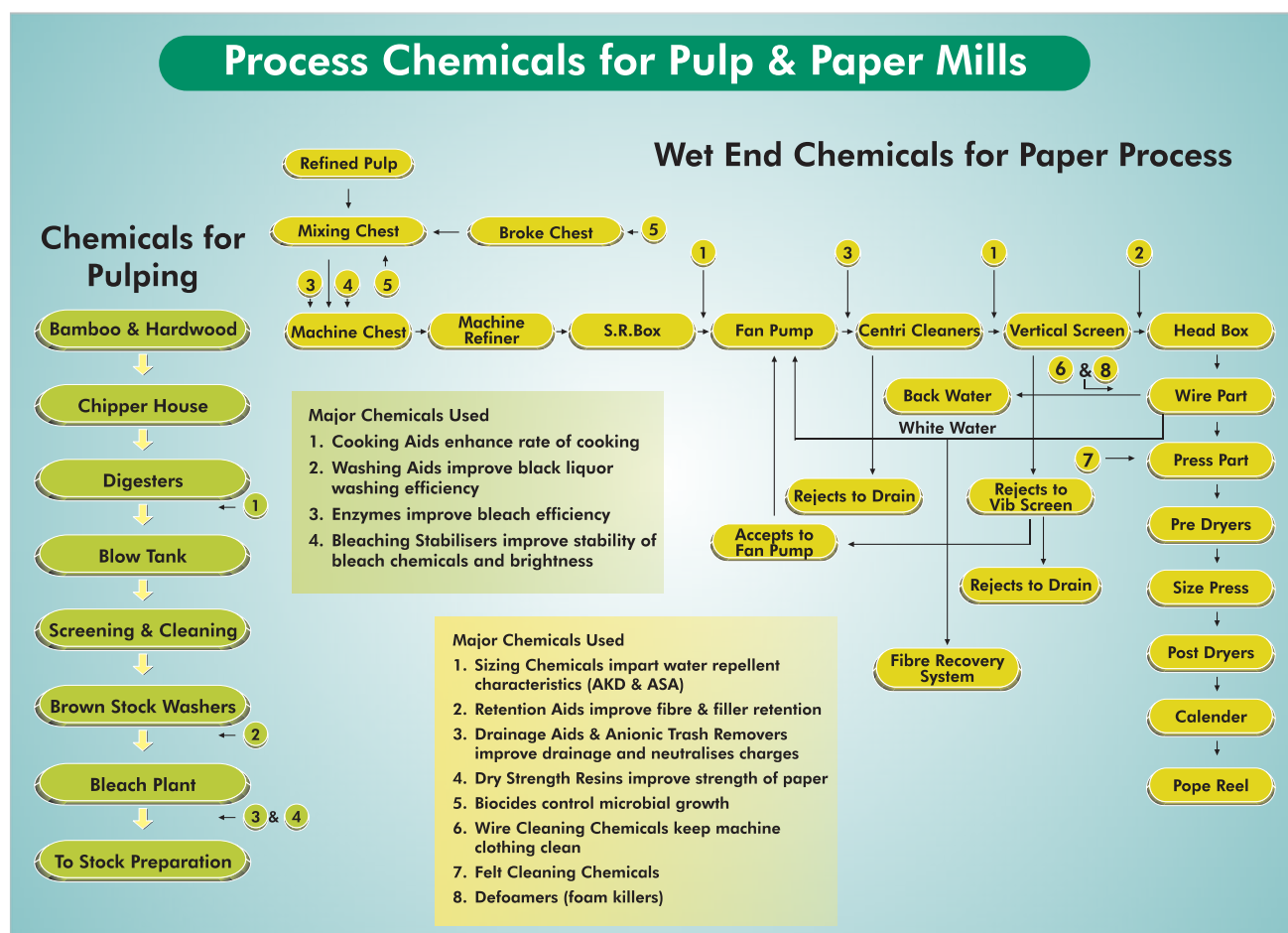
- Performance and Wet End Care
 - Runnability Care
 - Waste Paper Treatment
 - Total Water Management

Driven by our commitment to customer satisfaction, Ion Exchange puts its expertise to work, ensuring optimal production and performance for you.



Performance/Process Chemicals

Process Chemicals for Pulp & Paper Mills



Defoamers

Product	Application	Chemical Composition
INDFOAM 3000	Defoamer and deaerator for paper machine	Water-based non-silicone
INDFOAM 2000	Defoamer for paper machine	Water-based non-silicone
INDFOAM 2346	Defoamer and deaerator for waste water	Water-based non-silicone
INDFOAM 1500	Defoamer for pulp mill and waste water	Water-based silicone defoamer

Retention and Drainage Aids

Product	Application	Chemical Composition
INDFLOC 140 PG4	Retention aid for paper making	Cationic powder polymer
INDFLOC 240	Retention aid for paper making	Cationic powder polymer
Polydrain 243H	Drainage aid for paper and board machines	Cationic liquid polymer

Fixing Agents

Product	Application	Chemical Composition
INDFLOC 2048C	Fixing agent and anionic trash controller	Cationic polymer
INDFLOC 2045C	Fixing agent	Cationic polymer

Slimicide Applications

Product	Application	Chemical Composition
INDSLIME 1014	Slimicide	Water-based silicone defoamer
INDSLIME 1015	Slimicide	Non-oxidising biocide

Dry Strength Chemicals

Product	Application	Chemical Composition
INDFLOC 41	Dry strength resin	Cationic DSR
INDFLOC 42	Dry strength resin	Cationic DSR
INDFLOC 2820	Dry strength resin	Amphoteric DSR
INDFLOC 3209	Dry strength resin & fluff control	Amphoteric polymer
INDFLOC 8315	Dry strength resin for size press	Anionic DSR
INDION AZAMYL	Kraft absorbency booster, strength improvement	Modified PAM
POLYPLUS	Paper conditioning agent	Modified PAM

Dispersing Applications

Product	Application	Chemical Composition
INDSPERSE 1938	Coating dispersant	Anionic polyacrylate
INDSPERSE 1945	Clay dispersant for calcium carbonate, soap stone powder	Anionic polyacrylate

Polymers for Water & Effluent Treatment Plants

Product	Application	Chemical Composition
INDFLOC 238	Clarification aid for raw & waste water	Cationic coagulant
INDFLOC 239	Clarification aid for raw & waste water	Cationic coagulant
INDFLOC 244	Flocculation aid	Anionic emulsion flocculant
INDFLOC 245	Flocculation aid	Anionic emulsion flocculant
INDFLOC 246	Flocculation aid	Anionic emulsion flocculant
INDFLOC 27	Flocculation aid	Anionic flocculant
INDFLOC 350	Settling and dewatering aid	Cationic powder flocculant
INDFLOC 419	Krofta flotation & settling aid	Cationic powder flocculant
INDFLOC 424	Krofta flotation & settling aid	Cationic powder flocculant
INDFLOC 441	Settling aid	Anionic powder flocculant
INDFLOC 442	Settling aid	Anionic powder flocculant
INDFLOC 443	Settling aid	Anionic powder flocculant
INDFLOC 445	Settling aid	Non-ionic powder flocculant
INDFLOC 465	Dewatering aid	Cationic powder flocculant
INDFLOC 905	Settling aid	Low anionic powder flocculant
INDFLOC 910	Settling aid	Anionic powder flocculant

Clarification and Colour Removal Agents

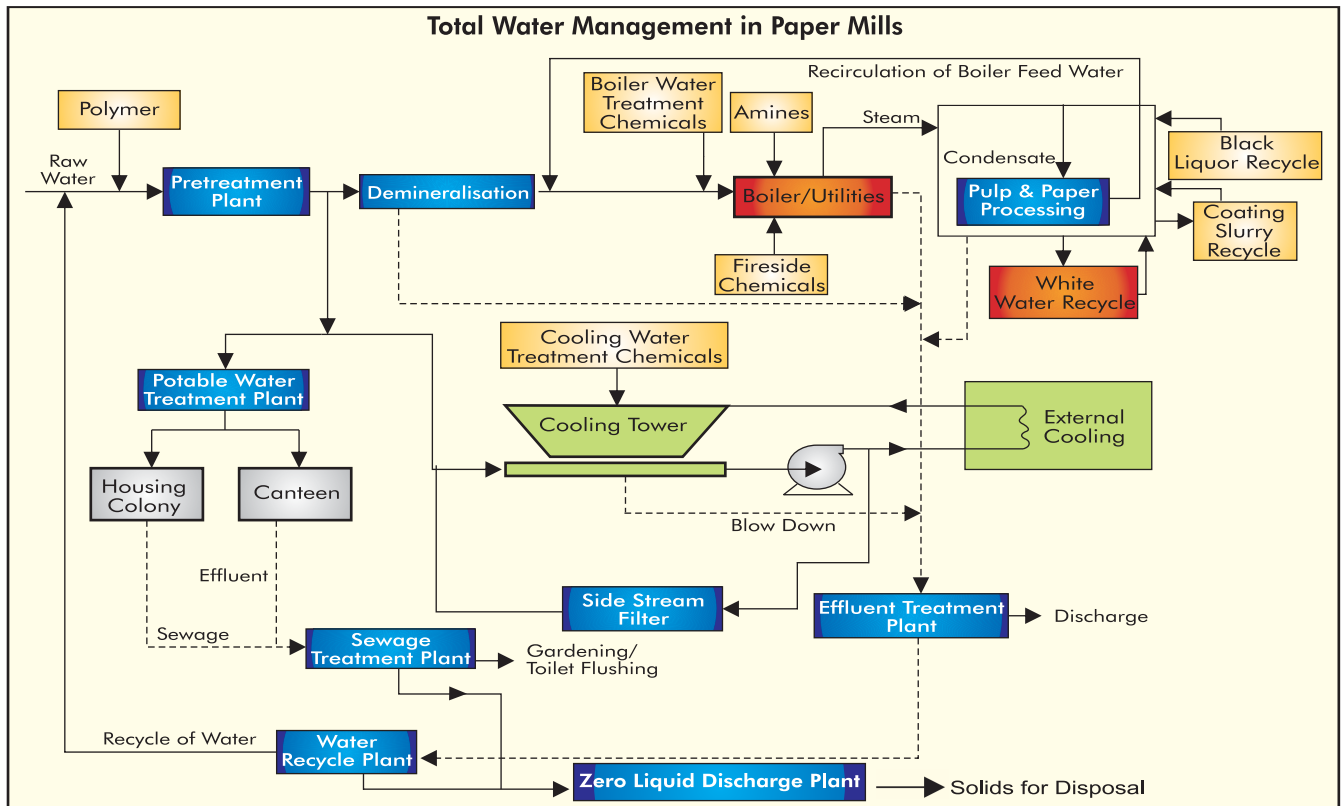
Product	Application	Chemical Composition
INDFLOC 856M	Colour removal aid for waste water	Cationic liquid polymer

*Effluent Treatment Plant



Total Water & Environment Management

Ion Exchange pioneered water treatment in India and is today Asia's largest water and environment solutions provider with a strong global presence. Our close association with the paper industry, technological expertise, R&D capabilities coupled with thorough understanding of customer processes, have enabled us to provide 360° solutions across the entire water circuit on supply, quantity, quality, cost, conservation, discharge and environmental fronts.

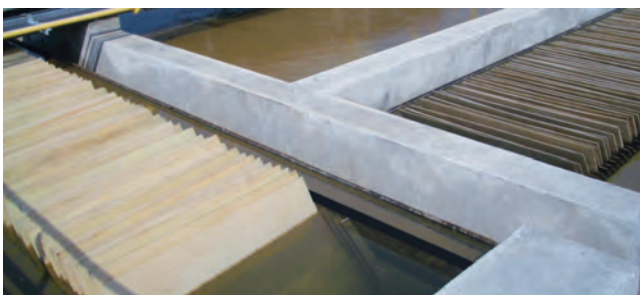


Pretreatment

At the pretreatment stage, our INDION Lamella Clarifiers & INDION Ultra High Rate Clarifiers are the first choice for reducing high turbidity and suspended solids in the water source. These space saving, efficient systems reduce the high suspended solids load to acceptable levels as feed to make-up water treatment systems.

INDION® Ultra High Rate Clarifier

- Combines technology of solids contact clarifier and plate type clarifier



Ultra high rate clarifier

- Reaction, flocculation, separation, sludge removal and clarification occur in a single treatment basin
- Smallest footprint among comparable clarifiers

INDION® Ultra Filtration

- Removal of virtually all particulate matter, suspended solids, colloids and organics
- Pretreatment for reverse osmosis plant for reduction in Silt Density Index (SDI)



Boiler Feed Water Treatment

Demineralisation

Choice of processes using ion exchange columns and membrane processes.

Advanced Technologies in Demineralisation Plants

The layered bed anion unit is a single vessel system with layers of two resins, weak base anion on top of strong base anion with downflow service. The layered bed system provides high chemical efficiency of a two-bed weak base anion and strong base anion system in a single vessel, saving considerable initial as well as recurring cost.

Advantages

- Single vessel
- Excellent treated water quality with respect to silica
- Highest chemical efficiency
- Easy to retrofit in existing systems
- Lowest cost of production of demineralised water



Demineralisation

INDION® Reverse Osmosis

Modular systems are designed to treat brackish water and make it suitable for ion exchange demineralisation polishing which enable paper mills to substantially reduce their operational costs.



Reverse osmosis plant

INDION® Ion Exchange Resins

Ion Exchange's INDION brand of resins is a market leader with a strong global presence. INDION resins are manufactured as per international standards of quality.

- Complete range of gel, isoporous & macroporous cation and anion exchange resins for water treatment as well as speciality applications in paper mills
- ISO 9001 & 14001 certified fully automated manufacturing facility at Ankleshwar, Gujarat

INDION® Boiler Water Treatment Chemicals

Specially developed for paper plant boilers, these boiler water treatment chemicals with multipurpose formulations containing hardness treatment chemicals, instant oxygen scavenger, corrosion control agents, polymeric sludge conditioners and sequestrants, to provide trouble-free operation and clean boilers.

Benefits

- Economical and easy to handle
- Prevention and removal of deposits
- Protection of system from corrosion

INDION® Cooling Water Treatment Chemicals

Cooling towers should run at maximum efficiency with low operating costs. Ion Exchange is a specialist in providing state-of-the-art cooling water treatment chemicals.

Benefits

- Prevention of cooling water related problems such as corrosion, scale fouling and microbial growth in cooling water systems
- Our cooling water programmes ensure consistency in heat transfer at the metal surface

Waste Water Treatment, Recycling and Zero Liquid Discharge

Process effluent recovery systems for black condensate, coating slurry and white water using a combination of innovative technologies including membrane bio-reactor, continuous sand filter, ultra high rate clarifier & ultra filtration.

Our recycle & zero liquid discharge systems integrate physico-chemical, biological, including high rate anaerobic reactors, and membrane separation processes for optimum water recovery. These are integrated with our state-of-the art zero liquid discharge systems to ensure total compliance.

INDION High Rate Anaerobic Reactors for waste treatment and for waste to energy can be built to occupy less floor area and offer excellent reduction efficiencies as compared to common reactors.



Multi-effect Evaporator

Services

Our complete service support system which includes paper care and water/waste management, helps maximise overall production and performance levels by ensuring continuous, optimum performance of your paper plants.

Our services include

- Total paper care management consultancy
- Total water management consultancy
- R&D, feasibility & pilot plant studies
- O&M contracts
- Water audits
- Membrane cleaning service contracts & emergency services
- Upgradation & automation



O&M for DM

**24/7
service**

Through O&M contracts we undertake total responsibility for operation and maintenance, and supply of required water quality and quantity on a continuous basis. We carry out technical audits, study operation & design parameters and provide solutions for improving costs and treated water quality.

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 & **INDFLOC** are the registered trademarks of Ion Exchange (India) Limited.



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Manufacturing Units

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Overseas - Hamriyah | Kingdom of Bahrain | Indonesia | Bangladesh

All India Service and Dealer Network

www.ionindia.com

