

PRODUCT DATA SHEET

Membrane Bioreactor (MBR) Sewage Treatment Plant

water | wastewater | sewage



OVERVIEW

MAK Water's Membrane Bioreactor (MBR) waste water treatment plants are designed to treat domestic strength sewage, to achieve high quality (Class A+) treated effluent suitable for reuse in non-potable (risk category high) applications.

The standard treatment process involves influent screening, biological degradation (aerobic/anaerobic treatment), Ultrafiltration (UF), with automated chemical cleaning system, and effluent sterilization (chlorination). Additional treatment steps for nutrient removal (T-N & T-P), secondary effluent sterilization (UV), and sludge de-watering systems may be added as required to suit influent quality and/or treated effluent quality requirements. The MAK MBR plants are containerised systems for easy deployment to remote locations.



ADDITIONAL FLOW RATES AND CUSTOMISED SOLUTIONS ARE AVAILABLE. JUST ASK US.

STANDARD SPECIFICATIONS

Parameter	Units	MBR-50	MBR-100	MBR-150	MBR-200	MBR-300	MBR-450	MBR-600
Treatment Capacity	m ³ /day	50	100	150	200	300	450	600
Sludge Production (WAS)	m ³ /day	1.5	3	4.5	6	7.5	9	10.5
WAS MLSS	mg/L	8,000~10,000						
Dewatered Sludge (optional)	% solids	15~20%						
Ambient Design Temperature	°C	5~45 (-15~50 for insulated system)						
Power Supply	-	AC 380~450 V, 3 Phase, 50/60 Hz						
Power Consumption	kW	15	30	40	55	80	120	160
No. Containers	-	1 x 20'	1 x 40'	2 x 40'	2 x 40'	3 x 40'	4 x 40'	5 x 40'

Characteristics	Units	Influent	Effluent
Temperature	°C	25~30	-
pH	pH units	6.5~8.5	6.5~8.5
BOD	mg/L	150~500	<10
TSS	mg/L	150~400	<10
T-N	mg/L	<50	<40 (lower T-N available on request)
T-P	mg/L	<15	<10 (lower T-P available on request)
TDS	mg/L	<1,000	-
Turbidity	NTU	-	<2
E.Coli	cfu/100 mL	-	<1
Free Chlorine	mg/L	-	0.2~2
Viruses	% removal	-	99.999

STANDARD INCLUSIONS + OPTIONS

✓ = Standard Supply, o = Optional Supply, - = Not Available

Equipment		MBR-50	MBR-100	MBR-150	MBR-200	MBR-300	MBR-450	MBR-600
MBR Feed Pump		✓	✓	✓	✓	✓	✓	✓
Inlet screen		✓	✓	✓	✓	✓	✓	✓
Anoxic Tank with Mixer		✓	✓	✓	✓	✓	✓	✓
Aerobic Tank with Blower & Diffusers		✓	✓	✓	✓	✓	✓	✓
RAS/WAS Pump		✓	✓	✓	✓	✓	✓	✓
UF Membranes with Feed & Permeate Pumps		✓	✓	✓	✓	✓	✓	✓
UF Backwash & Chemical Cleaning System		✓	✓	✓	✓	✓	✓	✓
Effluent Sterilisation	Flow Paced Hypo Dosing	✓	✓	✓	✓	✓	✓	✓
	Hypo Dosing with Tank Recirculation & Residual Trim	o	o	o	o	o	o	o
	UV Sterilizer	o	o	o	o	o	o	o
PLC Control System with HMI		✓	✓	✓	✓	✓	✓	✓
Containerised system, c/w A/C & Lights		✓	✓	✓	✓	✓	✓	✓
UF Container Insulation (walls & ceiling)		o	o	o	o	o	o	o
UF Container non-slip floor coverings		o	o	o	o	o	o	o
UF Container Side Access Door		o	o	✓	✓	✓	✓	✓
Influent Dosing (enhanced T-N / T-P removal)	Sodium Aluminate	✓	✓	✓	✓	✓	✓	✓
	Caustic	o	o	o	o	o	o	o
	Sucrose	o	o	o	o	o	o	o
Sludge Dewatering System (15~20% solids)		o	o	o	o	o	o	o
Premium Instrumentation Package		o	o	✓	✓	✓	✓	✓

Instrumentation	Standard Package	Premium Package
Level Sensors	✓	✓
Pressure Gauges	✓	✓
Pressure Transmitters (4-20 mA)	✓	✓
Magnetic Flow Transmitters (4-20 mA)	✓	✓
Anoxic Tank ORP Analyser	-	✓
Aerobic Tank Dissolved Oxygen Analyser	-	✓
Effluent Chlorine Analyser	-	✓
Effluent Turbidity Analyser	-	✓
Effluent pH Analyser	-	✓
Remote Monitoring & Control Capabilities	-	✓

MODEL SELECTION

- 0050 50 m³/day
- 0100 100 m³/day
- 0150 150 m³/day
- 0200 200 m³/day
- 0300 300 m³/day
- 0450 450 m³/day
- 0600 600 m³/day

- X Containerised Plant, standard supply
- F Containerised Plant with floor coatings
- P Containerised Plant with floor coatings & insulation
- X Effluent Sterilization - Flow paced hypo dosing, standard supply
- R Effluent Sterilization - Hypo dosing with tank recirculation & residual trim
- U Effluent Sterilization - UV
- D Effluent Sterilization - UV + hypo dosing with tank recirculation & residual trim
- X Influent Dosing Systems - Standard supply
- C Influent Dosing Systems - Custom (specify caustic/sodium aluminate/sucrose)
- X Standard instrument package
- P Premium instrumentation package, c/w remote monitoring
- C Custom supply
- X Sludge dewatering - Without
- S Sludge dewatering - With

MBR - - - - - -

NEED A QUOTE?

COMPLETE THIS TABLE AND EMAIL TO...

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Disclaimer: MAK Water is continuously updating and improving its products and services, so please contact us for more detailed information or to confirm specifications. MAK Water takes no responsibility for any errors resulting from the use of information contained within this document.

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