CAMPUS CHELATUS

Protogenesis
ADVANCED BIOSECURITY SOLUTION
EFFICACY AND WETTING AGENT

# SHAGA
## AQUABIOLOGY

PATH O BLOCK
ADVANCED DISINFECTANT ADDITIVE
FOR LIVESTOCK BIOSECURITY

SurfoPro
ADVANCED BIOSECURITY SOLUTION
EFFICACY AND WETTING AGENT
TOTAL PROTECTION

HydroDefend
ADVANCED ANIMAL CARE SOLUTIONS

# Shaga AquaBiology: Advanced Molecular Solutions for Global Aquaculture Biosecurity

At Shaga AquaBiology—a specialized division of Shaga Chemicals—we engineer high-performance chemical formulations and adaptive water conditioning matrices that redefine biosecurity baselines in modern aquaculture and livestock industries. Founded on the principles of precision chemical engineering and advanced fluid dynamics, our division bridges the gap between molecular chemical synthesis and structural biological defense.

In high-density aquaculture systems, modern hatcheries, and commercial livestock environments, water is both the primary life-support system and the most critical vector for pathogen transmission. Shaga AquaBiology was established to target these systemic vulnerabilities. We specialize in developing advanced surfactant complexes, multi-dentate chelating matrices, pH buffering stabilizers, and catalytic blockers designed to optimize water quality, eradicate stubborn biological matrices (biofilms), and amplify the potency of active sanitizing agents.

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# Shaga AquaBiology: Advanced Molecular Solutions for Global Aquaculture Biosecurity

**Our product portfolio**—including pioneering formulations like Lobster Smart, AquaSentinel, AquaVitalize, and Protogenesis—is trusted by commercial shrimp ponds, premium crustacean and finfish operations, and intensive poultry units to maintain pristine sanitary conditions. By mastering fluid surface tension, mineral sequestration, and biocide longevity at a molecular level, Shaga AquaBiology ensures absolute chemical efficiency, prevents mechanical fouling, and secures peak survival rates for global food production networks.

We do not just treat water; we engineer biological resilience.

Shaga AquaBiology operates as a deeply specialized research and commercial formulation branch of Shaga Chemicals, focusing on technical raw materials and advanced synergistic chemical systems for global aquaculture and intensive farming ecosystems. The division's expertise lies in manipulating fluid parameters, stabilizing aggressive oxidizers, and disrupting protective pathogen barriers without introducing structural environmental stress or shifting critical water baselines.

- Surfactant & Wetting Engineering: Expert design of low-foaming, nonionic tenside complexes (SurfoPro, SurfoStable) that eliminate liquid surface tension to ensure absolute biocide penetration into porous concrete, timber, and micro-crevices.
- Molecular Chelation & Descaling: Industrial-grade sequestration matrices (Campus Chelatus, PremoPro) targeting heavy metal ions and water hardness minerals to systematically dissolve biofilms and mineral scale.
- Biocide Longevity & Stabilization: Innovative stabilization systems utilizing inorganic catalytic blockers (Protogenesis) and precision aromatic preservative cores (Phenoxy) to prevent premature decomposition of oxidizing biocides.
- Eco-Balanced Formulations: Synthesis of highly concentrated, low-dose adjuvant complexes designed specifically for high-sensitivity marine, freshwater, and hatchery systems.

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# Technical Philosophy

**Shaga AquaBiology operates under strict engineering principles, employing precise chemical formulations to create predictable, highly repeatable results. By optimizing the interactions between active sanitizers and water chemistry, the division continuously delivers cutting-edge, industrial-grade protection that preserves infrastructure and guarantees long-term biosecurity integrity.**

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# PathoBlock

Pathoblock is a high-performance disinfectant additive specially formulated to maximize biosecurity, prevent pathogen transmission, and enhance the efficiency of disinfection processes in livestock facilities. Through the synergistic harmony of its rich organic acid profile and stabilizing agents, it optimizes the potency and persistence of disinfectant solutions.

## Key Features and Advantages

Powerful Synergistic Acid Effect: With its high concentration of Citric Acid Monohydrate and Acetic Acid, it rapidly lowers the environmental pH, disrupting the survival environment of pathogens (bacteria, viruses, and fungi) and boosting the killing power of disinfectants.

Superior Surface Adherence: Helps the disinfectant blend adhere better to surfaces, improving penetration into porous areas.

Enhanced Stability and Longevity: Ensures that the disinfectant solution remains active on applied surfaces for longer periods. It balances evaporation and premature drying, thereby extending the critical contact time.

Enhanced Stability and Longevity: Ensures that the disinfectant solution remains active on applied surfaces for longer periods. It balances evaporation and premature drying, thereby extending the critical contact time.

PATH O BLOCK
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FOR LIVESTOCK BIOSECURITY

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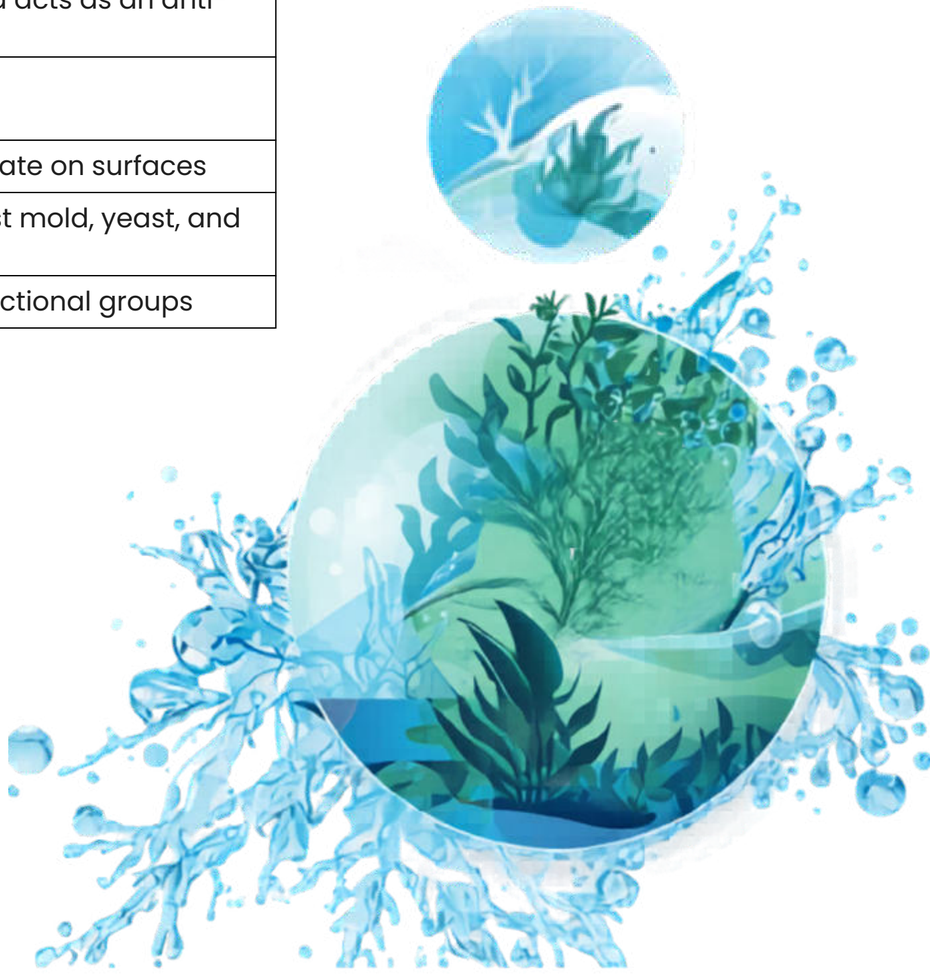
## PathoBlock  Key Features and Advantages

| Ingredient Group | Quantity (kg) | Main Function |
|---|---|---|
| **Organic Acid Complex (pH Regulators)** | 51.465 | Rapidly lowers pH, provides powerful antimicrobial synergy, and acts as an anti-scaling agent |
| **Binding & Adherence Agents (Carbohydrates)** | 3.200 | Enhances viscosity, stability, and surface adherence properties |
| **Co-Solvents & Humectants** | 800 | Acts as a frost-protection agent and controls the evaporation rate on surfaces |
| **Preservatives & Shelf-Life Stabilizers** | 300 | Provides broad-spectrum protection for the formulation against mold, yeast, and bacterial contamination |
| **Carrier Phase (Solvent)** | 44.235 | Forms the liquid base and ensures uniform dissolution of all functional groups |

## Applications

- Poultry, dairy, and livestock farms,
- Hatcheries, slaughterhouses, and meat processing plants,
- Vehicle and equipment disinfection tunnels,
- Boot baths and wheel dips to boost the efficacy of active disinfectant solutions.

Note: Pathoblock is a specialized additive. For optimal biosecurity results, it should be integrated into your sanitation protocol in accordance with the manufacturer's recommended dilution rates of your primary disinfectant.



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# HydroDefend

HydroDefend is a next-generation, broad-spectrum water treatment and disinfectant additive, engineered to establish and maintain an impenetrable biosecurity barrier in diverse animal care environments. Applying advanced synergistic technology, HydroDefend optimizes water quality and defends against a wide array of aquatic and multi-species pathogens. Its high-stability formula ensures prolonged efficacy and superior surface and organic matter penetration.

HydroDefend
ADVANCED ANIMAL CARE SOLUTIONS

## Key Features and Advantages

Total Hydro-Protection: Specifically formulated to address waterborne pathogen risks in aquaculture, poultry, livestock, and hatchery systems, ensuring clean and safe water supplies.

Broad-Spectrum Deflection: Rapidly and effectively defends against key bacterial, viral, and fungal agents (as symbolized by the deflected pathogen shield).

Multi-Species Versatility: A unified solution validated for use across diverse livestock sectors, including aquaculture, bovine care, and poultry farming.

Enhanced Stability & Penetration: A powerful co-solvent and stabilization system ensures the active components remain potent and penetrate biofilms and organic matter.

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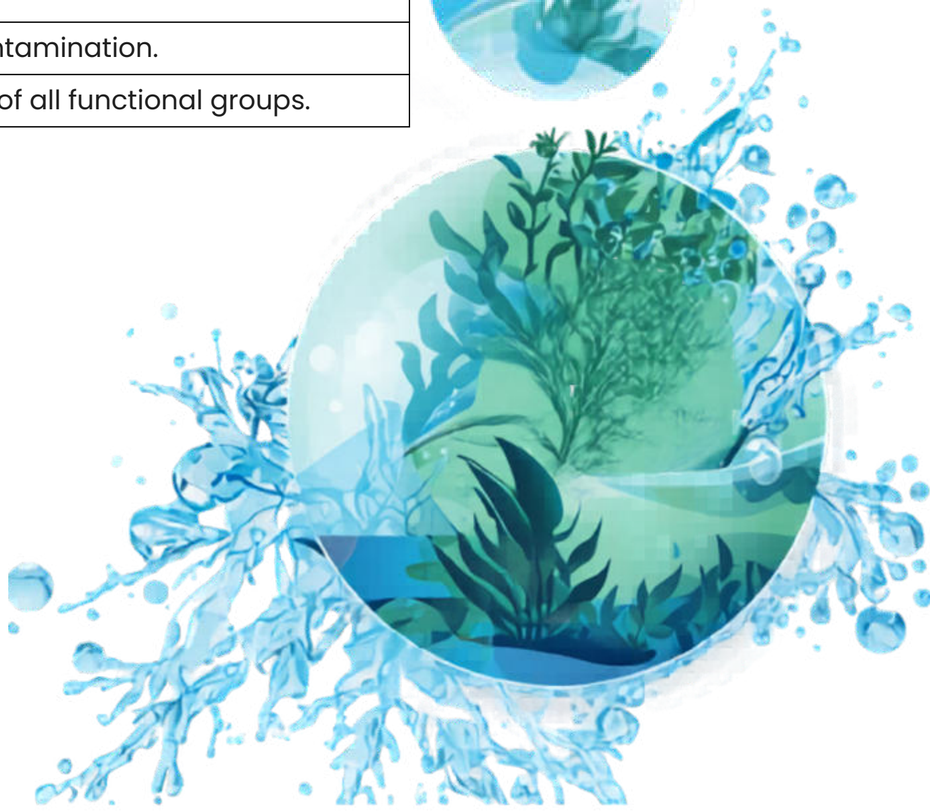
## HydroDefend Key Features and Advantages

| Functional Ingredient Group | Quantity (kg) | Function |
|---|---|---|
| **High-Performance pH Deflectors** | 51.465 | Advanced acidification and pH regulation for optimal efficacy against pathogens. |
| **Broad-Spectrum Biocidal Synergists** | 2.025 | Synergistic agents that amplify the killing power of disinfectants. |
| **Stabilization & Binding Matrix** | 3.200 | Ensures formulation consistency, stability, and enhanced surface adherence. |
| **High-Efficiency Co-Solvents & Penetrants** | 800 | Acts as a frost-protection agent and ensures complete solubility and organic matter penetration. |
| **Microbial Guard & Shelf-Life Extenders** | 300 | Protects the formulation and diluted solutions from contamination. |
| **Purified Water (Carrier Phase)** | 44.235 | Forms the liquid base and ensures uniform dissolution of all functional groups. |

## Applications

- Aquaculture pond and system treatment (all species).
- Poultry and livestock drinking water line disinfection.
- Hatchery and farm equipment cleaning.
- High-level facility biosecurity (boot baths, vehicle disinfection, misting systems).



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# AquaSentinel

AquaSentinel is an advanced, industrial-grade water conditioning and biosecurity defense additive specifically developed for aquaculture, intensive livestock production, and hatchery operations. Formulated with high-capacity chelating agents and stabilization synergists, AquaSentinel targets water hardness minerals, sequesters disruptive metal ions, and breaks down the structural integrity of stubborn biological films (biofilms) in pipelines and water systems. By optimizing water chemistry, it dramatically enhances the performance and longevity of primary disinfectants while ensuring clean, pathogen-free water delivery.

## Key Features and Advantages

Advanced Biofilm & Scale Dissolution: Dynamically binds calcium, magnesium, and heavy metal ions, effectively dissolving scale deposits and stripping away the protective matrices where aquatic pathogens thrive.

- Disinfectant Potency Shield: Prevents water hardness and metal minerals from neutralizing your active biocides, ensuring your primary disinfectant operates at maximum killing efficiency.
- Water Line Longevity: Keeps irrigation lines, drinking nipples, and dosing pumps free from mineral fouling, bio-clogging, and corrosion.
- Eco-Conscious Biosecurity: Specially balanced to maintain system hygiene without introducing harsh non-biodegradable complexes, making it highly safe for sensitive environments like fish/shrimp farming and hatcheries.

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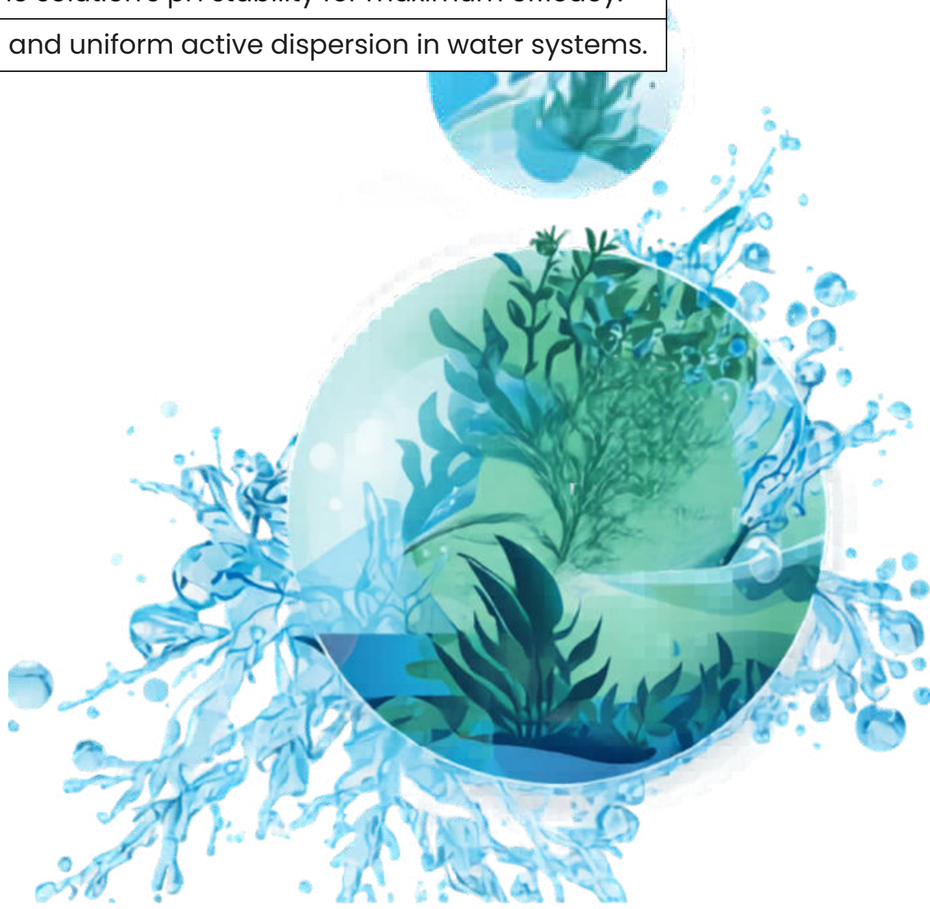
## AquaSentinel Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **High-Capacity Chelating & Sequestration Matrix** | 200 | Binds heavy metals and water hardness minerals to break down biofilms and prevent scaling. |
| **Synergistic Buffering & Stabilization Agents** | 150 | Maintains chemical balance and optimizes the solution's pH stability for maximum efficacy. |
| **Purified Aqueous Carrier** | 99.650 | Forms the liquid base, ensuring rapid dilution and uniform active dispersion in water systems. |

## Applications

- Aquaculture pond, tank, and recirculation system (RAS) water optimization.
- Flushing and continuous maintenance of livestock/poultry drinking lines.
- Scale and biofilm removal in hatchery equipment, washing tunnels, and cooling pads.
- Pre-treatment water conditioning for broad-spectrum farm biosecurity protocols.





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# AquaVitalize

AquaVitalize is a premium, dual-action surface wetting, quick-dry, and penetration accelerator additive engineered to maximize the bio-availability and dynamic coverage of sanitation protocols. Designed specifically for industrial biosecurity across aquaculture, livestock, and hatchery facilities, AquaVitalize radically lowers the surface tension of water networks and disinfectant solutions. By enhancing surface spreading and accelerating delivery times, it ensures that active biocides deeply penetrate microscopic cracks, porous materials, and stubborn bio-organic barriers without leaving prolonged residues.

## Key Features and Advantages

Hyper-Spreading & Wetting Action: Formulated with advanced low-foaming nonionic tensides that eliminate surface tension, allowing disinfectant blends to coat complex geometries completely evenly.

- Low-Foaming Stability: Engineered specifically to prevent disruptive foam build-up in high-pressure sprayers, dosing pumps, and vehicle disinfection gates, ensuring continuous, trouble-free mechanical operation.
- Rapid-Dry & Deep Penetration Matrix: Driven by a fast-evaporating penetration vector that forces the active disinfectant deep into micro-crevices and porous structures, then dries efficiently to prevent slippery or sticky residues.
- Cross-Species Application Support: A high-utility formulation optimization tool ideal for stabilizing sanitation environments in sensitive aquaculture setups, intensive poultry housing, and livestock handling zones.

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## AquaVitalize Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **Rapid Evaporation & Deep Penetration Vector** | 92.300 | Accelerates surface spreading, drives deep structural penetration, and ensures optimal quick-drying properties. |
| **Low-Foaming Nonionic Wetting Agents** | 7.700 | Drastically lowers surface tension, prevents foam disruption, and guarantees uniform film coverage across complex surfaces. |

## Applications

- Acceleration of broad-spectrum disinfectant spraying and misting systems.
- Pre-treatment or concurrent addition for rapid surface wetting in hatcheries and egg rooms.
- High-pressure biosecurity wash systems, vehicle disinfection gates, and equipment sanitation lines.
- Maximizing penetration on porous concrete floors, timber structures, and transport cages.



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# CytoClean

CytoClean is an advanced, high-efficiency buffering and stability optimization additive engineered to regulate the pH environment and maximize the performance consistency of industrial disinfection processes. Developed for demanding biosecurity protocols across aquaculture, livestock operations, and hatcheries, CytoClean works at a cellular-support level to resist pH fluctuations that can otherwise degrade or neutralize active biocides. By creating a highly stable, chemical equilibrium, it ensures your primary sanitation agents deliver sustained, high-level antimicrobial action across diverse water conditions and surface types.

## Key Features and Advantages

Precision pH Buffering Matrix: Formulated with a balanced organic salt complex that acts as a robust chemical buffer, maintaining the ideal pH range required for optimal biocide longevity.

- System & Surface Compatibility: Formulated with highly stable organic components that optimize the solution environment, making it gentle on machinery and dosing systems while maximizing pathogen exposure.

- Biocide Performance Shield: Prevents rapid degradation of active ingredients caused by sudden shifts in water chemistry, protecting your biosecurity investment and ensuring uniform sanitization.

- Cross-Sector Biosecurity Utility: An indispensable formulation support tool adapted for the strict regulatory and environmental parameters of modern hatcheries, commercial poultry units, and fish farming systems.

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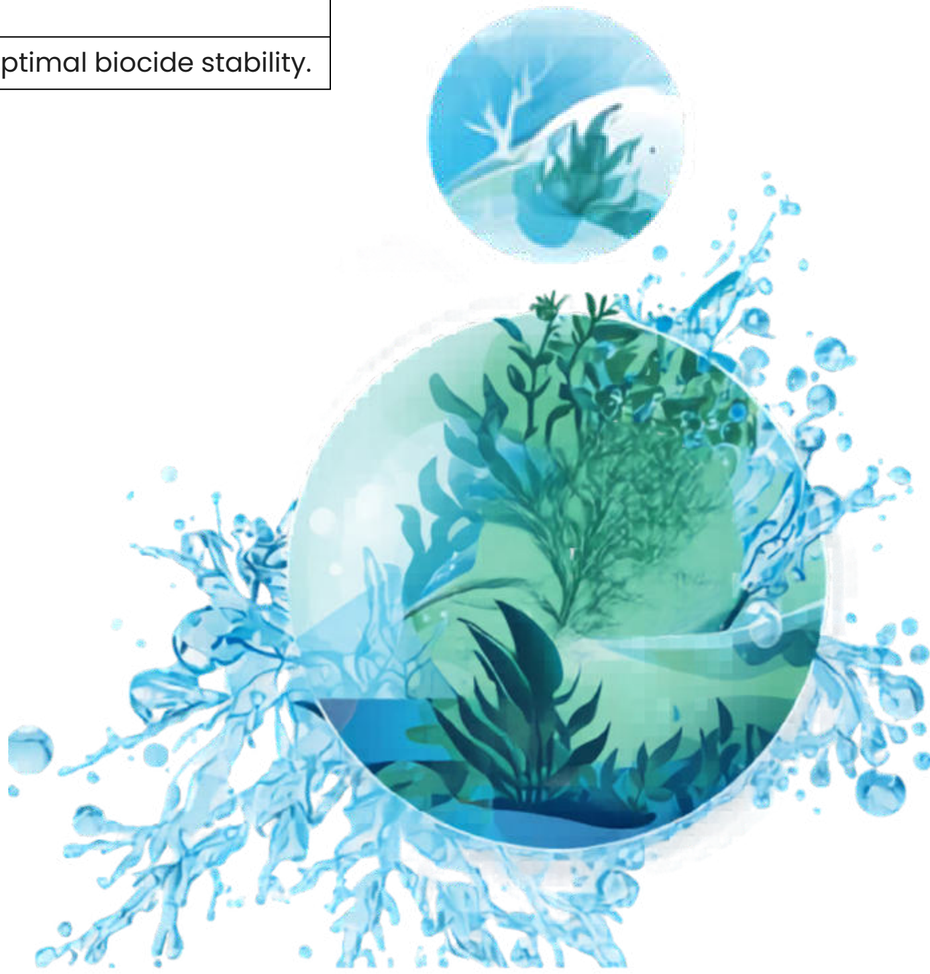
## CytoClean Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **Advanced Organic Buffering Complex** | 81.081 | Establishes a precision chemical buffer system to prevent rapid pH fluctuations. |
| **Synergistic pH Modifiers & Regulators** | 18.919 | Adjusts and fine-tunes the baseline acidity to achieve optimal biocide stability. |

## Applications

- Conditioning and pH-stabilization of water systems before biocide dosing.
- Performance enhancement of spray, misting, and thermal fogging disinfectant solutions.
- Maintaining chemical equilibrium in automated disinfection loops and vehicle wash gates.
- Multi-species biosecurity line flushing to prevent chemical degradation and precipitation.





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# Elcid1

Elcid1 is an advanced, industrial-grade electrolyte balance and biosecurity optimization conditioning matrix engineered to enhance water structures and environmental stability in demanding animal care systems. Developed specifically for aquaculture, intensive livestock, and hatchery environments, Elcid1 provides a targeted blend of essential mineral salts and osmotic regulators. By optimizing the ionic balance of water networks and structural solutions, it prevents osmotic stress in aquatic species, reduces biological vulnerability, and works as a performance synergy vector that ensures primary disinfectants and sanitizers perform at their absolute peak efficiency.

## Key Features and Advantages

Precision Ionic & Osmotic Regulation: Delivers a concentrated matrix of high-purity minerals that stabilize osmotic pressure, dramatically reducing stress and strengthening natural bio-defenses in multi-species environments.

- Environmental & Cellular Shielding: Supports structural resilience at a cellular-environment level, ensuring that target surfaces and aquatic systems maintain a highly balanced, bio-secure baseline.
- Disinfectant Synergy Vector: Balances the water phase to protect primary disinfectant molecules from premature degradation, supporting sustained and uniform antimicrobial action.
- Cross-Species Technical Compatibility: A highly soluble, stable formulation engineered to seamlessly fit the rigorous biosecurity protocols of modern fish/shrimp farming, hatcheries, and livestock housing.

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## Elcid1 Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **Multi-Mineral Ionic & Osmotic Regulators** | 41.500 | High-purity essential mineral salts that manage osmotic balance and optimize chemical solution stability. |
| **Purified Aqueous Carrier (Solvent Phase)** | 58.500 | Forms the liquid core, ensuring instant dilution and uniform dispersion of functional ions. |

## Applications

- Conditioning and mineral/ionic balancing of water lines and aquaculture systems.
- Environmental conditioning of biosecurity solutions to maximize active stability.
- Stress-reduction and water stabilization during deep cleaning and system flushes.
- Multi-species hatchery, poultry, and dairy facility sanitation support.



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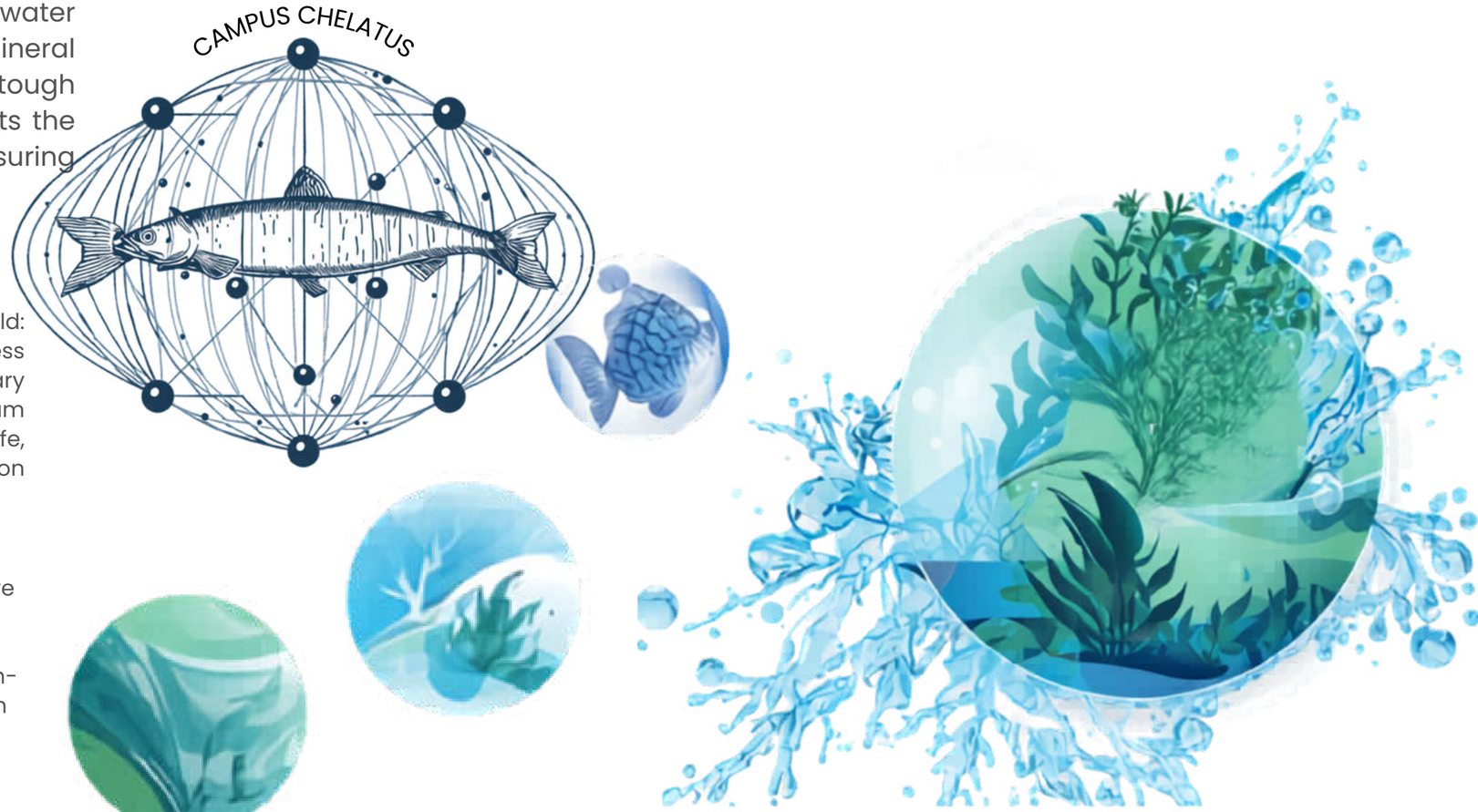
# Campus Chelatus

Campus Chelatus is an elite, scientific-grade molecular water conditioning and heavy-metal detoxification matrix meticulously designed to redefine biosecurity standards in modern livestock, poultry, and aquaculture facilities. Driven by a high-capacity, multi-dentate chelating core, Campus Chelatus targets, binds, and encapsulates disruptive heavy metal ions and water hardness minerals at a molecular level. By locking down mineral interferences, it obliterates the structural integrity of tough biological biofilms, prevents scale formulation, and prevents the premature degradation of active disinfectants—ensuring absolute chemical efficacy and pristine water networks.




## Key Features and Advantages

- Advanced Chelation & Molecular Locking: Dynamically traps calcium, magnesium, and heavy metal ions within a stable ring-like structure, permanently neutralizing their ability to interfere with biosecurity protocols.
- Biofilm Disruption Matrix: Strips away the mineral-based mineral shields that pathogens build to hide, exposing bacteria, viruses, and fungi directly to the action of primary sanitizers.
- Biocide Performance Shield: Optimizes water hardness chemistry, ensuring that primary disinfectants maintain maximum killing power, extended half-life, and consistent distribution without precipitation.
- Eco-Balanced Security Profile: Engineered to be highly effective in low-dose configurations, providing safe, residue-free performance optimized for high-sensitivity environments like fish hatcheries and shrimp ponds.

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## Campus Chelatus Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **High-Capacity Multi-Dentate Chelating Core** | 300 | Binds, sequesters, and encapsulates heavy metals and water hardness minerals to destroy biofilms and scale. |
| **Synergistic Solution Buffers & Regulators** | 150 | Maintains strict solution equilibrium and chemical longevity. |
| **Purified Aqueous Carrier (Solvent)** | 99.550 | Provides an optimal liquid medium for swift dissolution and uniform active dispersion. |

## Applications

- High-level pre-treatment water conditioning for broad-spectrum biosecurity loops.
- Deep cleaning, descaling, and biofilm eradication in farm pipelines and drinking water tracks.
- Performance optimization of aquaculture tanks, closed recirculation aquaculture systems (RAS), and hatcheries.
- Preventing mineral scaling in automated disinfection tünels, vehicle gates, and high-pressure fogging lines.

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# Protogenesis

Protogenesis is an advanced, industrial-grade peroxide stabilizer and biocide longevity enhancement additive engineered to maintain peak chemical performance in high-level biosecurity systems. Developed specifically for demanding sanitation protocols across aquaculture, hatcheries, and livestock operations, Protogenesis acts as a highly specialized crystal-growth inhibitor and catalytic blocker. It systematically neutralizes heavy metal impurities in water networks that would otherwise trigger the rapid, premature decomposition of oxidizing disinfectants (such as hydrogen peroxide or peracetic acid). By shielding the active oxygen molecules, Protogenesis ensures a sustained, controlled, and drastically prolonged antimicrobial release, maximizing broad-spectrum disinfection efficacy over extended contact times.

## Key Features and Advantages

- Oxidizer Longevity Shield: Specifically engineered to stabilize active oxygen and peroxide-based disinfectants, preventing premature decomposition and ensuring maximum chemical shelf-life and working-solution longevity.
- Sustained Antimicrobial Action: Delivers a controlled, steady release of sanitizing power, providing continuous protection against stubborn bacterial, viral, and fungal threats across multi-species environments.
- Heavy Metal Ion Sequestration: Intercepts and locks down trace catalytic impurities (such as iron, copper, and manganese) in water lines, suppressing the decomposition loop of primary biocides.
- System & Component Integrity: Helps maintain chemical equilibrium in water distribution channels, dosing pumps, and automated misting systems, reducing overall system stress and preventing unmitigated chemical reactions.

Protogenesis
ADVANCED BIOSECURITY SOLUTION
EFFICACY AND WETTING AGENT

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## Protogenesis Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **Advanced Inorganic Peroxide Stabilizer** | 10.000 | Sequesters trace heavy metal impurities and prevents the premature decomposition of oxidizing biocides. |
| **Catalytic Blocker** | 90.000 | Provides a highly stable liquid medium ensuring rapid dissolution and completely uniform active dispersion. |

## Applications

- Stabilization of peroxide and peracetic acid concentrations in livestock drinking lines.
- Biocide longevity enhancement in aquaculture tanks, hatcheries, and recirculation aquaculture systems (RAS).
- Continuous conditioning of broad-spectrum oxidation loops used in vehicle wash gates and high-pressure sprayers.
- Preservation of working-solution potency in multi-species biosecurity foot baths and misting protocols.



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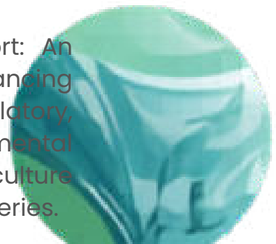
# SurfoStable

SurfoStable is an advanced, industrial-grade surface wetting, multi-phase stabilization, and penetration enhancer additive engineered to maximize the biocide availability and uniform spreading of disinfection systems. Developed specifically for demanding biosecurity protocols across aquaculture, livestock housing, and hatcheries, SurfoStable works by radically reducing the surface tension of water networks and disinfectant working solutions. Powered by a specialized, low-foaming nonionic surfactant matrix, it guarantees that active chemical agents deeply penetrate porous concrete, timber, microscopic cracks, and heavy bio-organic layers. By creating a continuous, stable wetting film, SurfoStable prevents premature droplet runoff and extends critical contact time, ensuring maximum pathogen exposure and absolute sanitation integrity.

## Key Features and Advantages

- Hyper-Wetting & Spreading Action: Drastically lowers fluid surface tension, transforming standard disinfectant droplets into a micro-thin, uniform film that blankets complex surface geometries completely.
- Deep Structural Penetration: Forces primary biocides deep into sub-surface pores, cracks, and stubborn organic residues where dangerous pathogens typically evade sanitation.
- Low-Foaming Mechanical Safety: Specially formulated to prevent excessive foam build-up, ensuring trouble-free and seamless operation in high-pressure sprayers, automated dosing systems, and vehicle disinfection gates.
- Cross-Sector Biosecurity Support: An indispensable formulation-enhancing tool adapted for the strict regulatory, structural, and environmental demands of modern aquaculture systems, poultry units, and hatcheries.



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## SurfoStable Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **Rapid Evaporation & Deep Penetration Vector** | 92.300 | Accelerates surface spreading, drives deep structural penetration, and ensures an optimal drying profile. |
| **Low-Foaming Nonionic Wetting Matrix** | 7.700 | Drastically lowers surface tension, suppresses disruptive foam, and guarantees uniform film coverage across all surface types. |

## Applications

- Performance acceleration of broad-spectrum disinfectant spraying, misting, and thermal fogging protocols.
- Surface wetting and structural pre-treatment in commercial hatcheries, egg rooms, and incubator lines.
- Maintaining uniform distribution and wetting stability in automated vehicle wash gates and farm entrance dips.
- Enhancing chemical penetration on highly porous concrete floors, timber surfaces, and animal transport cages.

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# Abiete

SurfoStable is an advanced, industrial-grade surface wetting, multi-phase stabilization, and penetration enhancer additive engineered to maximize the biocide availability and uniform spreading of disinfection systems. Developed specifically for demanding biosecurity protocols across aquaculture, livestock housing, and hatcheries, SurfoStable worAbiete is an innovative, high-performance essential oil solubilizer, natural surfactant, and aromatic biosecurity booster engineered to elevate environmental sanitation standards in advanced livestock, poultry, and aquaculture facilities. Driven by a specialized, naturally derived conifer resin derivative and nonionic wetting matrix, Abiete effectively decreases the surface tension of water systems while providing excellent emulsification properties for organic essential oils and botanical terpenes.

## Key Features and Advantages

- Natural Essential Oil Solubilization: Specifically developed to evenly emulsify and stabilize pure pine oils, terpenes, and plant extracts in water networks without any oil-phase separation.
- Aromatic Biosecurity Support: Infuses the treated environment with a crisp pine wood aroma that masks harsh chemical odors and promotes a stress-free environment in high-density facilities.
- Advanced Surface Spreading & Wetting: Maximizes the coverage and uniform distribution of disinfectant combinations across complex concrete, timber, and metallic equipment geometries.
- Eco-Balanced & Low-Foaming Formula: Built on biodegradable components that prevent excessive foaming in continuous high-pressure sprayers, misting systems, and vehicle entry tunnels.

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## Abiete Key Features and Advantages

| Functional Ingredient Group | Quantity (g) | Main Function |
|---|---|---|
| **Natural Conifer Resin Solubilizer & Emulsifier** | 50.000 | Naturally derived matrix that flawlessly dissolves essential oils and provides deep structural wetting. |
| **Low-Foaming Nonionic Surface Active Agents** | 4.500 | Reduces fluid surface tension, suppresses excessive foam, and ensures uniform film spreading. |
| **Aqueous Carrier Phase (Solvent)** | 45.500 | Forms the clear liquid base, ensuring swift dilution and uniform active dispersion. |

## Applications

- Emulsification and uniform delivery of therapeutic pine/essential oils in livestock environments.
- Aromatic misting, fogging, and surface spraying protocols in poultry housing and hatcheries.
- Odor control, environmental refreshing, and deep cleaning in multi-species farm buildings.
- Biosecurity conditioning for high-pressure washing loops, boot baths, and equipment sanitation gates.



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## SurfoPro

SurfoPro is an advanced, industrial-grade surface wetting, fast-evaporating penetration vector, and biocide performance accelerator specifically engineered to optimize sanitation and biosecurity protocols. Designed for rigorous application across poultry houses, aquaculture units, and hatchery facilities, SurfoPro targets and drastically lowers the surface tension of water networks and disinfectant solutions. Driven by a balanced blend of a fast-drying carrier and low-foaming surface-active agents, it guarantees that active biocides completely coat complex geometries, penetrate deeply into sub-surface micro-crevices, and easily cut through protective organic coatings. SurfoPro dries rapidly and efficiently without leaving sticky or slippery residues, maximizing contact efficacy while maintaining high mechanical safety in pressure equipment.

## Key Features and Advantages

- Hyper-Spreading & Wetting Action: Formulated with advanced nonionic wetting agents that eliminate fluid surface tension, allowing disinfectant blends to coat porous and hydrophobic surfaces uniformly.
- Rapid-Dry & Deep Penetration Vector: Powered by a fast-evaporating penetration accelerator that drives sanitizing agents deep into cracks, structural joints, and timber pores before flashing off efficiently.
- Low-Foaming Mechanical Safety: Engineered specifically to prevent disruptive foam build-up, ensuring trouble-free, continuous operation in high-pressure sprayers, automated dosing pumps, and vehicle disinfection gates
- Cross-Species Application Support: A vital biosecurity optimization tool perfectly adapted for the strict sanitary requirements of modern fish/shrimp farming, commercial hatcheries, and livestock facilities.

SurfoPro
ADVANCED BIOSECURITY SOLUTION
EFFICACY AND WETTING AGENT
TOTAL PROTECTION

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## SurfoPro  Key Features and Advantages

| Functional Ingredient Group | Quantity (kg) | Percentage (%) | Main Function |
|---|---|---|---|
| **Rapid Evaporation & Deep Penetration Vector** | 16.615 | 9.231% | Accelerates surface spreading, drives deep structural penetration, and ensures an optimal quick-drying profile. |
| **Low-Foaming Nonionic Wetting Matrix** | 1.385 | 769% | Drastically lowers surface tension, suppresses disruptive foam, and guarantees uniform film coverage across all surface types. |
| **Total SurfoPro Blend** | **18.000** | **10.000%** | **High-utility sanitation performance booster.** |

## Applications

- Performance acceleration of broad-spectrum disinfectant spraying, misting, and thermal fogging protocols.
- Surface wetting and rapid-dry conditioning in commercial hatcheries, incubator rooms, and egg storage areas.
- Maintaining uniform coverage and spray stability in automated vehicle wash gates and entrance disinfection loops.
- Maximizing biocide penetration on highly porous concrete floors, timber structures, and transport cages.

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# PremoPro

PremoPro is a professional, high-performance water conditioning, scale prevention, and biosecurity optimization matrix engineered to safeguard water infrastructure and maximize chemical sanitization efficiency. Developed for the rigorous demands of poultry operations, aquaculture systems, and commercial hatcheries, PremoPro features a highly concentrated blend of multi-dentate chelating agents, chemical buffers, and structural micronutrient stabilizers. By binding disruptive hardness minerals and heavy metal ions at a molecular level, it breaks down stubborn bio-organic matrices (biofilms), prevents mineral scaling in pipelines, and shields active biocides from premature degradation—guaranteeing continuous, high-level pathogen defense.

## Key Features and Advantages

- Molecular Chelation & Descaling: Sequesters calcium, magnesium, and heavy metal ions, stripping away mineral scale deposits and the protective structural frameworks where dangerous microbes hide.
- Biocide Potency Shield: Prevents hard water minerals from neutralizing your active sanitizing agents, significantly extending the working half-life and killing efficiency of primary disinfectants.
- Advanced Solution Buffering: Stabilizes water chemistry parameters to prevent sudden pH fluctuations, ensuring a uniform, highly predictable sanitation environment.
- Infrastructure Protection: Keeps irrigation lines, drinking nipples, high-pressure sprayers, and dosing pumps completely free from bio-clogging, mineral buildup, and corrosive stress.

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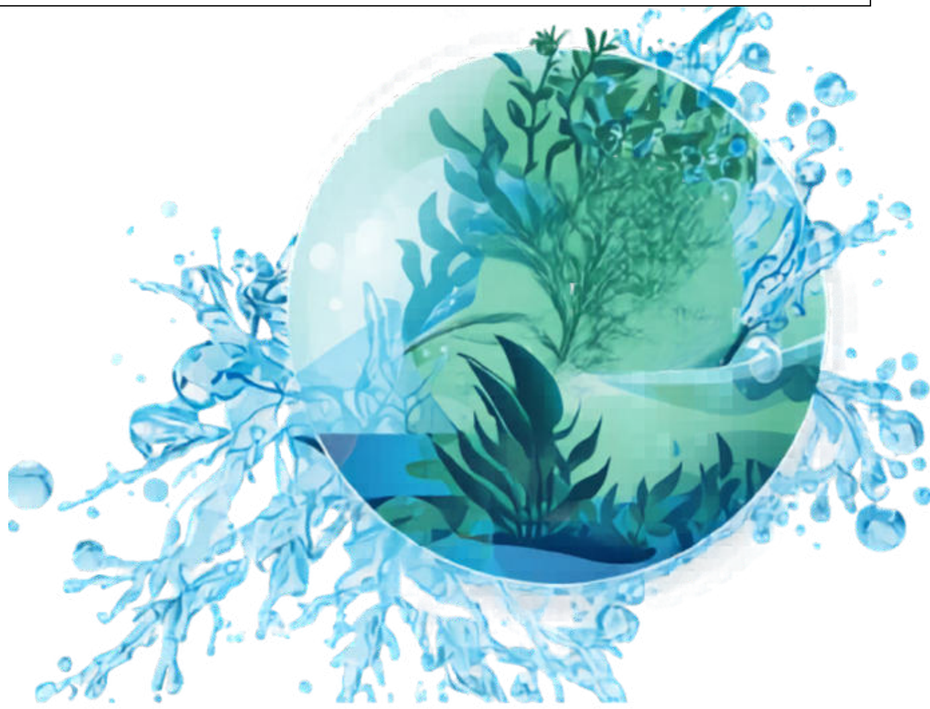
## PremoPro Key Features and Advantages

| Functional Ingredient Group | Quantity (kg) | Percentage (%) | Main Function |
|---|---|---|---|
| **High-Capacity Sequestration & Chelating Matrix** | 2.646 | 2.646% | Binds heavy metals and water hardness minerals to break down biofilms and strip mineral scale. |
| **Synergistic Solution Buffers & pH Regulators** | 6.526 | 6.526% | Establishes strict chemical equilibrium and maintains target solution stability. |
| **Trace Mineral Stabilizers & Micronutrient Vectors** | 500 | 500% | Provides advanced crystal-growth inhibition and structural ionic optimization. |
| **Deionized Carrier Phase (Solvent)** | 90.328 | 90.328% | Pure aqueous base ensuring rapid dilution and completely uniform active dispersion. |
| **Total PremoPro Blend** | **100.000** | **10.000%** | **Advanced water line hygiene and biosecurity booster.** |

## Applications

- Conditioning and mineral optimization of livestock and poultry drinking water lines.
- Scale and biofilm eradication in commercial hatcheries, incubator networks, and cooling pads.
- Pre-treatment water stabilization for automated vehicle disinfection gates and thermal fogging loops.
- Performance enhancement of recirculation aquaculture systems (RAS) and holding tanks.



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# Phenoxy

Phenoxy is an advanced, industrial-grade preservative amplification and secondary stabilization matrix engineered to secure structural integrity and extend the biosecurity lifecycle in heavy-duty hygiene systems. Developed specifically for demanding livestock, poultry, and aquaculture environments, Phenoxy targets organic contamination and works as an enzymatic barrier that suppresses microbial proliferation in concentrate blends and water delivery channels. Driven by a powerful combination of a specialized aromatic preservative core and a synergistic organic acid regulator, it fortifies biosecurity setups against secondary contamination, controls pathogenic rebound, and guarantees deep chemical stability even under highly challenging organic waste loads.

## Key Features and Advantages

- Amplified Preservative Shield: Delivers a highly concentrated aromatic defense matrix that effectively shuts down the metabolic and cellular replication pathways of bacteria, molds, and yeasts.
- Synergistic Acid Activation: Utilizes a precision-dosed organic acid component that optimizes environmental pH conditions, drastically amplifying the speed and efficiency of the preservative core.
- Organic Matter Resilience: Unlike standard stabilizers that lose potency in the presence of soil or debris, Phenoxy remains active and stable across heavy organic loads and porous structures.
- Biosecurity System Protection: Secures technical concentrate blends, automated dosing loops, and storage tanks from spoilage, bio-fouling, and secondary degradation.

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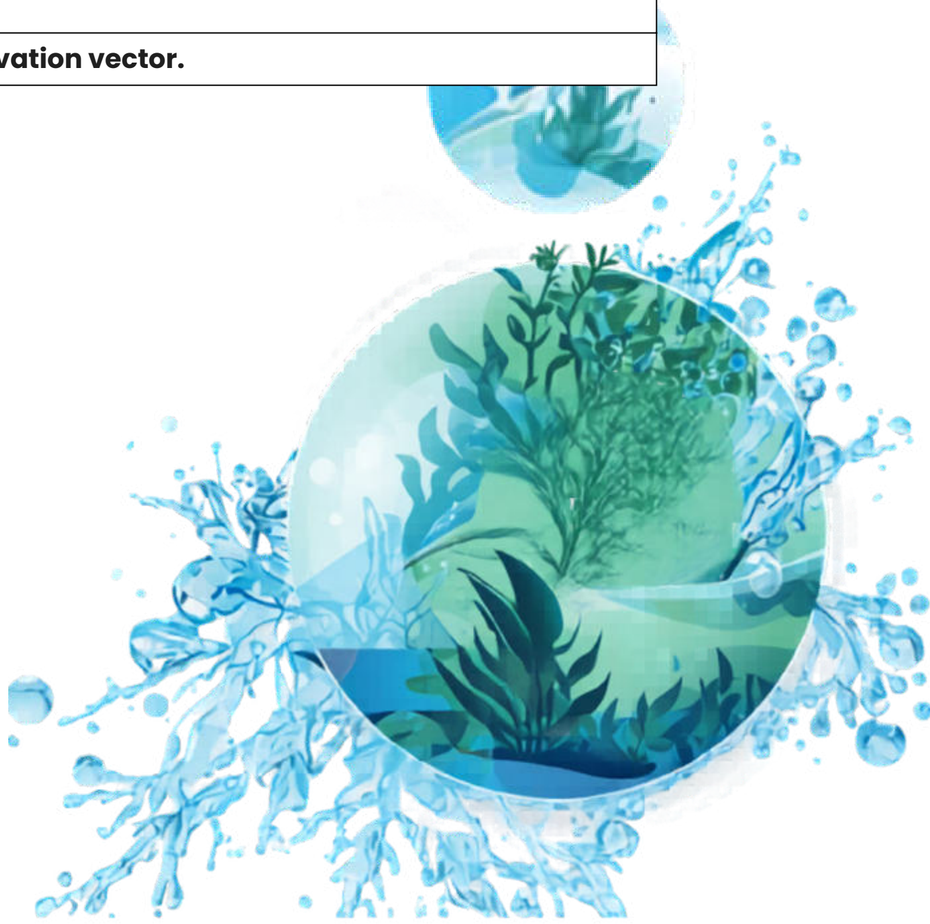
## Phenoxy Key Features and Advantages

| Functional Ingredient Group | Quantity (kg) | Percentage (%) | Main Function |
|---|---|---|---|
| **Advanced Aromatic Preservative Core** | 15.747 | 874.837% | Broad-spectrum microbial control, preventing spoilage, mold, and bacterial fouling. |
| **Synergistic Organic Acid Regulator** | 2.253 | 125.163% | Drives down pH baseline to dramatically boost and activate the preservative matrix. |
| **Total Phenoxy Blend** | **18.000** | **1.000.000%** | **High-efficiency biosecurity preservation vector.** |

## Applications

- Preservation and secondary stability management of concentrated biosecurity formulations.
- Guarding and flushing automated water delivery loops, storage tanks, and dosing networks.
- High-level stabilization of spray, misting, and foot bath systems against biological rebound.
- Environmental conditioning of structural concrete, transport lines, and processing equipment.





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# Lobster Smart 50 40

Lobster Smart 50 40 is an elite, high-performance aquaculture biosecurity treatment and specialized water conditioning matrix engineered specifically for premium crustacean and marine farming systems. Developed to maintain pristine sanitary baselines in high-density lobster, shrimp, and finfish operations, Lobster Smart 50 40 targets and systematically neutralizes multi-species waterborne pathogens, bacterial strains, and organic bio-fouling. Driven by a highly stable active core and a precision delivery carrier, this specialized formulation penetrates deep into biological layers (biofilms) and tank crevices, ensuring a sustained antimicrobial protective shield without leaving harmful residues or altering critical water parameters—guaranteeing peak survival rates and ultimate crop vitality.

## Key Features and Advantages

- Targeted Aquaculture Protection: Specifically balanced for sensitive marine and freshwater setups, providing deep sanitation without inducing osmotic or chemical stress on valuable stocks.
- Biofilm & Organic Matter Penetration: Formulated with high-efficiency wetting and delivery enhancers that allow active elements to cut through protective mucus layers and dense organic contaminants.
- Broad-Spectrum Bio-Deflection: Rapidly breaks down and eliminates targeted bacterial colonies, fungal vectors, and viral threats commonly found in recirculating aquaculture systems (RAS) and hatchery ponds.
- Sustained Active Shielding: Provides controlled and extended biocidal stability in the water phase, ensuring long-lasting pathogen defense over critical contact times.

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## Lobster Smart 50 40  Key Features and Advantages

| Functional Ingredient Group | Quantity (kg) | Percentage (%) | Main Function |
|---|---|---|---|
| **Broad-Spectrum Active Biocidal Core** | 5.000 | 500% | High-concentration antimicrobial agent for rapid elimination of bacterial, viral, and fungal paths. |
| **Advanced Polymeric Delivery & Wetting Matrix** | 4.000 | 400% | Enhances surface wetting, cuts through organic matrices/biofilms, and ensures uniform dispersion. |
| **Purified Aqueous Carrier (Solvent Phase)** | 91.000 | 9.100% | Pure liquid medium ensuring instant dilution and uniform distribution across large aquaculture water systems. |
| **Total Lobster Smart 50 40** | **100.000** | **10.000%** | **Premium crustacean biosecurity and sanitation booster.** |

## Applications

- High-level disinfection and maintenance of lobster holding tanks, shrimp ponds, and commercial aquaculture systems.
- Sanitation of water inlets, recirculation pipelines, filtration loops, and automated dosing channels.
- Deep cleaning of hatchery equipment, transport crates, sorting units, and processing tools.
- Continuous biosecurity barrier control (entrance dips, vehicle wash gates, and structural facility misting).