



ODOR AND THE POWER OF 444

INTRODUCTION

An odor can be defined as a sensation caused by a volatized compound, generally at a low level of concentration, which humans and animals perceive by the sense of olfaction (i.e. use of the sensory nerve cells in the nose). The widest range of odors consists of organic compounds, although some inorganic substances, such as hydrogen sulfide and ammonia, are also odorants. Organic stains are discolorations of a material brought about by a (normally unintentional) interaction with an organic compound, whose properties include the ability to transfer its coloring onto other objects.

Odors can be considered pleasant, such as the aromas of flowers and perfumes, or unpleasant, such as organic waste or decaying compounds. Although most people will classify certain odors into one of the two categories, there is a wide variety of opinion on many odors depending on the culture, experience, age, etc. of the observers. For example, the relative pleasantness and acceptance of human body odors varies greatly among different cultures and races.

TECHNOLOGY CONSIDERATIONS

GreenFlash Technologies (GFT) produces Formula 444, which is marketed as both OdorOut-444 (OO-444) and KennelFresh-444 (KF-444). These products attack the source of the odor (or stain) to breakup and eliminate all organic-based odor (stain) molecules and certain chemical odor compounds (such as hydrogen sulfide and ammonia). The technology employed is microbial, that is, the use of high-concentration specially blended bacteria spores to penetrate the odor-causing molecule, breaking it down to its elemental form, binding the non-organic components and metabolizing the central carbon atoms of the organic compounds.

All bacteria employed are commonly found Bacillus spores and none are genetically altered. The bacteria blend provides an aggressive combination of bacteria that will quickly search out many different odors and stain sources and completely eliminate them by chemical breakdown and metabolic processes. All products are natural, biodegradable, non-toxic and safe around children, pets and marine life. Formula 444 contains no alcohols, solvents, or phosphates and only biodegradable surfactants at a neutral pH.

Today the largest selling "odor" products are either air fresheners or air disinfectants. These products typically mask the odors with various fragrances and / or employ alcohols or similar agents to eliminate some microorganisms, which may

or may not be the source of the odor. In many cases the odors return shortly after the application. None of these products attack serious odors or stains such as those from bathrooms, pets, cigarette smoke, kitchens, etc.

There are a number of "odor" companies using enzymes or other chemicals to attack specific (e.g., pet) odors & stains, but these are generally limited in application to odor molecules for which they are specifically designed and often do not work at all on others. None of these can be considered as truly natural, as the chemical enzymes employed remain in the treated area following the odor removal process.

All bacteria produce enzymes as part of their normal metabolic processes. Our bodies also produce enzymes as part of their normal metabolic processes. For example, we produce amylase, steapsin, pepsin and rennin in our digestive tracts to initially break down chewed food that has been deposited in our stomach. These enzymes break down the various food groups into more easily absorbed compounds that are taken into the body through the small intestines for nutrient sources for our various physiological functions.

Enzymes are protein-based chemicals whose only function is to accelerate other chemical reactions. Enzymes are a byproduct of normal microbial (bacterial) metabolism. They are much cheaper to "harvest" than bacteria for commercial sale to end-users. Enzymes are not living organisms and thus do not require nutrients, water and oxygen to operate. They can be produced in less than sterile conditions; and can be stored as any chemical compound. That's why so many products are enzyme-based. They're much cheaper to produce than microbial-based products; but they do not metabolize the odor or stain sources.

The bacteria in GFT's odor products similarly produce enzymes that break down the targeted organic contaminants so the bacteria can then more easily metabolize (digest) them and thus provide the nutrients to the bacteria so they can continue to function as created. OdorOut-444 and KennelFresh-444 have very high microbial counts and a wide variety of Bacillus bacteria spores. Our microbials do produce enzymes as they begin to metabolize the contaminants in their environment; but these enzymes, after they break down their food source to a more readily digestible form, are ingested by the microbials together with the modified food source. Consequently, enzymes no longer remain in the treatment area following the odor (stain) elimination process.

Only a very few products are truly natural, biologically-based products, and these, like **OdorOut-444™** and **KennelFresh-444™**, are microbially (bacteria) based. With GreenFlash products, the microbes penetrate the odor molecules and metabolize the carbon atoms, totally eliminating the odors and stains caused by the source. In this case the odors/stains never return.

Between March and May 2007, a very large pet supplier submitted 20 odor products, including **KennelFresh-444™** to a rigorous set of in-house and outside performance tests for consideration as a basis for a future privately labeled odor product. At the end of each set of tests, they reported that **KF-444** had come in first in every performance category. At the end of all the testing KF-444 was the decisive winner as the highest performing product on the market. Yet, a

comparative cost analysis of KF-444 put it at or near the lowest priced products available.

APPLICATIONS AND EXAMPLES

Home & Personal

OdorOut-444 is very effective for many uses around the home. It is strong; it can quickly tackle and eliminate the hardest bathroom, kitchen, smoking, garbage pail and diaper pail smells. Yet, it is gentle; it can be used on the sheerest of fabrics. As long as a fabric can tolerate water, it will be able to tolerate OO-444. And, it is safe; it can be used safely on baby or child clothes and toys; it can be used in pet areas, and it is safe around marine or vegetable life. Many users keep bottles in most rooms in the house, to quickly eliminate odors or stains as they occur.

With the increase separation of garbage from recyclable materials in trash bins, the garbage bins can be an increased source of noxious odors and insects. OO-444 will attack the source that attracts the insects and will eliminate the odor.

A number of smokers have taken to carrying small (2-4 oz) bottles in their purse or car to spray on their clothes and hair following a smoking break to completely eliminate all residual odor effects. Similarly, a short spray from a small bottle can be very effective in eliminating food or drink stains from clothes or upholstery before the stain has a chance to set.

Most bathroom deodorizers replace the offensive odor with a perfume scented fragrance, and assume that normal air flow will eliminate the odor before the fragrance wears off. Obviously, this fails when restrooms are heavily used, as the continuing odor generation overwhelms the ability of the fragrance to keep up. With OdorOut-444 the bacteria eliminate the odor source every time it is generated, so there is no build-up of the offensive odors.

Pets

There are over 70 million owned dogs and 90 million owned cats in the U.S. alone. All of these pets exhibit the normal bodily functions, and most, if not all of them, have had or will have an "accident" or two during their lifetime. Also, odors from litter boxes, 'wet dog' smells, regurgitations, dirty paws, and other animal oriented odors and stains are part of the 'joy' of pet ownership. The stains and odors from cat and dog urine probably constitute the most common and often, most frustrating contaminants to contend with. KennelFresh-444 makes these, and all other pet odor/stain issues, simple problems to overcome. Likewise, the odor and stain from feces can be eliminated from carpets, floors, pet beds, litter boxes, etc. by removal of the solid material, and treatment of the area with KF-444. The microbials in KF-444 quickly attack, destroy and metabolize the stain/odor, such that, in minutes, it is usually impossible to identify the location of the "accident".

In numerous examples, long-term ground-in urine stains and odors have been eliminated from carpets, wood floors, upholstery, pet beds, etc. by single or multiple applications of KennelFresh-444. For difficult stains or odors, if a double

application of KF-444 still doesn't completely eliminate the problem, the stain (or odor) can usually be eliminated by a very heavy application of KF-444, followed by a heavy spray of water on the spot. It is then necessary to cover the area with a very damp rag and allow it to sit for a few hours or overnight. By the next morning the remaining stain/odor will be taken up into the damp rag; if needed, the rag can be cleaned by spraying it with KF-444, and then washing it in a washing machine.

Litter boxes should be sprayed with KennelFresh-444 to keep them clean and fresh smelling. Areas used for "marking territory" can also be eliminated by applications of KF-444.

In many neighborhoods, skunks will visit at varying times of the year. These precious animals can leave behind an unpleasant "gift" -- a highly offensive sulfur-based spray on your pets, children or yard areas. Unlike the past, when a long smelly bath in tomato juice was necessary to obtain limited relief, with KF-444, a heavy spray of the product on the affected areas will completely eliminate the noxious odor. As with other intense odors, multiple applications are often necessary if a large skunk application was made.

Vehicles

Automobiles, vans, buses, boats, etc. are relatively small enclosed spaces, often used for lengthy periods of time, and subject to spills, smoke, babies, pets, and other sources of odors and stains. Re-used vehicles, such as rental cars/boats, pre-owned cars, etc. can carry residual odors or stains that are often virtually impossible to eliminate. Boats, particularly, with closed-systems for bathroom waste, will often hold on to bathroom odors, especially when holding tanks start reaching capacity. The regular use of OdorOut-444 in and around the "head" area will eliminate all of these odors from the "head" as well as the other living areas of the boat.

OdorOut-444 is currently being used by a large number of auto dealers / rental agencies to prepare their vehicles before giving them to the public. A vehicle can be completely deodorized by misting the product throughout the interior and directing the mist into the intake vent of the air conditioning system. The vehicle, including the air-conditioner vents and filters, are made fresh smelling and ready for the most sensitive of noses. OO-444 is currently under review by a major automobile manufacturer for consideration of inclusion of a small bottle with every car sold.

Mold & Mildew

Mold and mildew are fungi organisms that can spoil food, cause health problems and destroy walls, floors and coverings. OdorOut-444 is not a pesticide, and does not kill these life forms. However, the highly aggressive bacteria in OO-444 will attack and metabolize these organism food sources, thereby eliminating them; and thusly, robbing the fungi of their means of growth. OO-444 makes no claim for eliminating mold or mildew, but will guarantee that all odors and stains from these sources will be eradicated.

One example of this application is the stain from a black mold that had penetrated in and through the grout between tiles of a shower area. OdorOut-444 penetrated the grout areas and eliminated all signs of odor and stain from the area, and the mold has not returned in over three years.

Following the catastrophic effects of Katrina on the city of New Orleans, one of the signs that it left behind was a plethora of mold covered walls and floors throughout the city. GFT donated many gallons of OdorOut-444 to Celebration Church, where the floors and walls across almost the entire church were covered with black mold up to 6-7 feet high. Church volunteers sprayed down all of the wall and floor areas with the product, and by the next morning, all signs of the mold were eliminated.

Other Uses

The list of other possible applications of OdorOut-444 and KennelFresh-444 is almost endless. Some of the places where they have been used effectively include:

- Q Zoo – Used to remove the ammonia scent from a giraffe holding area, where animals were kept during cold snaps.
- Q Jail – Used to eliminate odors from showers, locker and bathroom areas used by guards and some inmates.
- Q Locker Rooms – Being used by some NFL teams, plus some schools for their PE and intra-mural sports locker rooms.
- Q Hotels/Motels – Used by a number of hotels/motels to de-smoke and deodorize rooms before renting out to next occupant.
- Q Assisted Living Residences – Used to eliminate the scent from human waste, body odors, cleaning solutions, etc. often associated with rest homes and elder care.
- Q Home Sales – Used to eliminate many years buildup of odors from a variety of sources, including pets, children and molds that had penetrated the flooring and walls of the house. Made the entire house odor free after about 2 – 3 applications at points of worst contamination.
- Q Public Transportation – Used in school buses and is being evaluated for usage by a large municipal transportation network

AVAILABILITY

Formula 444 is available in either a ready-to-use form or in a highly concentrated form. Additionally, a highly concentrated, deep cleaning industrial version (called **Product 445**) is available in drum sizes for large industrial odor problems.