

## INDION<sup>®</sup> IPC Membrane Bio-reactor

### Innovative MBR Process

#### Improved Waste Water Treatment at Lower Cost

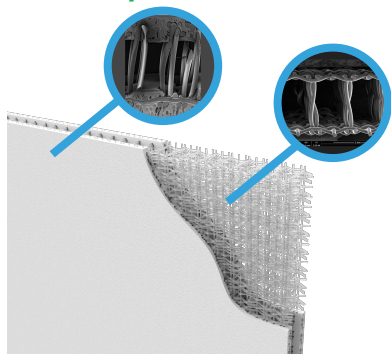
Ion Exchange has pioneered the concept of membrane bio-reactor in various configurations and operating mode for industrial and municipal applications. We have customised INDION MBR technology for requirement of industries, municipalities and household capacities even up to 5 m<sup>3</sup>/day.

INDION IPC<sup>®</sup> MBR is an innovation in MBR technology that combines the advantages of flat sheet and hollow fiber membrane systems while eliminating disadvantages of classically flat sheet MBR. It uses the first fully back-washable membrane with a P < 2 bar.

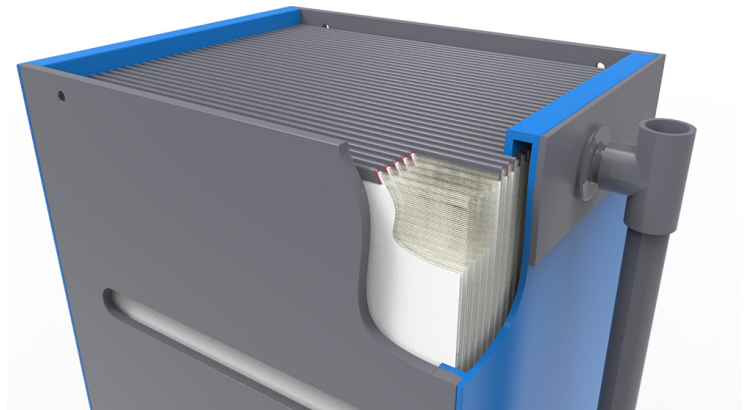
The patented IPC<sup>®</sup> flat sheet PVDF membranes allow operating waste water plants at an extraordinarily higher flux yield thereby, lowering footprint and energy demand combined with extremely good chemical resistance and life of membranes. The treated effluent meets all the discharge standards and can be reused without use of chemicals.

In this biological process the IPC<sup>®</sup> membranes are submerged, which aid in removal of suspended matter from activated sludge; thereby consistently producing treated water with highest possible contaminant reduction.

### Membrane Specifications



- UF - PVDF membranes
- 3D spacer fabric for membrane support structure with a thickness of only 3 mm
- Double Coated
- Membranes well anchored on textile fabric



### Features

- Extremely compact, requires significantly lower area compared to conventional MBR
- Modular design, in varying capacities

### Advantages

- **Improved fouling control:** Efficient physical cleaning is achieved by applying a vigorous backwash at frequent intervals; the flat sheet design allows for a well-defined flow pattern and is less prone to braiding and clogging compared to hollow fibre modules
- **High flux yield:** Due to better fouling control, 100% flux improvement can be obtained compared to commercially available flat sheet modules
- **Low footprint:** 50% higher packaging density compared with other flat sheet membranes
- **Robust design:** PVDF membranes well anchored on the support with a burst pressure of minimum 4 bar
- **Aeration demand:** The triple deck module configuration allows for up to 50% lower aeration demand
- **Cost:** Competitive pricing due to the integrated concept using one single support layer which is simultaneously coated on both sides with a membrane layer in one single step

## Module Specifications

	U10-001	U30-002	U90-002
Membrane surface (ca.) m <sup>2</sup>	10	30	90
Dimensions			
Width (ca.) + 2.5 mm	185	385	736
Height (ca.) + 0.0 mm	1090	1058	1070
Depth without filtration pipe (ca.) + 2.5 mm	316	466	716
Dry weight (ca.) kg	36	66	140
Filtrate pipe DN	16	25	50
Air demand per footprint (ca.) Nm <sup>3</sup> /h	4.8	16	48

## Operational Data

Operation parameters	
Flux rate (depending on activated sludge)	15 – 50 l/h.m <sup>2</sup>
MLSS	8 - 15 g/l
Operating pressure	20 - 250 mbar
Back wash pressure	< 2 bar
Temperature range	5 - 50°C
Cleaning	
Cleaning agents	Bases, oxidants, tensides, acids
Cleaning period	Typically 2-4 times a year
pH cleaning	2 - 11 (max. 30°C)

Aeration	
Tube diffusers	Medium-sized bubbles
Aerator channel height without legs	440 mm
Aerator channel with legs	740 mm
Pressure loss of diffusers	80 mbar
Module data	
Design	Plate-and-frame
Grouting	Waste water resistant plastics
Housing	Protective PVC plates
Operation	Continuous, cyclic, pumped, gravity flow
Number of filtrate connections	2

**Note:** Specifications are indicative and subject to changes

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.

**IPC<sup>®</sup> technology is the result of the decade of R&TD @ VITO NV. Commercial exploitation with BFM.**



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