



AQUAFIX Inc.

*Innovations in
wastewater treatment.*

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TECHNICAL UPDATE

BIOGAS1

Biogas1 increases methanogenesis in anaerobic digesters by enhancing the biochemistry that results in biogas yield. Methane forming bacteria convert volatile acids into valuable methane when the right environmental conditions, bacteria, and micronutrients are present. It's a remarkable process to say the least, but it is even more remarkable when wastewater operators understand how to facilitate methane production by this process.

Biogas1 introduces the right micronutrients to stimulate methane production. Typically, when a trace mineral is added to an anaerobic digester as a supplement, it will immediately begin to precipitate, making it much more difficult for bacteria or archaea to metabolize. Our formula is designed to maintain maximum solubility, maximizing our micronutrient's bio-availability.

There is a lot of misinformation about which micronutrients are important in anaerobic digestion. Our review of the published research gave us a great list to start testing. A combination of lab scale and field scale trials gave us our formula for Biogas1, which includes cobalt, nickel, and iron.

Methanogens produce methane from a combination of acetate, hydrogen, and methanol. In most anaerobic processes, acetoclastic bacteria break down volatile acids. When acetoclastic methanogens fail to thrive, volatile acid levels in a digester increase, leading to a decrease in digester pH or "souring".

Biogas1 is most efficient when applied to a digester with a neutral pH and is not producing methane well. If the digester is already sour (low pH), it usually makes more sense to increase the digester pH prior to Biogas1 micronutrient addition.

Biogas1 will boost methane production in most applications due to optimizing and maintaining bio-availability of trace elements. This product has proven beneficial in municipal, agricultural and food industries to fuel digesters.





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DOSE RATES

Initial Dose: 5 gallons, per 100,000 gallons tank volume

Maintenance Dose: 2.5 gallons per 50,000 gallons daily inflow, added once per week

Note: **Feed all at once**, do not gradually feed.