

# PRODUCT DATA SHEET



## Activated Sludge Bioreactor (ASBR)

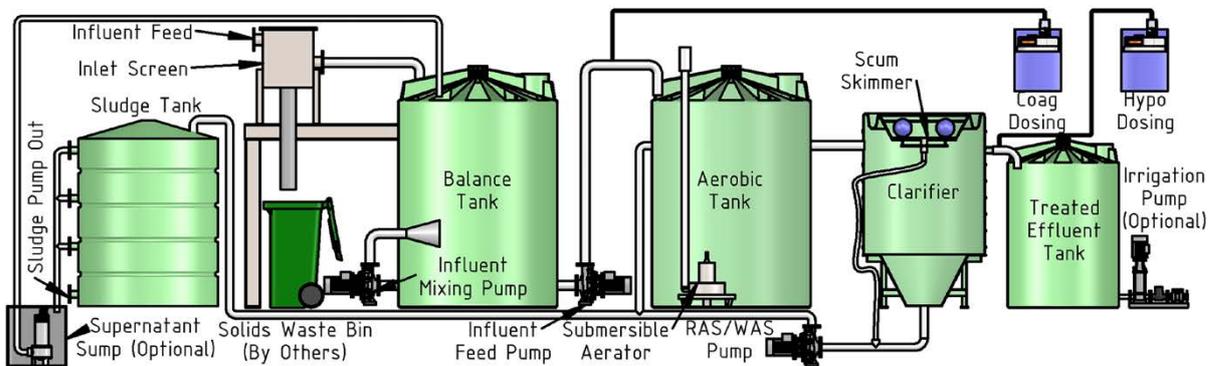
water | wastewater | sewage

### OVERVIEW

MAK Water's Activated Sludge Bioreactor (ASBR) type packaged sewage treatment plants are designed to treat domestic strength sewage, to achieve "Class C" treated effluent, 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, aerobic treatment, clarification and effluent disinfection (chlorine tablets). The optional "Class A" upgrade includes an auto-backwashing media filter, disinfection via tank recirculation and hypochlorite dosing, and analysers for online monitoring of treated effluent turbidity, free chlorine and pH.

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



### STANDARD SPECIFICATIONS

Parameter	Units	ASBR-025	ASBR-035	ASBR-050	ASBR-070	ASBR-100	
Treatment capacity	m <sup>3</sup> /day	25	35	50	70	100	
*1Balance tank volume (recommended)	m <sup>3</sup>	25	35	50	70	100	
*1Treated effluent tank volume (*2minimum)	m <sup>3</sup>	4.0	5.5	8.0	11	16	
Sludge tank volume	m <sup>3</sup>	5.3	5.3	10.5	10.5	23	
Thickened sludge waste volume	m <sup>3</sup> /day	0.3	0.4	0.5	0.8	1.2	
*3Irrigation pump duty	m <sup>3</sup> /hr @ 350 kPa	2.1	2.9	4.2	5.8	8.3	
Ambient temperature (min/max)	°C	1 ~ 35 (1 ~ 43 with optional plant room air-conditioner)					
Power supply	-	AC 415 V, 3 Phase, 50 Hz					
Power consumption	Class C (max)	kW	9	12	15	20	28
	Class A (max)	kW	16	19	22	27	35
	*3Irrigation pump motor size	kW	0.55	0.75	1.1	1.5	2.2
	*3Air 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	10 x 3.8
	Sludge tank	Øm	1.8	1.8	2.45	2.45	3.83

Characteristics	Units	Influent	**Class C Effluent	**Class A Effluent
Temperature	°C	15~35	-	-
pH	pH units	6.5~8.5	6.5~8.5	6.5~8.5
Biological oxygen demand (BOD)	mg/L	*5≤350	<20	<20
Suspended solids (TSS)	mg/L	*5≤350	<30	<30
Oil & grease	mg/L	<10	-	-
Total nitrogen (T-N)	mg/L	≥20	N/A (no reduction)	
Total phosphorus (T-P)	mg/L	<16	4~12 (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 For 15 min.mg/L contact time, \*3 Optional Equipment, \*\* Based on QLD Guidelines, \*\* 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-025	ASBR-035	ASBR-050	ASBR-070	ASBR-100	
Automatic inlet screen (2 mm)		✓	✓	✓	✓	✓	
Influent mixing pump		✓	✓	✓	✓	✓	
Influent feed pump		✓	✓	✓	✓	✓	
FRP bioreactor with aluminium access platform & ladder	Aerobic zone with submersible aerator	✓	✓	✓	✓	✓	
	Clarifier with scum removal system	✓	✓	✓	✓	✓	
	Buffer zone/tank with tablet chlorinator	✓	✓	✓	✓	✓	
	Bioreactor roofing (COLORBOND® steel sheeting)	o	o	o	o	o	
Plant room with over-head lighting and GPO for maintenance	Chemical dosing – coagulant	✓	✓	✓	✓	✓	
	RAS/WAS pump	✓	✓	✓	✓	✓	
	Effluent transfer/filter feed pump	✓	✓	✓	✓	✓	
	Class A only	Auto-backwashing media filter	o	o	o	o	o
		Treated effluent tank recirculation pump	o	o	o	o	o
		Hypochlorite dosing	o	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
Level switches	Balance tank	✓	-
	Sludge tank	✓	✓
	Chemical dosing tank(s)	✓	✓
	Supernatant sump (optional)	✓	✓
Level transmitters	Balance tank	-	✓
	Buffer tank	✓	✓
	Treated effluent tank	✓	✓
Flow switches	Effluent transfer pump (Class C)	-	✓
	Treated effluent recirculation pump (Class A)	-	✓
	Irrigation pump (optional)	-	✓
Pressure switches	Balance tank mixing pump	✓	✓
Pressure indicators	Balance tank mixing pump	✓	✓
	Influent feed pump	✓	✓
	RAS/WAS pump	✓	✓
	Effluent transfer pump (Class C)	✓	✓
	Media filter feed pump (Class A)	✓	-
	Media filter discharge (Class A)	✓	-
	Irrigation pump (optional)	✓	✓
Treated effluent recirculation pump (Class A)	✓	✓	
Pressure transmitter	Media filter feed pump (Class A)	-	✓
	Media filter discharge (Class A)	-	✓
Mechanical flow totaliser	Irrigation pump (optional)	✓	✓
Free chlorine and pH analyser (Class A)		✓	✓
Turbidity analyser (Class A)		✓	✓
ClearAccess™ remote monitoring & control capabilities		-	✓

## MODEL SELECTION

- 025** Capacity – 25 m<sup>3</sup>/day
- 035** Capacity – 35 m<sup>3</sup>/day
- 050** Capacity – 50 m<sup>3</sup>/day
- 070** Capacity – 70 m<sup>3</sup>/day
- 100** Capacity – 100 m<sup>3</sup>/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 instrumentation package
- P** Premium instrumentation package
- X** Specifications – standard
- C** Specifications – custom

ASBR

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NEED A QUOTE?

COMPLETE THIS TABLE AND EMAIL TO...

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