PuraACE™

Aerated Cleaning of Effluent

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The patent pending PuraACE reactor pods are a robust and efficient mechanism to treat high strength wastewater streams from commercial facilities such as restaurants, c-stores, food processing, campgrounds, parks, or schools. The reactor pods reduce constituents to levels for further treatment by conventional methods.

PuraACE™

Reductions in BOD, COD, FOG, and ammonia are achieved in the reactor pods with low hydraulic retention times. The pods employ a hybrid submerged aerated filter (SAF) treatment process that requires significantly less air to achieve treatment when compared to other technologies. The pod incorporates a submerged perforated container of marble rock, hard limestone, or seashells for passive alkalinity control (pH buffering). Multiple pod configurations may be used to achieve reductions.

Steps of the ACE Process

1. Blower cycle time is determined by control panel timer setting and may be adjusted per influent strength.
2. Air is released from the bottom of the PuraACE reactor pod.
3. The air/effluent mixture passes through and over the plastic SAF media. The media provides surface area for aerobic microorganisms to attach and proliferate. The media shears coarse bubbles into finer bubbles, improving O_2 transfer.
4. The aggressive aeration within the reactor pod creates a "chimney" effect that provides media scouring.
5. Effluent passes through a perforated container of replenishable alkalinity control media.
6. The reactor pod contains horizontal discharge nozzles near the top of the fluid level for recirculation. This results in dilution of the incoming waste stream.

When in a serial configuration of multiple tanks, staged segregation of various microorganisms will occur along with dilution. This results in minimal sludge accumulation.

Technical Specifications

Parameter	Specification
BOD reduction	3 to 4 lbs/d
Air supply	7.1 cfm (200 lpm)
Pod diameter	16"
Pod height	56" to 72"
High-efficiency plastic SAF media	~100 ft^2 total surface area
Passive alkalinity control media	1 ft^3

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