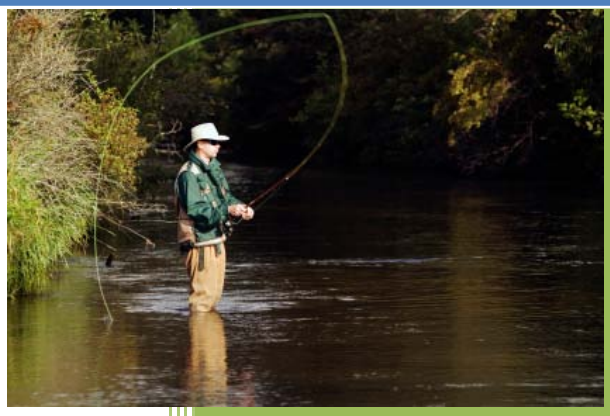
SHEPROS®

Safety, Heath & Environment Product Solutions

Eliminate Body Odor
Through Disinfectants

Hunter Deodorizer

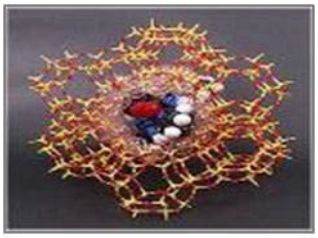


Shepros Sdn. Bhd.

Welcome to SHEPROS, a global 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.

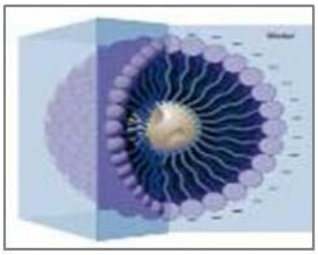
We are the market leader in supplying deodorizer, air purifier, air freshener and sterilizer which are eco-friendly, safe, reusable, recyclable, non-toxic, non-flammable and non-caustic odor, pollution and moisture control products that do not contain petrochemical based ingredients, VOCs, CFCs, harmful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

Our Technologies



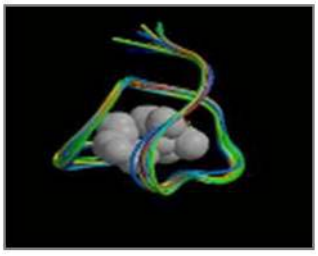
NANO PORES

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.

Elimination of body odor through Odorless Disinfectants

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.

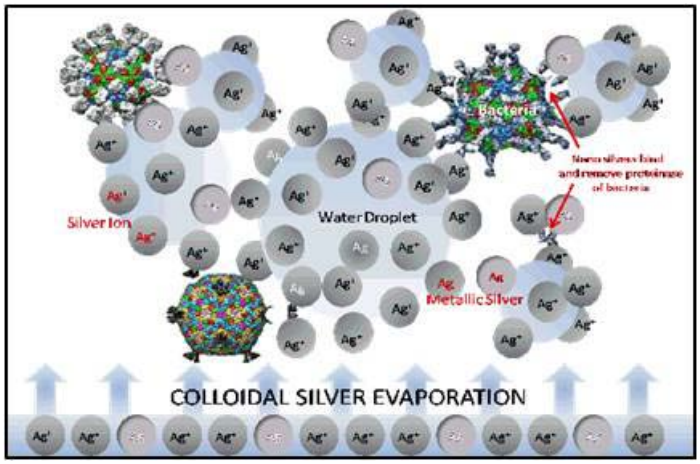
Reaction with Bacterial Cell Membranes:

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.



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.

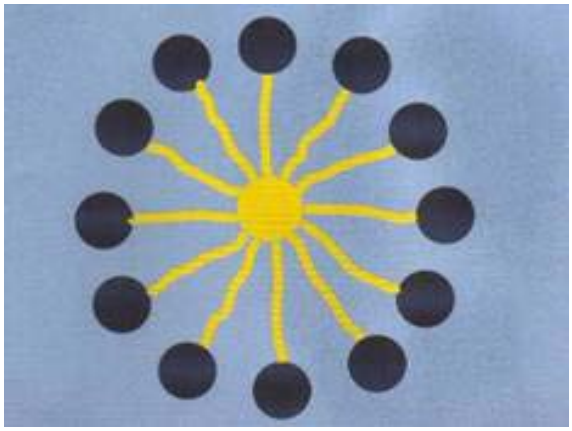


Illustration of Nano Biotech Colloidal Micelles.

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.

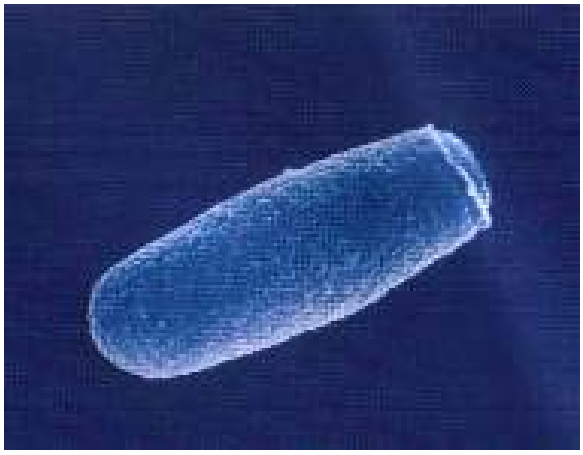
2. Inhibition of metabolic pathways

   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.

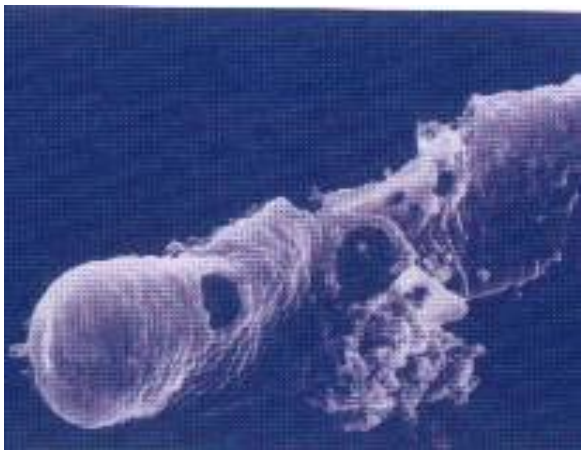
3. Disruption of cytoplasmic membranes

   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.*

Hunter's Deodorizer Spray

Animals have an excellent sense of smell that is generally much better than that of humans. Consequently, even a small amount of odor generated by humans during hunting and absorbed on clothing is easily detected by animals. This alarms animals and causes them to flee resulting in loss of hunting opportunities. Covering up human scent with perfumed deodorizers will not eliminate human body odors and only result in hunters and fishermen being detected more easily.

The Solution

Hunter's Deodorizer Spray (HDS) was specially developed to sterilize, neutralize and trap human scent during hunting. To make yourself undetectable to animals, simply spray Hunter's Deodorizer in your hunting boots, socks, hats, clothing and gear. This will truly eliminate human body and foot odor making it almost impossible for animals to detect hunters. This is sure to result in an advantage that will greatly increase hunting pleasure.

Hunter's Deodorizer Spray (HDS) is non-toxic, safe, natural, odorless, non-flammable and non-caustic. It is an ideal environmentally friendly solution for eliminating human scents without adding pollutants to the air you breathe. It does not contain VOCs, harmful or ozone depleting chemicals and is especially beneficial for those suffering from allergies and chemical sensitivity. All green ingredients are used in the production of our odor control formulation.

No Cover-up with Fragrance

Hunter's Deodorizer Spray (HDS) is a green ingredient deodorizer that can be used to eliminate unpleasant sweat odor and sterilizes microbial instead of merely masking them with fragrances. The formulation of HDS incorporates nano materials to form a powerful disinfectant with a combination of billions of nano biotech colloidal miscelles and nano colloidal silver. This gives HDS an enormous surface area to disinfect bacteria to eliminate odor.

Environmentally Friendly

HDS is non-toxic, safe, non-hazardous, natural, non-scented, non caustic, and non-flammable. It is an ideal environmentally friendly solution for eliminating body odor during hunting and fishing without adding pollutants to the air you breathe. ADG does not contain chemical additives and is especially beneficial for those suffering from chemical sensitivity.

Advantages

- Simply spray & notice the difference
- Eliminates human scent instead of covering them up
- Makes it difficult for animals & fish to detect humans
- Improves chances of hunting & fishing success
- Safe, non-toxic, natural, non-caustic, odorless
- Environmentally friendly & non-flammable
- Does not stain clothing, shoes, & other items
- Can be used during all types of hunting and fishing
- Eliminates sweat odor and sterilizes microbial during hunting.

Applications

Hunter's Deodorizer Spray (HDS) can be effectively used on all types of men's, women's, and children's clothing, boots, hats, socks, etc. to eliminate all types of body and foot odors during hunting and fishing.

Directions

To eliminate human scent, simply spray Hunter's Deodorizer Spray (HDS) throughout the body especially body areas that generate body odor. Spray HDS on each item that will be worn during hunting or fishing and notice the difference. For added odor protection, 4 tablespoons of HDS may also be added to hunting and fishing clothing while they are being laundered.