DATASHEET

PURON PLUS MBR Package Systems

Pre-engineered Standard Systems for Wastewater Treatment

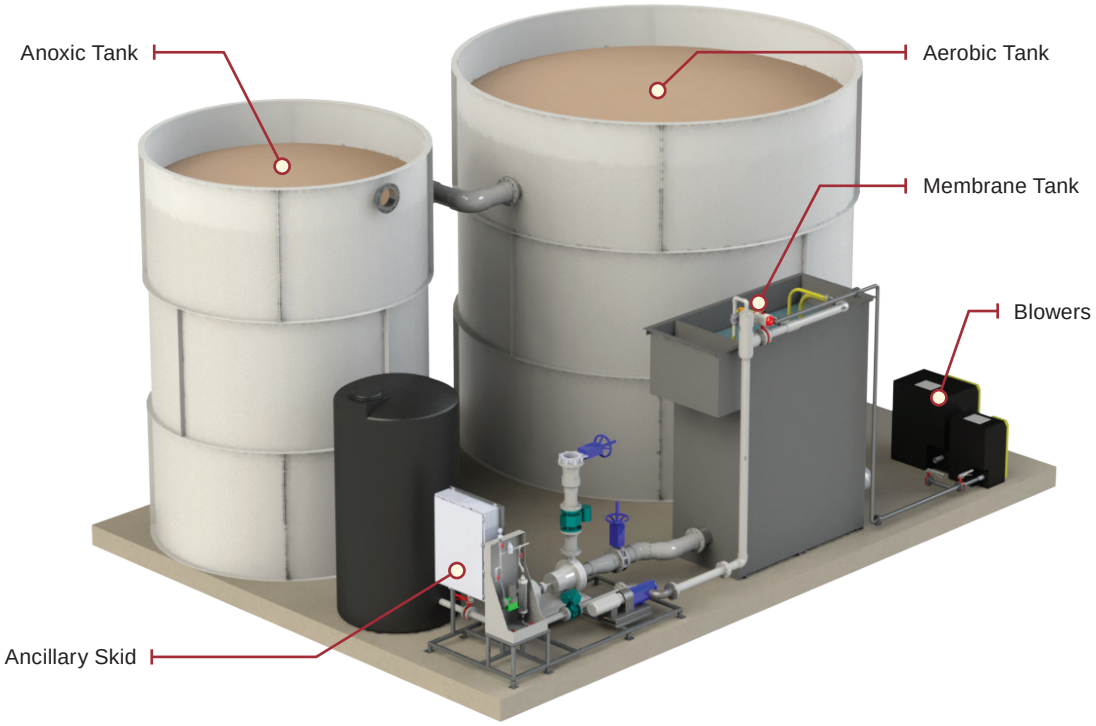
PURON® PLUS MBR systems are pre-engineered membrane bioreactor (MBR) package plants. With capacities ranging up to 260,000 GPD, the PURON PLUS MBR system is designed for both municipal and industrial **(i.e.: food, dairy, beverage, leachate, produced water, etc.)** wastewater applications with feed BOD concentrations up to 2,000 mg/L.

Featuring KOVALUS SEPARATION SOLUTIONS™ submerged PULSION® MBR modules, these skid-mounted systems offer customers a complete and cost-effective design. The virtually unbreakable high performance PURON membrane provides consistent high quality effluent with total suspended solids <5 mg/L. Coupled with a comprehensive biological system, the PURON PLUS MBR system can reduce BOD and Nitrogen concentrations down to 5 and 10 mg/L respectively.

BENEFITS

- Small footprint
- Flexible layout
- Turnkey solution
- Fast delivery and installation
- Single source supply
- Optimized design for application
- Simple operation
- Minimal civil works required

EP-100 Package System Shown



		EP-Series Filtration System	P-Series Filtration System	EP-Series Complete System	P-Series Complete System
Pre-Treatment	Fine Screening	O	O	O	X
	Chemical Dosing			O	O
	Feed Equipment			O	O
Bioreactor	Bioreactor Tanks			X	X
	Anoxic Zone and Mixing Equipment			X	X
	Process Blower			X	X
	Fine Bubble Diffuser Grid			X	X
	Bioreactor Valves			X	X
	Bioreactor Instrumentation			X	X
Filtration System	Membranes	X	X	X	X
	Membrane Tank	X	X	X	X
	Membrane Blowers	X	X	X	X
	Train Redundancy		X		X
	Membrane Feed System	X	X	X	X
	Feed Pump VFD		X		X
	Permeate Extraction System	X	X	X	X
	Filtration System Valves	X	X	X	X
	Filtration System Instrumentation	X	X	X	X
	CIP System	O	X	O	X
	Upgraded PLC/HMI	O	X	O	X
	Effluent Turbidity	O	O	O	O
Ancillary and Post-Treatment	Duty-Standby Blower	O	X	O	X
	Drain Pump	O	O	O	O
	Shelf Spares	O	O	O	O
	Disinfection System	O	O	O	O

X: Included, O: Optional

Sizes

Model	AADF System Capacity				Membrane		
	Industrial		Municipal				
	1,000 Gal / Day	m^3 / Day	1,000 Gal / Day	m^3 / Day	Area (m^2)	Type	# of Trains
EP-50	30	114	65	246	348	LE-8 (1)	1
EP-100	60	227	130	491	696	LE-8 (2)	1
EP-200	120	454	260	983	1,392	LE-16 (2)	1
P-100	60	227	130	491	696	LE-8 (2)	2
P-200	120	454	260	983	1,392	LE-16 (2)	2

* Typical municipal daily peaking factor for municipal systems is 2X.** Final system sizing is application dependent and based on various design criteria, including, but not limited to Influent temperature and BOD concentration.

Installation

System			Piping Connections		
	Footprint	Electrical Power (460V, 60Hz)	Feed	WAS	Permeate
EP-50	20' x 29' / 20m x 9m	30 HP, 40A	6" / DN150	3" / DN80	6" / DN150
EP-100	26' x 37' / 8m x 11m	40 HP, 55A	6" / DN150	3" / DN80	6" / DN150
EP-200	32' x 37' / 10m x 11m	50 HP, 65A	8" / DN200	3" / DN80	8" / DN200
P-100	33' x 49' / 10m x 15m	75 HP, 100A	6" / DN150	3" / DN80	6" / DN150
P-200	39' x 49' / 12m x 15m	85 HP, 110A	8" / DN200	3" / DN80	8" / DN200

Systems are delivered as pre-assembled skids. Interconnecting piping will be provided to connect skids within manufacturer's scope of supply and designated layout. All skids are pre-wired with local disconnects. System assembly and wiring to be conducted by a qualified contractor. KMS to provide installation support and startup services.

OPEX

System	Estimated Energy Usage		Estimated Chemical Usage	
	$ / 1k Gal.	$ / m^3	$ / 1k Gal.	$ / m^3
EP-50	0.283	0.075	.005	.001
EP-100	0.234	0.062	.005	.001
EP-200	0.203	0.054	.005	.001
P-100	0.234	0.062	.005	.001
P-200	0.203	0.054	.005	.005

Energy costs are estimates only and will be better defined with final system design. Values are based on a complete municipal system including the bioreactor equipment. * Power based on 13 cents per kwh.

KOVALUS Separation Solutions™

Separation Technologies for a Better Future™