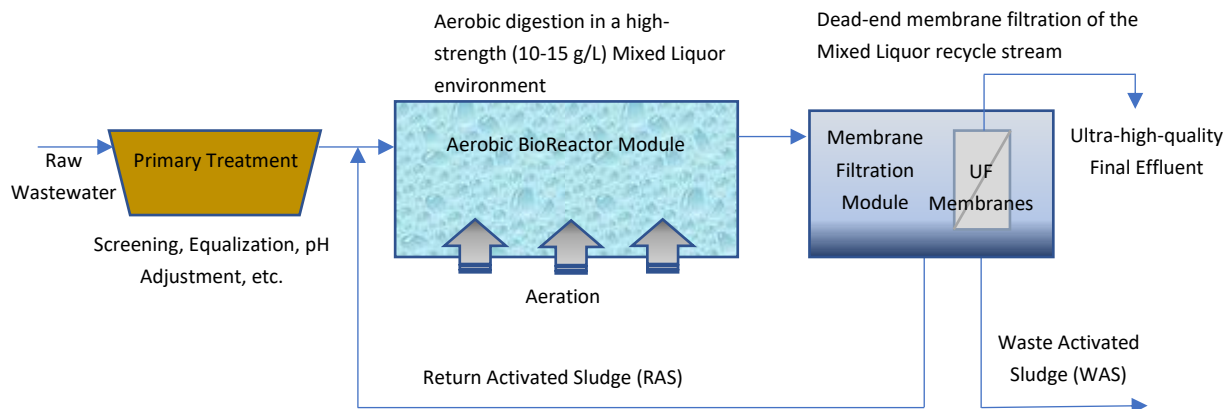


Enereau nrPUR™ Membrane BioReactor (MBR)

The nrPUR™ MBR Process Description:

Sanitary wastewater is collected in a primary settling or septic interceptor tank where non-biodegradable solids are removed and where variations in flow and concentration are moderated. The pre-treated and balanced wastewater is then transferred from the Primary Settling tank to the Aerobic BioReactor, a complete-mix reactor designed to ensure effective biological digestion of the organic materials in the aeration step of the well-proven Activated Sludge (AS) process. Wastewater is recirculated continuously between the ABR Module and the Membrane Filtration Module.



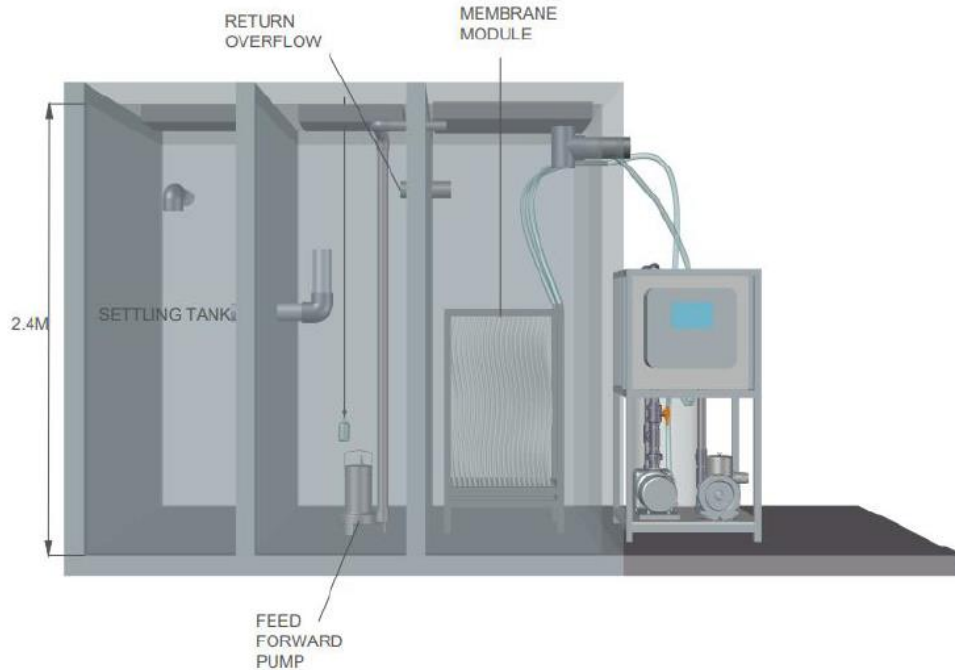
The Mixed Liquor Suspended Solids (MLSS) concentration, at 10-15 g/L, enhances the ability of the biomass to handle highly variable and higher strength wastewater influent.

The ultrafiltration (UF) membrane is an absolute barrier to any particulate matter larger than the membrane pore size, typically <0.1 µm in size. Typically, final effluent quality is suitable for many non-potable reuse applications with TSS <<5 mg/L and BOD reduced by 98% or more.

The Membrane BioReactor Process

The AS process converts the soluble organic material present in the wastewater into CO₂, H₂O and biological cell mass, while an aeration system provides the oxygen required for this process. The liquid phase of the mixed liquor (Permeate) is pulled through the membranes at a predetermined rate, or flux, established for each specific application and discharged to a clean water storage tank. The mixed liquor suspended solids (MLSS) are rejected and moved away from the membrane by air scour and hydraulic action. Surplus biomass generated by the conversion of BOD into cell mass is wasted periodically from the system, on an as-needed basis, as Waste Activated Sludge (WAS), for off-site disposal or for further processing.

For more information visit www.enereau.com or contact us at sales@enereau.com



Key features and benefits of the Enereau nrPUR™ platform:

Developed around a series of standard, modular building blocks, the nrPUR™ MBR platform offers unparalleled flexibility and reliability for sanitary wastewater treatment at average daily flows from less than 5,000 USgpd (20 m³/d) up to 100,000 USgpd (400 m³/d). Factory assembled and tested prior to shipment, with integrated automation, mechanical equipment and instrumentation, the use of proven process modules ensures that each platform goes together seamlessly on site and starts up with no complications. Leveraging the unparalleled space efficiency of the MBR technology, typically 75% less space required than conventional activated sludge processes, the nrPUR™ platform is one of the most compact systems in the industry.

The nrPUR™ MBR platform is designed to treat sanitary wastewater coming from residential, commercial and institutional applications. Based on normal sanitary wastewater characteristics, typical treatment effectiveness is:

Parameter	Effluent	Units
BOD ₅	< 5	mg/L
TSS	< 5	mg/L
TKN	< 10 ¹	mg/L
TP	< 1 ¹	mg/L



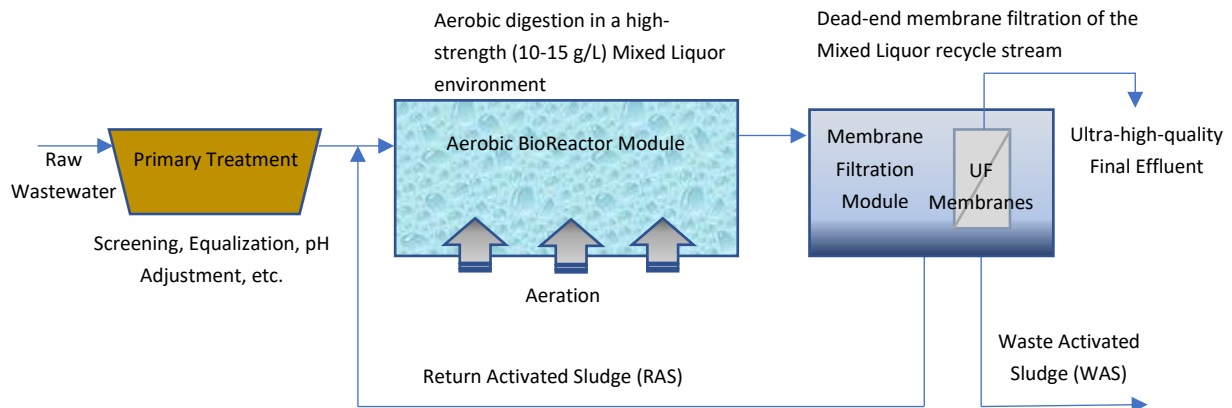
1. With required process modules

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Enereau nrPUR™ High Strength (HS) Membrane BioReactor (MBR)

The nrPUR™ HS MBR Process Description:

Process wastewater is collected in an Equalization (EQ) tank where non-biodegradable solids are removed and where variations in flow and concentration are moderated. A pH adjustment module monitors the influent wastewater and doses reagents as necessary to reach the desired range for biological treatment. The pre-treated and balanced wastewater is then transferred from EQ to the Aerobic BioReactor (ABR), a complete-mix process designed to ensure effective biological digestion of the organic materials in the aeration step of the well-proven Activated Sludge (AS) process. Wastewater is recirculated continuously between the ABR and the Membrane Filtration Module.

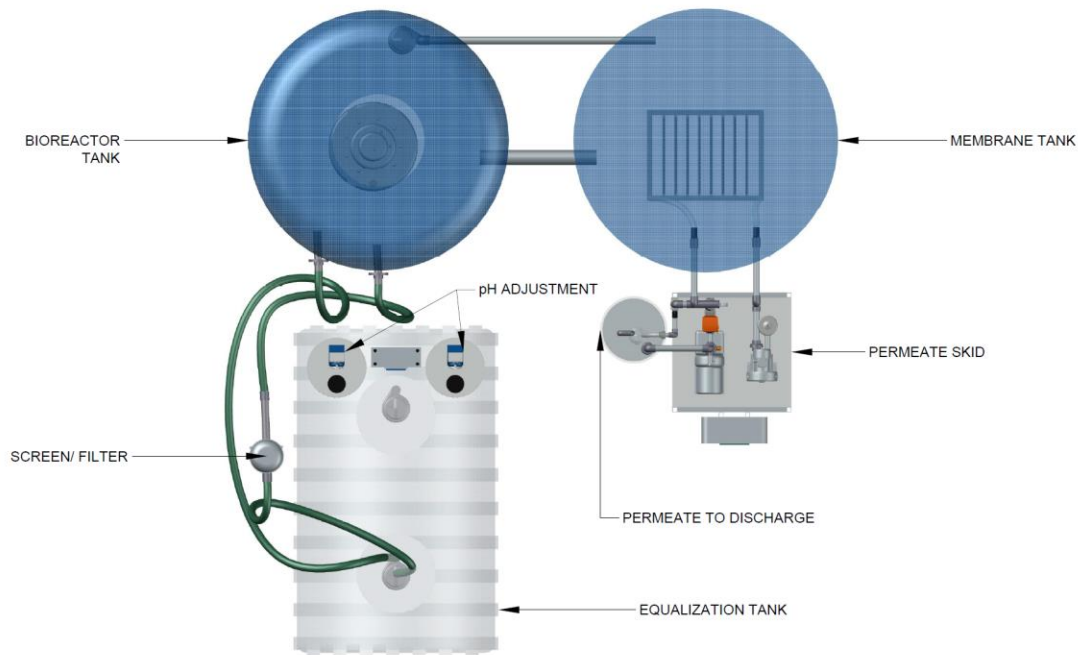


The Mixed Liquor Suspended Solids (MLSS) concentration, at 10-15 g/L, enhances the ability of the biomass to handle highly variable and higher strength wastewater influent.

The ultrafiltration (UF) membrane is an absolute barrier to any particulate matter larger than the membrane pore size, typically <0.1 µm in size. Typically, final effluent quality is suitable for many non-potable reuse applications with TSS <<5 mg/L and BOD reduced by 98% or more.

The Membrane BioReactor Process

The AS process converts the soluble organic material present in the wastewater into CO₂, H₂O and biological cell mass, while an aeration system provides the oxygen required for this process. The liquid phase of the mixed liquor (Permeate) is pulled through the membranes at a predetermined rate, or flux, established for each specific application and discharged to a clean water storage tank. The mixed liquor suspended solids (MLSS) are rejected and moved away from the membrane by air scour and hydraulic action. Surplus biomass generated by the conversion of BOD into cell mass is wasted periodically from the system, on an as-needed basis, as Waste Activated Sludge (WAS), for off-site disposal or for further processing.



Key features and benefits of the Enereau nrPUR™ platform:

Developed around a series of standard, modular building blocks, the nrPUR™ MBR platform offers unparalleled flexibility and reliability for light industrial wastewater treatment at flows from less than 1,000 USgpd (4 m³/d) up to 25,000 USgpd (100 m³/d). Factory assembled and tested prior to shipment, with integrated automation, mechanical equipment and instrumentation, the use of proven process modules ensures that each platform goes together seamlessly on site and starts up with no complications. Leveraging the unparalleled space efficiency of the MBR technology, typically 75% less space required than conventional activated sludge processes, the nrPUR™ platform is one of the most compact systems in the industry.

The nrPUR™ platform can treat both domestic and high strength (e.g. food and beverage production) wastewater. Typical treatment effectiveness is:

Parameter	Effluent	Units
BOD ₅	>98.5% Reduction	mg/L
TSS	< 5 mg/L	mg/L
TN	< 10 mg/L	mg/L



> 98.5% BOD₅ Reduction / Non-detectable TSS

For more information visit www.enereau.com or contact us at sales@enereau.com