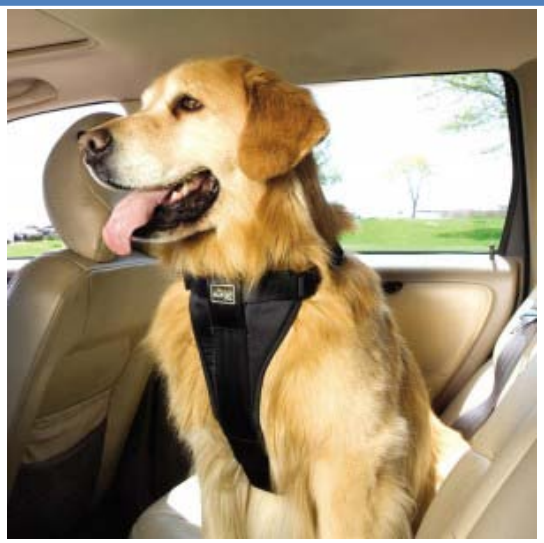
Eliminate Air Pathogens, Odors and VOC's

Nano Purifier

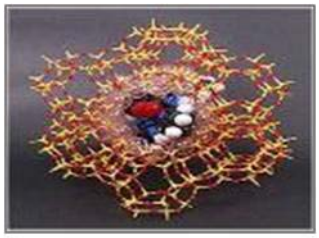


JESENARTS
杰 仕 雅

Welcome to JEBSENARTS, a provider of innovative green chemistry solutions for a greener, safer and healthier life and planet. We have been working diligently by through nanotechnology, nanobiotechnology and green chemistry to create eco-friendly products and a carbon neutral company with a zero environmental footprint.

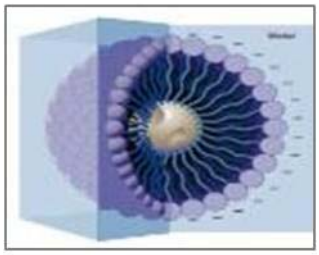
We are the market leader in supplying deodorizer, air purifier, air freshener and sterilizer which are eco-friendly, safe, reusable, recyclable, non-toxic, non-flammable and non-caustic odor, pollution and moisture control products that do not contain petrochemical based ingredients, VOCs, CFCs, harmful or ozone depleting chemicals. All of our formulations are based on non-toxic, food based, plant and plant derivatives based ingredients.

Our Specialty Technologies



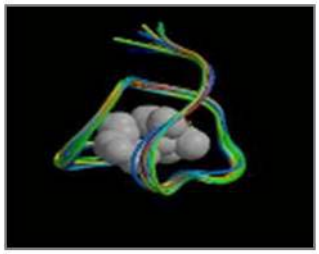
NANO PORES

Nano Pores are three-dimensional,crystalline solids, microporous and nanoporous with well- defined structures that contain aluminum, silicon, and oxygen in their regular framework; cations and water are located in the pores. This is a natural mineral and has void that can host cations, water, or other molecules.



NANO BIOTECH COLLOIDAL MISCELLES

NBCM are very fine molecules with spherical aggregate structure which remain in suspension indefinitely and are not affected by gravity when dispersed in a liquid colloid. They also undergo thermal fluctuations and Brownian motion. It works well with hard, soft, cold, hot, fresh and salt water.



COLLOIDAL SILVER

Colloidal silver is a type of colloid that consists of solid particles suspended in a liquid. The solid is very small particles of metallic silver and the liquid is water. A silver colloid then must have silver particles in suspension. Colloidal silver also contains another form of silver called ions.

GREEN CHEMISTRY

Green chemistry, also called sustainable chemistry, is a chemical philosophy encouraging the design of products and processes that reduce or eliminate the use and generation of hazardous substances. It aims to avoid problems before they happen.

Body Odor

Body odor is the smell of bacteria growing on the body. The bacteria multiply rapidly in the presence of sweat, but sweat itself is almost completely odorless to humans. The condition can be known as fetid sweat, body smell or malodorous sweating.

Body odor can smell pleasant and specific to the individual and can be used to identify people, though this is more often done by dogs and other animals than by humans. An individual's body odor is also influenced by diet, lifestyle, gender, genetics, health and medication.

Propionic acid (propanoic acid) is present in many sweat samples. This acid is a breakdown product of some amino acids by propionibacteria, which thrive in the ducts of adolescent and adult sebaceous glands. Because propionic acid is chemically similar to acetic acid with similar characteristics including odor, body odors may be identified as having a vinegar-like smell by certain people. Isovaleric acid (3-methyl butanoic acid) is the other source of body odor as a result of actions of the bacteria *Staphylococcus epidermidis*, which is also present in several strong cheese types.

Dog Odor

Dog as all mammals, have natural odors. Natural dog odor can be unpleasant to dog owners especially when dogs are kept inside the home, as some people are not used to being exposed to the natural odor of a non-human species living in close proximity to them. Dogs may also develop unnatural odors as a result of skin disease or other disorders or may become contaminated with odors from other sources in their environment.

Natural dog odors are most prominent near the ears, and from the paw pads. Dogs naturally produce secretions the function of which is to produce scents allowing for species and individual animal recognition by other dogs and for use in scent-marking of territory. This is a feature they share with other canids.

Others sources of odors are as below:

- Dogs like to roll in and mark themselves with some natural products of other animals in their environment.
- Poor grooming of dogs with long, thick or corded hair can cause the haircoat to be a source of unpleasant odor.
- Skin diseases can cause a dog to have increased or abnormal odor.
- Ear disease (otitis) can be a source of odor that varies from yeasty to one resembling sewage as either cerumen or pus accumulates in the diseased ear canal.
- Dental disease or mouth ulcers can produce rotten smelling breath (halitosis).
- Dogs can also acquire foul smelling breath as a result of coprophagia, the practice of eating their own feces or the feces of other animals.

Cigarette Smoke

Cigarette smoke contains a number of toxic chemicals and irritants. People with allergies may be more sensitive to cigarette smoke than others and research studies indicate that smoking may aggravate allergies.

Smoking does not just harm smokers but also those around them. Research has shown that children and spouses of smokers tend to have more respiratory infections and asthma than those of non-smokers. In addition, exposure to secondhand smoke can increase the risk of allergic complications such as sinusitis and bronchitis.

Common symptoms of smoke irritation are burning or watery eyes, nasal congestion, coughing, hoarseness and shortness of breath presenting as a wheeze.

Volatile Organic Compound

Volatile organic compounds (VOCs) are organic chemicals that have a high vapor pressure at ordinary, room-temperature conditions. Their high vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate from the liquid or solid form of the compound and enter the surrounding air. Many VOCs are dangerous to human health or cause harm to the environment. VOCs are numerous, varied, and ubiquitous. They include both man-made and naturally occurring chemical compounds. Anthropogenic VOCs are regulated by law, especially indoors, where concentrations are the highest. VOCs are typically not acutely toxic, but instead have compounding long-term health effects..

Biological Generated VOCs

Not counting methane, biological sources emit an estimated 1150 teragrams of carbon per year in the form of VOCs. The majority of VOCs are produced by plants, the main compound being isoprene. The remainder is produced by animals, microbes, and fungi, such as molds.

The strong odor emitted by many plants consists of VOCs. Emissions are affected by a variety of factors, such as temperature, which determines rates of volatilization and growth, and sunlight, which determines rates of biosynthesis. Emission occurs almost exclusively from the leaves, the stomata in particular. A major class of VOCs is terpenes, such as myrcene.

Elimination of Odor through Odorless Disinfectants and Purification

Colloidal Silver vs. Bacteria

Catalytic Oxidation:

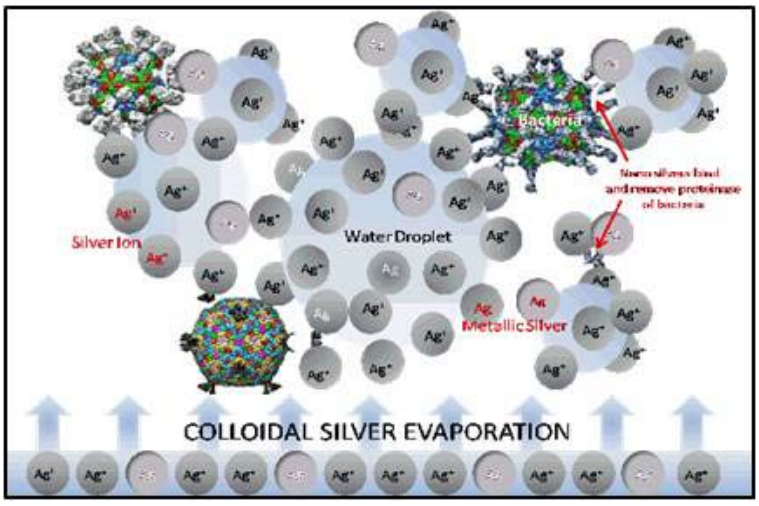
Silver, in its atomic state, has the capacity to absorb oxygen and act as a catalyst to bring about oxidation. Atomic (nascent) oxygen absorbed onto the surface of silver ions in solution will readily react with the sulfhydryl (-S-H) groups surrounding the surface of bacteria or viruses to remove the hydrogen atoms (as water), causing the sulfur atoms to form an R-S-S-R bond; blocking respiration and causing the bacteria to expire. Employing a simple catalytic reduction or oxidation reaction, colloidal silver will react with any negative charge presented by the organism's transport or membrane proteins and deactivate them.

Reaction with Bacterial Cell Membranes:

There is evidence that silver ions attach to membrane surface radicals of bacteria, impairing cell respiration and blocking its energy transfer system. One explanation is based on the nature of enzyme construction: Specific enzymes are required for a given biochemical activity to take place. Enzyme molecules usually require a specific metallic atom as part of the molecular matrix in order to function. A metal of higher valance can replace a metal of lower valance in the enzyme complex, preventing the enzyme from functioning normally. Silver, with a valance of plus 2, can replace many metals with a lower, or equal valance that exhibit weaker atomic bonding properties.

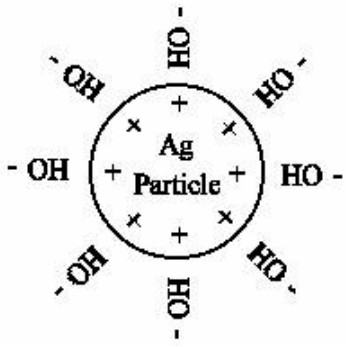
Binding with DNA:

Studies by C.L. Fox and S.M. Modak with Pseudomonas aeruginosa, a tenacious bacteria that is difficult to treat, demonstrated that as much as 12% of silver is taken up by the organism's DNA. While it remains unclear exactly how the silver binds to the DNA without destroying the hydrogen bonds holding the lattice together, it nevertheless prevents the DNA from unwinding, an essential step for cellular replication to occur.



Colloidal Silver vs. VOCs

Ionization breaks the water molecule into hydrogen **H+** and hydroxyl ions **OH-**, which are negatively charged. The negative charge of the hydroxyl ions counters the positive charge of the silver ions and maintains a solution of whose net charge is zero. Thus the negative hydroxyl ions are created at the same time that the positive silver ions and silver particles are created. The hydroxyl ions are non-metallic ions that bond to the atoms of the silver particles thus imparting their negative charge to the particles. This behavior is well documented for colloidal particles which have charged particles adsorbed on them. The mutual repulsion of the similar charges then stabilizes the colloid by keeping the particles from agglomerating. Thus, this process creates super **Silver- Hydroxyl Radicals**.



These highly reactive electrons aggressively combine with other elements in the air, such as bacteria and Volatile Organic Compounds (VOCs) which include harmful pollutants such as formaldehyde, ammonia and many other common contaminates. Once bound together, the chemical reaction takes place between the super Silver- Hydroxyl Radicals and the pollutant, effectively "oxidizing" (or burning) the pollutant.

Nano Biotech Colloidal Micelles (NBCM)

SHEPROS combines the knowledge of nanotechnology and biotechnology in using the unique colloidal chemistry to generate a state of the art formulation that produces the innovative Nano Biotech Colloidal Micelles (NBCM). NBCM are mild but are amazingly powerful colloidal micelles made from non-toxic plant based extracts, plant derivatives and biodegradable surfactants.

NBCM are very fine molecules with spherical aggregate structure which remain in suspension indefinitely and are not affected by gravity when dispersed in a liquid colloid. It is surrounded by a cloud of tightly bound ions. The NBCM aggregates form in order to minimize the free energy of the solution. They are dynamic but equilibrium structures and able to rearrange in response to changing environmental conditions. They also undergo thermal fluctuations and Brownian motion. It works well with hard, soft, cold, hot, fresh and salt water.

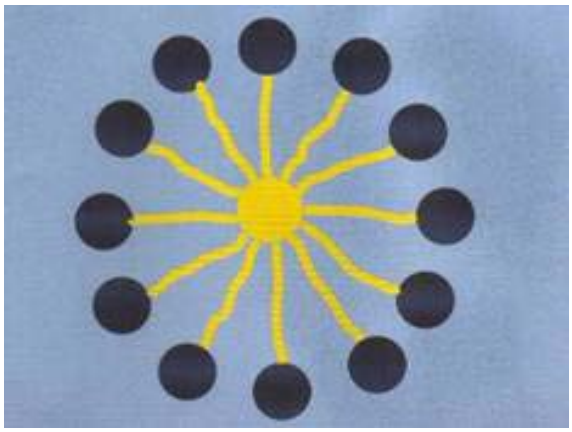


Illustration of Nano Biotech Colloidal Micelles.

The hydrophobic poles attract to each other forming interior micelles cluster and the hydrophilic poles form a powerful outer surface.

NBCM in colloidal chemistry can be explained as a sub-division of physical chemistry comprising of the phenomena characteristic of matter when one or more of its dimension lie in the range between 1 nanometer and 100 nanometer. In this nature of science, the dimension of NBCM is more important than the nature of the material. In the size range of nanometer, the surface area of NBCM is much greater than its volume that unusual phenomena of colloidal micelles will occur as following:

a. They do not settle out of the suspension of gravity.
b. They will move in at least one dimension randomly.
c. They have the velocity that will move endlessly without stopping.
d. They will have tremendous wetting capacity.
e. They will reduce the surface tension in water or water solutions.
f. They will have sterilizing effect by disrupting the DNA or RNA of the virus, prokaryotic cell of bacteria, and eukaryotic cell of algae, protozoa and fungi.

How do NBCM destroy bacteria?

A cell wall protects bacteria cell from the effects of osmotic pressure. NBCM destroy the peptidogylan layer of the bacteria cell walls, but not to human beings and animals which do not have cell wall. In the absence of unstable formed peptidogylan, growing bacteria cells will be weaken and destroy through to the following exposures:

1. Inhibition of cell wall synthesis

   Generally, a bacterium is in a hypotonic solution and water tries to move in to the bacterium from a higher water concentration to the lower water concentration. When the cells are less resistant to the effect of osmotic pressure; the underlying cytoplasmic membrane bulges through the weakened portions of cell wall as water moves into the cell, and eventually the lyses.

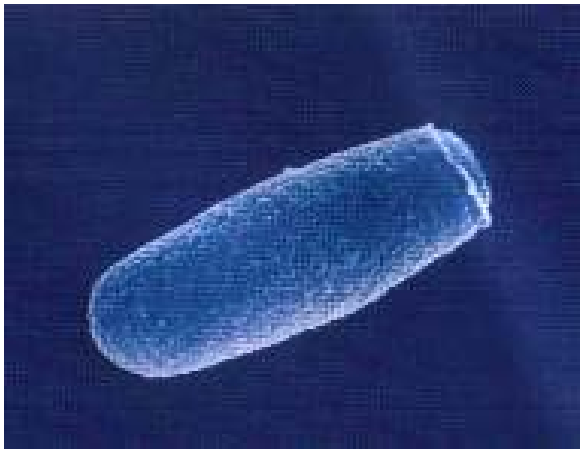
2. Inhibition of metabolic pathways

A damaged cell wall will affect all the chemical reactions in metabolism of the bacterium. The unstable metabolic pathways will result in unstable enzyme activity, temperature and pH in the cell.

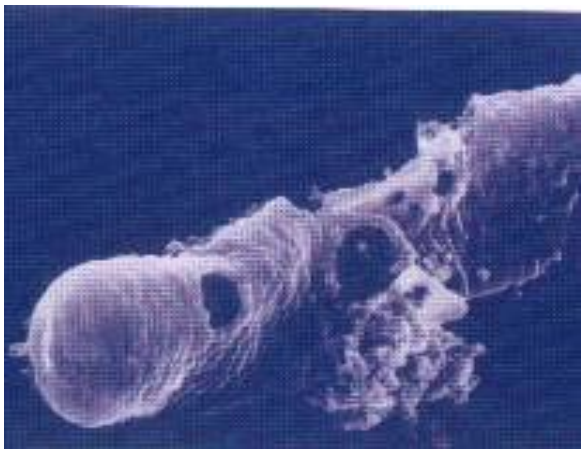
3. Disruption of cytoplasmic membranes

   The disruption of cytoplasmic membranes will severely damage the cytoplasm which is composed with primary 90% of water and proteins. The contents of cytoplasm such as nucleoid and ribosomes will be destroyed.

NBCM Aspects of Disinfectants



A scanning electron micrograph of bacteria cell before the inhibition of cell wall synthesis; inhibition of protein synthesis; and disruption of cytoplasmic membrane.



A scanning electron micrograph of bacteria cell bursts from osmotic pressure due to the integrity of peptidoglycan is not maintained. This is due to the followings:

- *Inhibition of cell wall synthesis where bacteria cell walls are destroyed, but not to animals which lack cell walls.*
- *Inhibition of metabolic pathways.*
- *Disruption of Cytoplasmic membranes.*

CAR NANO PURIFIER

Car, Van, and Truck Odor Problems

Several foul odors from exhaust fumes, body odor, spills, food, smoke, pet odor, mold, and mildew can be found in cars. These nasty odors, which can put a damper on your driving pleasure, will increase in concentration if left untreated and penetrate carpets and upholstery. Covering up nasty closet odors with fresheners like perfumes will pollute the air with volatile organic compounds (VOC's) and many times result in even more offensive smells. More importantly, fragrances won't eliminate the problem.

The Solution

The Car Nano Purifier (CNP) was specially developed to neutralize and to eliminate pungent automobile odors on contact. VDA will truly cleanse the air of offensive car odors while preventing mold and mildew. Using CNP will result in a fresh, clean smelling vehicle that will be appreciated by the whole family. This is sure to enhance your driving experience.

Effects of Car Nano Purifier (CNP)

1. CNP has an excellent ability to decompose Volatile Organic Compounds (VOCs) with good disinfectants and deodorizing competence.
2. No sediments.
3. Small dosage can generate powerful disinfectant and deodorizing performance.
4. CNP technology can decomposed various bacteria and fungi up to 99.99%.
5. It thoroughly decomposes various odor components that arise from odor-prompting bacteria. (deodorization)
6. CNP uses evaporation which is a non-electroplating method.
7. Non-toxic and environment-friendly ingredients through green chemistry.
8. CNP is also effective where there is no light.

Advantages

- Simply place in automobile & smell the difference
- Eliminates automobile odors instead of covering them up
- Environmentally friendly & non-flammable
- Safe, non-toxic, natural, non-caustic, odorless
- Improves indoor air quality significantly
- Creates a cleaner, healthier, safer automobile
- Can be used in cars, vans, & trucks

No Cover-up with Fragrance

The Car Nano Purifier (CNP) is a safe and powerful air purifier that can be used to eliminate pungent exhaust fume, gasoline, smoke, spill, food, musty, and mildew odors instead of merely covering them with fragrances. CNP is a green ingredient air purifier that can be used to eliminate unpleasant odor, destroy VOC's and sterilizes microbial. The formulation of CNP incorporates nano materials to form powerful disinfectant and deodorizer with a combination of billions of nano biotech colloidal miscelles and nano colloidal silver. This gives CNP an enormous surface area to disinfect and eliminate bacteria, VOC's, odors and smoke.

Environmentally Friendly

The Car Nano Purifier (CNP) is non-toxic, safe, non-hazardous, natural, essential oil scented and non-caustic. It is an ideal environmentally friendly solution for eliminating vehicle odors without adding pollutants to the air you breathe. CNP does not contain chemical additives and is especially beneficial for those suffering from chemical sensitivity.

Applications

The Car Nano Purifier (CNP) can be effectively used to eliminate unpleasant exhaust fume, gasoline, cigarette smoke, pet odor, body odor, spill, food, musty, and mildew odors from any car, van, or truck. CNP also has good disinfectant properties to eliminate virus and bacteria in your vehicles.

Directions

For a breath of fresh air, simply place Car Nano Purifier (CNP) in air conditioner outlet of the automobile to be treated, and smell the difference. This product will function most efficiently in an enclosed area with good air circulation. To obtain the best results, remove the odor sources (e.g. spills) and clean the affected area prior to treating with CNP. CNP can be used effectively 24 hours/day during cooler weather.

MULTI-PURPOSE NANO PURIFIER

Indoor Air Quality Problems

Often times the home could be invaded by offensive and noxious odors from pets, chemicals, perfumes, bathrooms, diapers, mold, cooking, drains, smoke, garbage, new carpet, paint and many other sources. Unfortunately, most ventilation systems only recirculate room air and remove large particulate matter such as dirt, dust, and lint. Noxious odors are left free to recirculate in the air you breathe. Over time, they could increase in concentration and result in serious indoor air pollution problems e.g. sick building syndrome. According to the EPA, "indoor pollution can be as much as 100 times greater than outdoors." Since most people spend close to 90% of their time indoors, indoor air pollution poses a serious health risk.

Medical problems that have been associated with poor indoor air quality include dizziness, headaches, eye nose or throat irritation, dry or itchy skin, nausea, shortness of breath, difficulty in concentrating, fatigue, sensitivity to odors, allergies, depression, and chronic illnesses.

The Solution

The Multi-Purpose Nano Purifier (MPNP) was specially developed to neutralize and to eliminate pungent household odors on contact. MPNP will truly cleanse the air of offensive home odors while preventing mold and mildew. Using MPNP will result in a fresh, clean smelling home that will be appreciated by the whole family. This is sure to enhance your home experience.

Effects of Multi-Purpose Nano Purifier (MPNP)

1. MPNP has an excellent ability to decompose Volatile Organic Compounds (VOCs) with good disinfectants and deodorizing competence.
2. No sediments.
3. Small dosage can generate powerful disinfectant and deodorizing performance.
4. MPNP technology can decomposed various bacteria and fungi up to 99.99%.
5. It thoroughly decomposes various odor components that arise from odor-prompting bacteria. (deodorization)
6. MPNP uses evaporation which is a non-electroplating method.
7. Non-toxic and environment-friendly ingredients through green chemistry.
8. MPNP is also effective where there is no light.

Advantages

- Simply place in living room or toilet & smell the difference
- Eliminates household odors instead of covering them up
- Environmentally friendly & non-flammable
- Safe, non-toxic, natural, non-caustic, odorless
- Improves indoor air quality significantly
- Creates a cleaner, healthier, safer home
- Can be used in living room, kitchen, toilet and closet

No Cover-up with Fragrance

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