

# Organic Products Company

P.O. Box 426

Claxton, Georgia 30417

Phone (912) 368-2651

## PRODUCT INFORMATION SHEET

### How HISTOSOL Products Work

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HISTOSOL Products work through a combination of organic and bacterial activity. HISTOSOL OP-9840 has components that change toxic materials into non-toxic chemicals through molecular absorption. Molecules in the product act like a sponge to chelate and bind, thus neutralizing odors emitted by paper mills, sewage treatment facilities and rendering plants. Pollutants are toxic compounds that react. When they react with the HISTOSOL product, they become something else and they are absorbed. Once they don't react, they don't harm the environment.

A sewage treatment plant that is working puts out mostly carbon dioxide, not methane and sulfur dioxide. Carbon dioxide is odorless. Sulfur dioxide and methane stink. Paper mills also emit sulfur dioxide. Your nose will let you know right away when a paper mill or sewage treatment facility is polluting. HISTOSOL Bio-Series contains selectively adapted microbes, which break down the gases at these facilities and use them for their own reproduction. Take the sulfur out of the sulfur dioxide and you don't have the smell and that's exactly what microbes do.

Nature's way of cleaning the environment and keeping the components of our environment in perfect equilibrium is biological decomposition. It's an ongoing process within the environment, carried out by billions of naturally occurring, living microorganisms that use organic waste water as their food and energy source.

Although nature has a remarkable ability to restore itself, the natural biological process has a few shortcomings. The primary problem is man's contamination of the environment with non-biodegradable and difficult to degrade chemical compounds. Naturally occurring microorganisms often lack the ability or would take an infinite amount of time to break down specific elements.

To overcome many of these limitations, highly specialized microorganisms and bioformulations that possess enhanced degradation capabilities are added to our special medium and allowed to incubate for ten days before shipment. This provides for an increase in cell count of about 35 times and, when used by our customers, has an immediate beneficial effect which can be measured in reductions daily of Total Suspended Solids (TSS), Biological Oxygen Demand (BOD), corrosion, and odors.

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First, microorganisms are selected that have had the opportunity to acclimate naturally to specific organic substances known to be difficult to degrade or non-biodegradable in low concentration.

Once identified the organism undergoes selective enhancement procedures referred to as selective adaptation. In this process, microorganisms are subjected to enrichment techniques in which each generation of the microorganism is subjected to higher concentrations of a target compound until a strain is developed with superior biokinetic and degradation capabilities. The result is a highly specialized, selectively adapted microorganism, which exhibits a higher preference for the target compound, and a greater tolerance for toxins and toxic concentration of the target compound.

Once the desired strain is established, it undergoes a process of laboratory screening, safety testing, application testing and field trials. The combination of our special medium and the selectively adapted microorganisms act on the target compound to break it down into simpler compounds as in the example previously given where bacteria break down sulfur dioxide to use the sulfur for their own reproduction. Sulfur dioxide gas is thereby eliminated and so is its smell.

All life is composed of carbon chains. Microbes use enzymes to break down long carbon chains into simpler ones they can use. Fats are long carbon chains. Simple sugars are short carbon chains. By breaking up long carbon chains into short carbon chains, microbes create food for themselves....materials for energy and reproduction.

By adding the organisms that produce these enzymes to our medium and incubating, we not only increase their numbers tremendously, we also get the enzymes they produce in the process. This gives the buyer a tremendous advantage over other products sold because our product works faster and more efficiently to eliminate their problems and at a significantly lower cost.