

# **PRODUCTS & APPLICATIONS**

# **Products**

All Bio-Organic Catalyst products are produced in the United States and must meet the highest standards of guality. Our products are not only completely safe and non-toxic, but offer a new model for green chemistry that improves the health of ecosystems. BOCs provide economically compelling benefits to environmental professionals, bringing practical and cost saving advancements to wastewater treatment, water clarification, and industrial and commercial cleaning. BOCs offer substantial operational optimization in aquaculture, agriculture, biological film growth, mineralization, and hydrocarbon remediation applications.

**Applications** 

AD-Cat<sup>™</sup> Bio-Catalytic Treatment for Anaerobic Digestion

**Clear-Cat**<sup>™</sup> **Bio-Catalytic Water Conditioning** 

**CT 100**<sup>™</sup> **Bio-Catalytic Water Clarifier** 

**Eccomate**<sup>®</sup> **Municipal & Industrial Odor Control** 

Eco-Cat<sup>™</sup> **Bio-Catalytic Treatment Solid & Liquid Wastes** 

Eco-Cat Clean<sup>™</sup> **Bio-Catalytic Cleaning & Odor Control** 



## Agriculture

Water/Soil Conditioner

✓ Keeps irrigation lines free of scale and biofilm Releases nutrients & microorganism activity ✓ Improves plant growth and yields



#### **Anaerobic Digestion**

- **Optimizing Anaerobic Digestion Systems**
- ✓ Increases bio-methane yields
- Reduces volume of solids and increases quality ✓ Reduces odors



### Aquaculture

Improvement of Aquaculture Operations

- ✓ Improves available dissolved oxygen
- ✓ Reduces environmental stress on stock
- ✓ Reduces/eliminates phytoplankton growth



## **Bio-Catalytic Cleaning**

Advanced Bio-Catalytic Solutions

- ✓ Makes drains free-flowing
- ✓ Treats wastewater discharges 'at-source'
- ✓ Non-toxic, biodegradable, and non-allergenic



**Composting & Animal Care** Odor Control & Accelerated Composting Rates ✓ Neutralizes odors on contact Accelerates composting rates ✓ Improves quality of compost



## **Cooling Towers**

- Bio-Catalytic Water Clarifier Reduces energy loss
- ✓ Improves water discharges
- Eliminates fouling of filters.

#### Eco-Cat Clean<sup>™</sup> General Purpose Cleaner **Bio-Catalytic Cleaning Solution**

**EcoSystem Plus® Bio-Catalytic Water & Sludge Treatment** 

Fiber-Cat<sup>™</sup> **Bio-Catalytic Water Treatment** 

Nontox<sup>®</sup> Bio-Catalytic Treatment of Petroleum Hydrocarbons

Phyto-C,™ Water/Soil Conditioner

Pool-Cat<sup>™</sup> and Spa-Cat<sup>™</sup> For Sparkling Clear Water



### Hydrocarbon Cleaning/Remediation

Accelerated Degradation of Hydrocarbons ✓ Immediate rise of flash point of fuels

- ✓ Immediate action on insoluble TPH compounds
- ✓ Deep cleaning of substrates of TPH pollutants



#### Odor

- **Odor Control Management**
- ✓ Neutralizes odors on contact
- ✓ Enhances aerobic biological conditions
- ✓ Very cost effective



## **Facilities Management**

- **Environmental Solutions**
- ✓ Ultra-deep cleaning
- ✓ Neutralizes odors on contact
- ✓ Eliminates hazardous chemicals

#### Paper & Pulp

- Improving Environmental Maintenance
- ✓ Eliminates the formation of biological film
- ✓ Increases oxygen transfer rates
- ✓ Reduces manufacturing downtime for cleaning

#### Wastewater Treatment & Collection Systems

#### Aeration, Biosolids, and Collection Systems

- Increases dissolved oxygen
- ✓ Reduces energy use
- ✓ Reduces sludge volumes

#### Water Clarification

## Water Clarity & Mineralization Treatment

- ✓ Increases dissolved oxygen
- Reduces chemical odors (VOCs)
- ✓ Eliminates mineralization buildup

# TECHNOLOGY



# **Bio-Catalytic Technology**

The bio-catalytic compositions (BOCs) of Bio-Organic Catalyst, Inc. offer an entirely new technological breakthrough within the traditional water treatment and cleaning chemistries marketplace. BOCs are all based upon a breakthrough technological understanding of how to unlock the inherent transformation power of natural biological pathways. The BOCs products contain no bacteria, and are completely nontoxic and biodegradable. BOCs are built upon the powerful bio-catalytic capabilities of a fermentation supernatant, derived from plants and minerals, offering a highly enriched and concentrated nutrient source. This is blended with surface modifying components into a very powerful liquid concentrate which, in water, create ultra-fine micro-bubbles that act as a platform for highly accelerated chemical and biological reactions for much higher conversion rates within water and solid waste treatment.

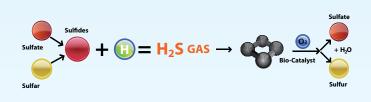
#### **Cleaning Organic Wastes**

- **Bio-Catalytic Factors For Exceptionally Deep Cleaning**
- Initiates an immediate catalytic breakdown of wastes,
- Eliminates the accumulation of biofilms and microscopic scum,
- Maintains drains and interceptors free flowing with no odors.

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#### **Odor Elimination**

- **Superior Odor Control**
- Oxidizes noxious gases through oxygen transfer,
- Establishes more oxygenated and healthy aerobic biological conditions,
- Instantaneous odor neutralization on contact.



# **Bio-Organic Catalyst®**

- ✓ Establish the conditions for rapid oxygen penetration into the cell wall of the microorganisms.
- ✓ Increase the volume of biogas yields in anaerobic digestion system through increased solubilization of components of waste stream.
- ✓ Provide highly enriched bio-available nutrients required for optimizing biological transformation of organic pollutants.
- ✓ Significantly enhance the reduction of discharges in wastewater treatment facilities.
- ✓ Degrade biological film growth, improving health care safety, reducing contamination and corrosion.
- $\checkmark$  Degrade mineralization within tanks, pipes and filters.
- ✓ Cleave (hydrolysis) the molecular bonds of fats, oils and greases (FOGs) to glycerol and fatty acids.
- ✓ Offer superior performance in eliminating noxious and hazardous (odors) volatile organic compounds (VOCs).
- $\checkmark$  Has the ability to substantially speed up the remediation of petroleum hydrocarbons (TPH).
- ✓ Dramatically improves the microbial vitality in indigenous ecologies.

# **Bio-aquatic Toxicity and Safety Studies**

The BOC Seal of Safety represents our commitment to meeting the highest standards of safety and bio-aquatic nontoxicity to all living organisms. BOC product formulations have undergone rigorous independent testing, including leading recognized EPA certified laboratories. The product compositions have shown non-toxicity ratings far exceeding generally available green cleaners and traditional chemical based products. Not only are our BOC compositions extremely safe, they also have important benefits to the downstream systems or water bodies they impact.



There are many different aspects to consider when accessing the safety and toxicity profile of a chemistry:

- One, is the sensitivity of humans and animals to exposure to the chemistry (e.g., skin, eyes, lungs). BOC has shown to present little, if any, sensitivity in this regard.
- Second, is the biodegradability over time of the chemistry. BOC has shown an ability to accelerate the natural biological reduction rate within ecosystems or engineered wastewater treatment systems.
- Third, bio-aquatic toxicity testing of any chemical compound in EPA testing protocols is tied the toxicity of that compound on highly sensitive shell fish. This provides the basis for the EPA testing and ratings (LD 50). BOC showed ratings of over 200 ppm to 316 ppm–much higher than almost any chemical, green or otherwise, on the market today.

# bio-organic.com