

PRODUCT DATA SHEET

Activated Sludge Bioreactor Plus (ASBR+)

water | wastewater | sewage

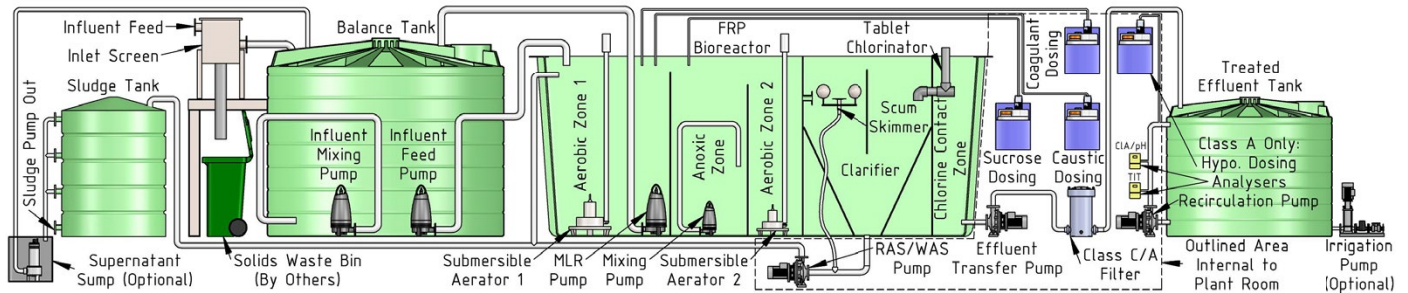


OVERVIEW

MAK Water's Activated Sludge Bioreactor Plus (ASBR+) type packaged sewage treatment plants are designed to treat domestic strength sewage, to achieve "Class C" treated effluent, *plus enhanced nutrient removal*, suitable for reuse in "risk category low" applications or for discharge to environment. With the optional "Class A" upgrade, treated effluent suitable for reuse in "risk category medium" applications is achieved.

The standard treatment process includes influent screening, balance tank mixing, anoxic & aerobic treatment for *nitrification and denitrification*, clarification, effluent sterilization (chlorine tablets) and bag filtration (100 micron). The optional "Class A" upgrade includes an auto-backwashing filter (25 micron), secondary chlorination via tank recirculation and residual trim hypochlorite dosing, and analyzers for online monitoring of treated effluent turbidity, free chlorine and pH.

MAK Water's ASBR+ Bioreactors are corrosion resistant and are self-contained, modular systems for easy deployment to remote locations.



STANDARD SPECIFICATIONS

Parameter		Units	ASBR+009	ASBR+016	ASBR+022	ASBR+035	ASBR+045
Treatment capacity (min/max)		m³/day	3 / 9	5 / 16	7 / 22	12 / 35	15 / 45
*1Balance tank volume (min)		m³	15	22	30	50	65
*1Treated effluent tank volume (min)		m³	6	11	15	25	32
Sludge tank volume (min for monthly sludge removal)		m³	2.0	3.2	4.5	7.0	9.0
Sludge waste volume (min/max)		m³/day	0.1 / 0.3	0.2 / 0.6	0.3 / 0.8	0.4 / 1.3	0.6 / 1.7
*2Irrigation pump duty		m³/hr @ 350 kPa	1.1	2.0	2.8	4.4	5.6
Ambient temperature (min/max)		°C	1 ~ 35 (1 ~ 43 with optional plant room air-conditioner)				
Power supply		-	AC 380~450 V, 3 Phase, 50/60 Hz				
Power consumption	Class C (max)	kW	6.0	7.0	7.5	9.2	10.5
	Class A (max)	kW	6.5	7.7	9.0	11.2	13.0
	*2Irrigation pump motor size	kW	0.37	0.55	0.75	1.1	1.5
	*2Air conditioner	kW	1.5	1.5	1.5	1.5	1.5
Footprint	FRP bioreactor & access platform	m	6 x 3.2	7.5 x 3.2	9 x 3.2	12 x 3.2	12 x 3.2
	Containerised plant room	m	N/A (plant room integral to FRP bioreactor)				3 x 2.4

Characteristics	Units	Influent	*3Class C effluent	*3Class A effluent
Temperature	°C	15~35	-	
pH	pH units	6.5~8.5	6.5~8.5	
Biological oxygen demand (BOD)	mg/L	*4≤350	<20	
Suspended solids (TSS)	mg/L	*4≤350	<30	
Oil & grease	mg/L	<10	-	
Total nitrogen (T-N)	mg/L	<80	<10 (or 70 mg/L reduction from influent value)	
Total phosphorus (T-P)	mg/L	<16	1~6 (variable according to coagulant dose rate)	
Total dissolved solids (TDS)	mg/L	<2,000	-	
Turbidity	NTU	-	N/A	<5 (95%ile)
E.Coli	cfu/100 mL	-	<1,000	<10
Free chlorine	mg/L	-	0.2~2.0	

*1 Sold Separately, *2 Optional Equipment, *3 Based on QLD Guidelines, *4 Referenced from Metcalf & Eddy (5th edition, 2014), Typical composition of untreated domestic wastewater; higher/lower design values available on request.

STANDARD INCLUSIONS + OPTIONS

✓ = Standard Supply, o = Optional Supply

Equipment		ASBR+009	ASBR+016	ASBR+022	ASBR+035	ASBR+045
Automatic inlet screen (2 mm)		✓	✓	✓	✓	✓
Influent mixing pump		✓	✓	✓	✓	✓
Influent feed pump		✓	✓	✓	✓	✓
FRP bioreactor with access platform & ladder	Aerobic zones with submersible aerators & MLR pump	✓	✓	✓	✓	✓
	Anoxic zone with submersible mixing pump	✓	✓	✓	✓	✓
	Clarifier with scum removal system	✓	✓	✓	✓	✓
	Chlorine contact zone with tablet chlorinator	✓	✓	✓	✓	✓
	Bioreactor roofing (COLORBOND® steel sheeting)	o	o	o	o	o
Plant room with overhead lighting and GPO for maintenance	Chemical dosing – coagulant, sucrose & caustic	✓	✓	✓	✓	✓
	RAS/WAS pump	✓	✓	✓	✓	✓
	Effluent transfer/filter feed pump	✓	✓	✓	✓	✓
	Class C	Bag filter (100 µm)	✓	✓	✓	✓
	Class A	Auto-backwashing filter (25 µm)	o	o	o	o
		Treated effluent tank recirculation pump	o	o	o	o
		Residual trim hypochlorite dosing	o	o	o	o
	PLC control system with HMI	✓	✓	✓	✓	✓
	Plant room air conditioner	o	o	o	o	o
Sludge tank with supernatant sampling points and discharge valves		✓	✓	✓	✓	✓
Supernatant sump with submersible pump and level control		o	o	o	o	o
Irrigation pump with level control and mechanical flow totaliser		o	o	o	o	o
Instrumentation	Standard package	✓	✓	✓	✓	✓
	Premium package with ClearAccess™ remote monitoring	o	o	o	o	o

Instrumentation & Controls		Standard Package	Premium Package
Balance & chlorine contact tank float level switches		✓	–
Chemical dosing & sludge tank float level switches		✓	✓
Pressure switches		✓	✓
Pressure gauges		✓	✓
Magnetic flow transmitters (influent feed pump and MLR pump)		✓	✓
Aerobic tank dissolved oxygen analyser		✓	✓
Aerobic tank pH analyser		✓	✓
Class A only	Treated effluent chlorine & pH analyser	✓	✓
	Treated effluent turbidity analyser	✓	✓
Variable speed drives	Influent feed pump	✓	✓
	Submersible aerator 1	✓	✓
	MLR pump	✓	✓
Balance & chlorine contact tank level transmitters		–	✓
ClearAccess™ remote monitoring & control capabilities		–	✓

MODEL SELECTION

009	Capacity – 9 m³/day
016	Capacity – 16 m³/day
022	Capacity – 22 m³/day
035	Capacity – 35 m³/day
045	Capacity – 45 m³/day
	C Treatment to Class C
	A Treatment to Class A
	X Roofed bioreactor – without
	R Roofed bioreactor – included
	X Plant room air-conditioner – without
	A Plant room air-conditioner – included
	X Supernatant sump – without
	S Supernatant sump – included
	X Irrigation pump – without
	I Irrigation pump – included
	X Standard instrument package
	P Premium instrumentation package
	X Specifications – standard
	C Specifications – custom
ASBR+	---

NEED A QUOTE?

COMPLETE THIS TABLE
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