Bio-Organic Catalyst



Advanced biocatalytic biochemistry that transforms how the world treats waste and water.

✓ Non-Toxic ✓ Chemical-Free ✓ Proven in Commercial Use

Water & Waste Treatment • Solutions for Industry, Municipalities, Food & Agriculture

THE OPPORTUNITY

The pressures facing water & waste operators

Treatment plants everywhere face the same squeeze — rising costs, tighter limits, and mounting public scrutiny. Conventional chemistry treats the symptoms, not the biology.

Soaring energy bills

Aeration alone can be 50–60% of a plant's energy use.

Chemical dependence

Costly, hazardous dosing that only masks the problem.

Sludge disposal

Growing volumes of sludge that cost more to haul every year.

Odor & H_2S

Hydrogen sulfide and ammonia drive complaints and corrosion.

Compliance risk

Ever-tightening BOD, COD and nutrient discharge limits.

Aging systems

Legacy assets pushed beyond design capacity and load.

THE SOLUTION

Meet BOC — Bio-Organic Catalyst

BOC is a patented, plant-based biocatalyst — 100% green, not a chemical and not a bug-in-a-jug. It supercharges the microbes already working in your system, dramatically accelerating the natural breakdown of waste and nitrogen.

100% green

Plant-based and biodegradable — no hazardous chemicals.

Rapid nitrogen breakdown

Speeds ammonia → nitrite → nitrate → harmless N_2 gas.

Two-in-one action

Biocatalytic oxidation + nano-bubble oxygenation.

Works at low ppm

Tiny doses do the work — no heavy chemical logistics.

What sets BOC apart

Accelerates the nitrogen cycle

Ammonia through to N_2 gas

Non-toxic & 100% green

Safe for people & marine life

HOW IT WORKS

Catalysis, not chemistry

BOC lowers the activation energy of biological breakdown while flooding the system with oxygen — so the microbes you already have work faster and cleaner.

1

Lowers surface tension

Reduces surface tension so enzymes reach more organic matter.

2

Nano-bubble oxygen

Generates micro & nano-bubbles that supercharge oxygen transfer.

3

Activates native microbes

Boosts the enzyme activity of the microbes already in your system.

4

Accelerates breakdown

Organics, FOG, H_2S and ammonia convert to harmless end-products.

SIGNATURE CAPABILITY

Rapid ammonia & nitrogen breakdown

Ammonia from waste and feed is toxic and a leading cause of system failures. BOC accelerates every step of the nitrogen cycle — all the way to harmless nitrogen gas that simply leaves the water.

STEP 1

Waste & feed

Ammonia (NH_3)

Toxic build-up if left unmanaged

STEP 2

Nitrification

Nitrite → Nitrate

Aerobic, oxygen-hungry

STEP 3

Denitrification

Nitrogen gas (N_2)

Inert — escapes to air

BOC accelerates all three steps at once

It frees internal carbon for denitrifiers, boosts oxygen for nitrifiers, and can drive simultaneous nitrification–denitrification (SND) in a single biofilm — even in low-carbon water.

THE PAYOFF

Lower cost. Cleaner water. Less risk.

Up to 50%

lower operating cost

Across energy, chemicals & sludge disposal

Up to 90%

less hydrogen sulfide

Odor and corrosion neutralized at the source

Up to 40%

lower aeration energy

More oxygen per kilowatt of blower power

1–4 ppm

simple dosing

Drop-in to existing infrastructure — no capex

Also delivered:

- Rapid ammonia & nitrogen removal
- Reduced sludge & better dewatering
- Higher biogas yield
- Improved dissolved oxygen
- No biofouling / scaling
- FOG & grease control

All performance figures are "up to" values and depend on system parameters, loading and operating conditions; actual results vary by system.

SAFETY FIRST

Safe for people, animals & marine life

Because BOC is 100% green and non-toxic, it is safe to handle, store and discharge. There are no hazardous chemicals to manage and no harmful residues left behind — a genuine green alternative that carries the Bio-Organic Seal of Safety™.

Non-toxic & non-hazardous

No corrosives, no dangerous handling or storage.

Bio-aquatic safe

Protects human, animal and marine life.

100% green & biodegradable

Plant-based, with no persistent chemical footprint.

Made in the USA

Manufactured to the highest quality standards.



Bio-Organic Seal of Safety™

Non-toxic and safe for human, animal & marine life.

WHERE BOC WORKS

One catalyst, many waste streams

BOC is already treating waste and water across four core sectors — and beyond.

Municipal Waste

Sewage networks, lagoons & treatment plants

Animal Waste

Pig & poultry manure, lagoons and odor

Food Processing

High-strength effluent, FOG & load swings

Industrial Waste

Complex effluent, compliance & scaling

Also proven in:

- Anaerobic digestion & biogas
- Aquaculture & fish farming
- Lake & pond remediation
- Membrane & tertiary treatment
- Facilities & grease traps
- District cooling

SECTOR 01

Municipal Waste

Collection networks and treatment plants under load, budget and odor pressure — the core of the water industry.

THE CHALLENGE

- Hydrogen sulfide odor and corrosion in sewers and lift stations
- High aeration energy costs at the treatment plant
- Rising sludge volumes and disposal fees
- Meeting tightening BOD, COD and nutrient limits

HOW BOC DELIVERS

Odor neutralized

Cuts H_2S at the source — up to 80–90% — for fewer complaints and less corrosion.

Energy saved

Improves oxygen transfer, easing the plant's largest energy load.

Less sludge

More complete digestion means less sludge to dewater and haul.

Cleaner discharge

Lower BOD/COD helps plants stay comfortably in compliance.



SECTOR 02

Animal Waste — Pigs & Poultry

Livestock and poultry operations generate concentrated manure, lagoons and ammonia that create odor, compliance and neighbor issues.

THE CHALLENGE

- Overwhelming odor and ammonia from manure and lagoons
- Crusting, solids build-up and sludge in storage lagoons
- Nutrient-heavy runoff and discharge concerns
- Lost value in waste that could become energy or fertilizer

HOW BOC DELIVERS

Odor & ammonia down

Biologically neutralizes H_2S and ammonia instead of masking them.

Lagoons cleared

Accelerated breakdown reduces crust, solids and lagoon sludge.

More biogas

Faster digestion of manure lifts biogas yield in digesters.

Better digestate

Cleaner, nutrient-rich residual for land application.

SECTOR 03

Food Processing Waste

Food and beverage plants produce high-strength, fat-heavy effluent that swings with production — tough on any treatment system.

THE CHALLENGE

- Very high BOD/COD loads that shock treatment systems
- Fats, oils and grease (FOG) that clog and foul equipment
- Surcharges for exceeding municipal discharge limits
- Variable flows from batch and seasonal production

HOW BOC DELIVERS

High loads handled

Accelerates breakdown of concentrated organic effluent.

FOG dissolved

Breaks down fats, oils and grease to protect equipment.

Lower surcharges

Reduced BOD/COD cuts discharge penalties and fees.

Stable operation

Buffers the biology against production swings.

SECTOR 04

Industrial Waste

From manufacturing to district cooling, industrial effluent is complex, variable and heavily regulated — with little room for error.

THE CHALLENGE

- Complex, variable effluent chemistry to treat
- Strict regulatory limits and reporting obligations
- Biofouling, scaling and fouled membranes
- Pressure to cut chemical use and operating cost

HOW BOC DELIVERS

Broad performance

Enhances biological treatment across diverse waste streams.

Compliance support

Helps keep discharge within permit limits reliably.

Cleaner systems

Reduces biofouling and mineral scaling in equipment.

Lower chemical spend

Displaces costly chemical dosing with a green biocatalyst.

PROVEN & SCALING

Already in commercial use — and expanding

BOC is not a lab concept. It is in active commercial service across multiple countries and sectors, backed by two decades of development and a growing global distribution network — including our GCC partner, Bio Catalyst ME.

20+
years of development

Multi-country
commercial deployments

4
core waste sectors served

Now seeking partners to expand reach and volume across new regions and industries.

Bio-Organic Catalyst, Inc.

US-based manufacturer

THE DIFFERENCE

BOC vs. conventional treatment

	Conventional Chemicals	BOC — Bio-Organic Catalyst
Nature	Synthetic, often hazardous	100% green, non-toxic biocatalyst
Safety	Corrosive handling & storage	Safe for people, animals & marine life
Odor / H_2S	Masks the smell	Neutralizes at the source (80–90%)
Energy	No aeration benefit	Improves O_2 transfer, cuts energy
Sludge	Can increase sludge	Reduces sludge; aids dewatering
Operating cost	High, ongoing chemical spend	30–50% lower total cost
Deployment	New equipment / complex	Drop-in at 1–4 ppm, no capex

LET'S WORK TOGETHER

Simple to start, easy to scale

BOC drops into your existing process — no new plant, no disruption. We support you from first trial to full-scale rollout.



1. Assess

We review your waste streams, loads and current costs to size the opportunity.



2. Trial

A low-risk pilot at 1–4 ppm demonstrates results on your site.



3. Scale

We roll out and supply globally — direct or via regional partners like Bio Catalyst ME.

Ready to cut cost and clean up your waste streams? *Let's design a pilot for your operation.*

Bring the power in water to your operation

Talk to us on how Bio-Organic Catalyst can improve your facility.

NON-TOXIC AND SAFE
BIO-ORGANIC SEAL OF SAFETY
HUMAN, ANIMAL & MARINE LIFE



100 patents world-wide,
21 patents pending.