

# PRODUCT DATA SHEET



## Activated Sludge Bioreactor Plus (ASBR+)

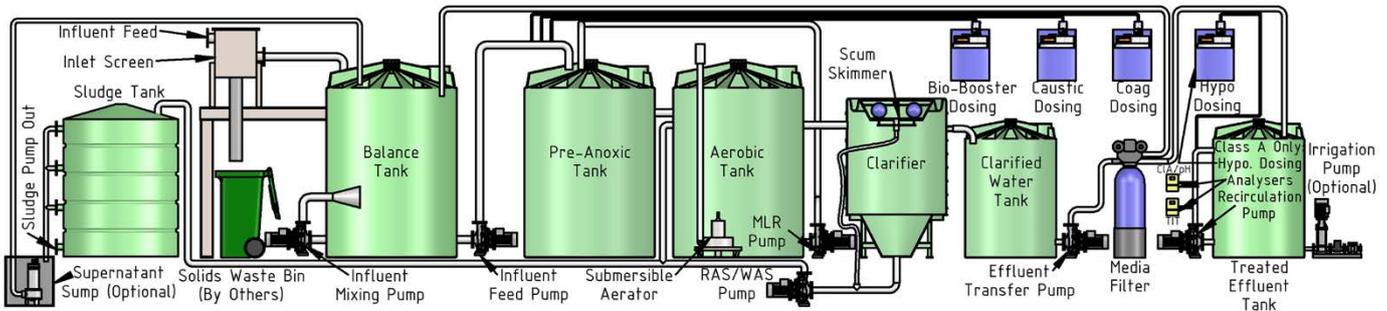
water | wastewater | sewage

### 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+ sewage treatment plants are corrosion resistant, 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)	m <sup>3</sup> /day	3 / 9	5 / 16	7 / 22	12 / 35	15 / 45	
*1Balance tank volume (min)	m <sup>3</sup>	15	22	30	50	65	
*1Treated effluent tank volume (min)	m <sup>3</sup>	6	11	15	25	32	
Sludge tank volume (min for monthly sludge removal)	m <sup>3</sup>	2.0	3.2	4.5	7.0	9.0	
Sludge waste volume (min/max)	m <sup>3</sup> /day	0.1 / 0.3	0.2 / 0.6	0.3 / 0.8	0.4 / 1.3	0.6 / 1.7	
*2Irrigation pump duty	m <sup>3</sup> /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.

