

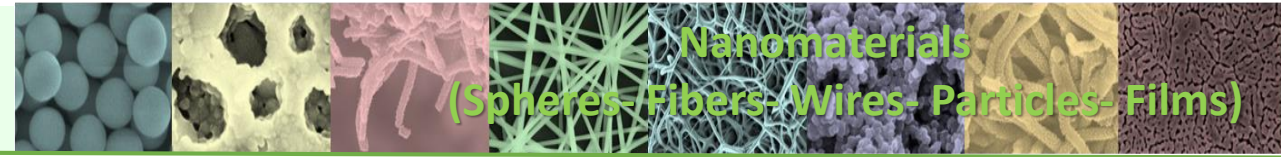
Water Based (Silver –Nano) Hand Sanitizer for Domestic and Industrial Applications

Nanomaterials for Industrial Applications



- Introduction
- Concept
- Properties
- Technical Features
- USP of Water based Hand Sanitizer
- Applications
- Applications sectors

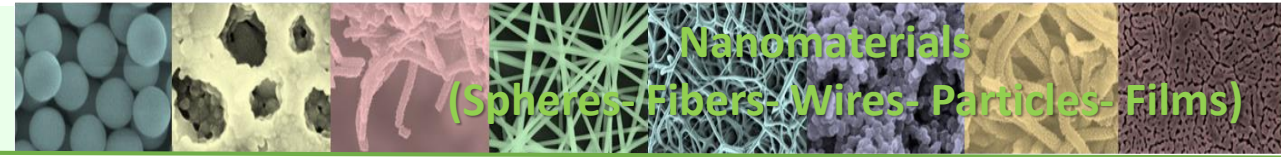




Advantages of water based (Silver –nano) Hand Sanitizer

- ✓ Water Based Silver sanitizer
- ✓ Kills Virus, Bacteria & Fungi
- ✓ Odourless (pH 7)
- ✓ Non flammable, non corrosive
- ✓ Easy to carry, no spillage
- ✓ Dries fast on hands
- ✓ Contains pleasant aroma
- ✓ Certified by NABL accredited Lab, Sri Ram Industrial Research Institute, Bangalore, Karnataka State, India
- ✓ Tested at Rajeev Gandhi Center for Biotechnology, Trivandrum, Kerala state, India





Unique Selling Proposition

Aqua Sil-San Water Based Hand Sanitizer Vs Alcohol Based Hand Sanitizer

- ✓ Kinder to skin- prevents drying up of hands
- ✓ Effective against spores like Candida species unlike alcohol based solution
- ✓ Offers residual antimicrobial activity for 3 to 4 hours
- ✓ Safer for use in closed areas like automobiles / near to ignition sources
- ✓ Environmental-friendly
- ✓ No storage restrictions
- ✓ Pleasant Aroma after application and dries fast in 20 secs (Sandal wood, Jasmine or Mint)



Facts about Germs

- ❑ Germs can survive for up to three hours on your hands
- ❑ There are between 2 to 10 million bacteria on your fingertips and elbows
- ❑ The number of germs on your fingertips doubles after you use the toilet
- ❑ When you don't wash your hands, you transfer germs to the food and drinks you eat
- ❑ One germ can multiply into more than 8 million germs in one day

Where do germs come from?

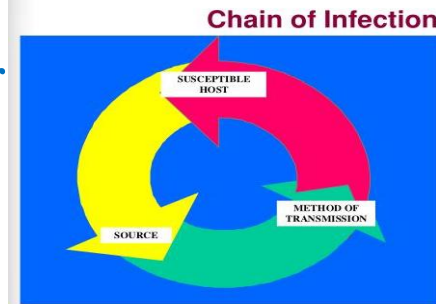
- Environment
 - surfaces
 - floors
 - gardens
- People
 - skin
 - intestines
- Equipment
 - Water
 - Flowers/plants

Places

We

Touch

every day



All links must be complete for an organism to spread from one place to another. Our goal is to break the chain in one or more links.

6 Hotspots for Germs

COMPUTER KEYBOARDS

Germs are at your fingertips when keyboards are infrequently cleaned. "Use disinfecting wipes on electronic items such as phones and computers, that are touched often," according to the U.S. Centers for Disease Control and Prevention.

COUNTERTOPS

Before and after every food item, wash cutting boards, countertops and utensils with hot soapy water, the CDC recommends.

PHONES

Holding your smartphone? Germs and bacteria are also on hold. Avoid placing phones on restroom counters and other surfaces.

TELEVISION REMOTES

At home or in hotels, television remotes are often used, but seldom cleaned. Clean with disinfecting wipes, if possible.

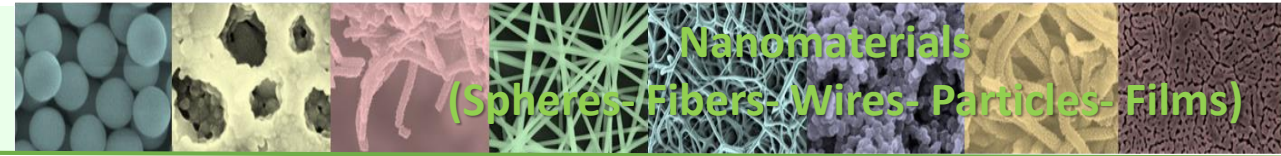
DOORKNOBS AND HANDLES

Doorknobs, elevator buttons and faucet handles are high-contact surfaces. Use caution.

PURSES AND WALLETS

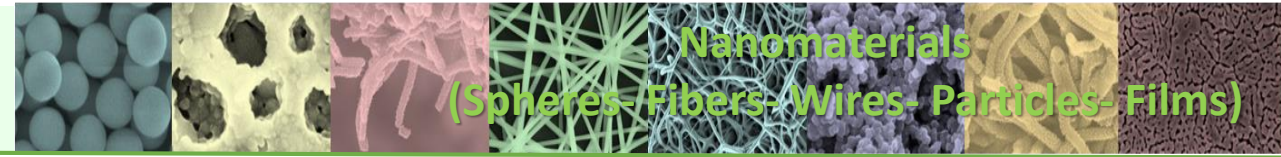
Don't place purses and bags on bathroom floors or countertops. Be cautious when in public or outdoors.

Baptist Health South Florida



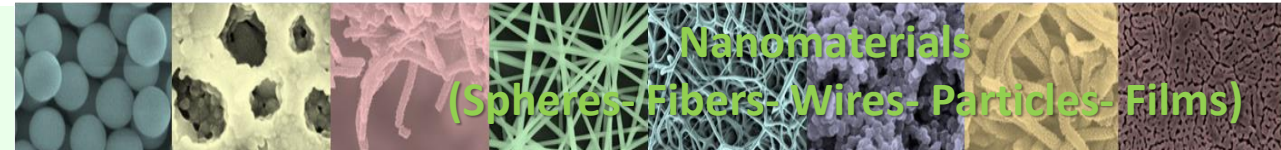
Alcohol-Free Hand Sanitisers

- ❑ This type of hand sanitiser is generally kinder to the skin as it contains emollients designed to moisturise the skin.
- ❑ This is ideal if you work in the healthcare sector where the product needs to be used on a regular basis throughout the day. Alcohol sanitisers are generally accepted as not being suitable for use against spores, such as *C.difficile*, whereas certain water-based sanitisers have been proven for use against a wide range of pathogens, including spores.
- ❑ Alcohol-free hand sanitisers can often be more cost effective as they usually use a measured foaming mechanism which often provides more applications per bottle.
- ❑ The antimicrobial compounds used in some alcohol-free sanitisers can offer residual antimicrobial activity for up to 4 hours after application. Alcohol-free hand sanitisers are gaining in popularity in healthcare settings.
- ❑ Alcohol-free sanitisers are suitable for use for all groups, including those who avoid alcohol for religious or personal reasons. Do not stain surfaces or clothing. Require no special storage provision.

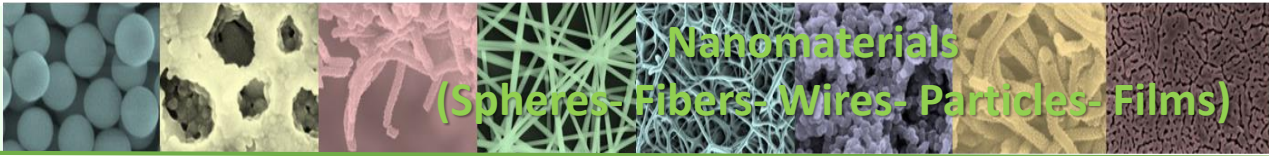


Alcohol Based Hand Sanitisers

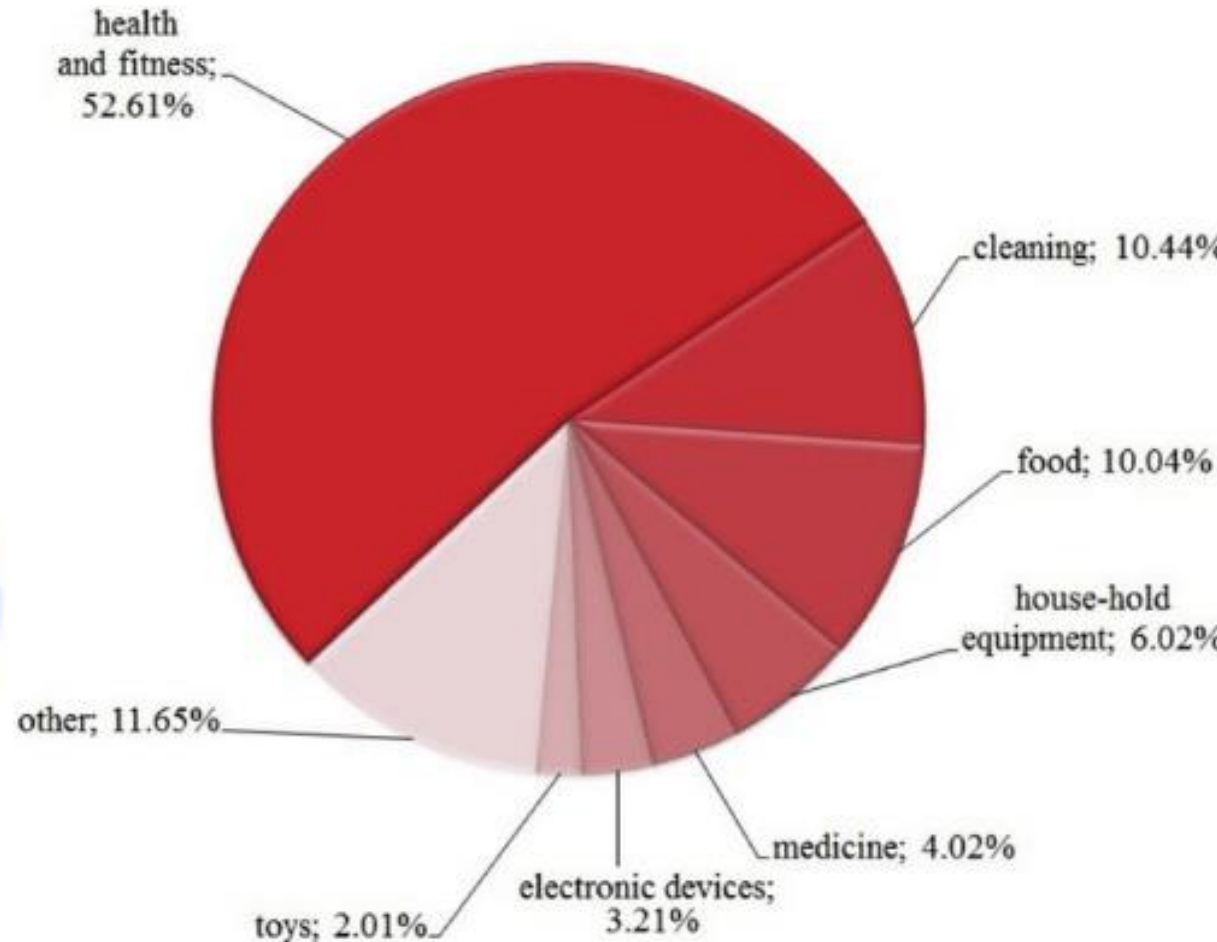
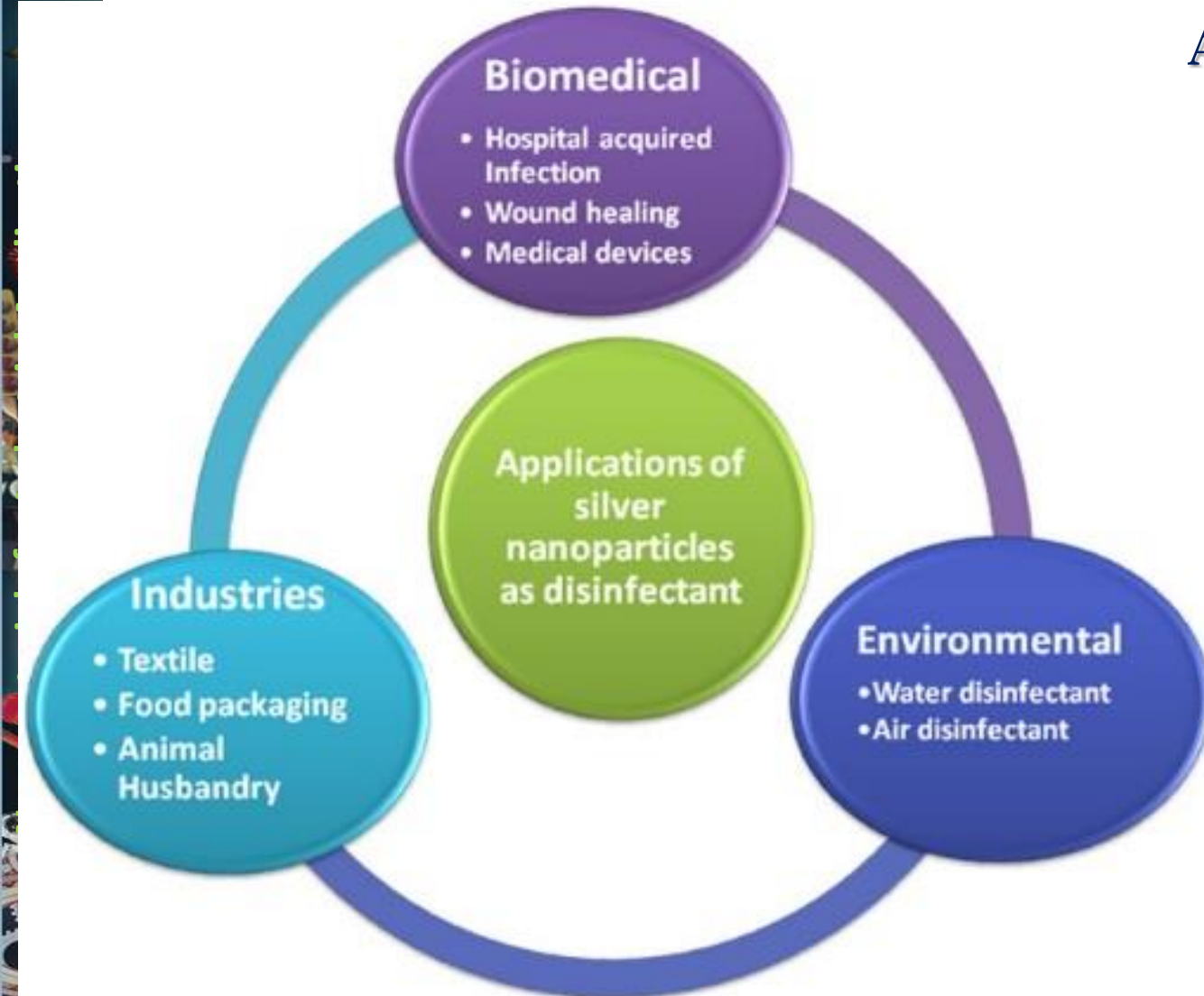
- Alcohol products have been shown to strip away the skin's natural sebum and lipids which are there to protect the surface of the skin. This can lead to dryness, dermatitis, and in some cases, bacterial infections.
- There tends to be less variance between brands as the formulations tend not to differ greatly.
- Alcohol provides quick kill rates, but it also evaporates quickly once on the skin, meaning most alcohol products cannot offer residual antimicrobial protection.
- There is a risk of alcohol poisoning if consumed, but generally alcohol sanitisers are considered safe when used as directed.
- Alcohol is only effective against a limited number of pathogens, and does not kill spores such as *C.difficile*.
- Alcohol sanitisers can present a fire risk / hazard and should be stored in a safe manner accordingly.



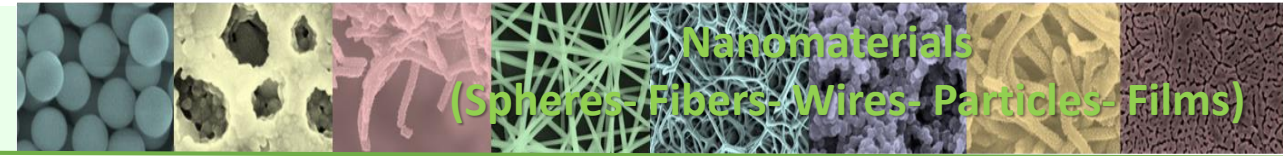
- ❑ In spite of the contemporary improvement of the hygiene in the biomedical (hospitals), education (school/colleges), surrounding environment (air/water), and industry (food/textile/animal husbandry); it is an increasingly important public health issue globally.
- ❑ In particular, the infectious diseases are the major challenges to the human being because of emerging >300 infectious diseases with a new adaptation.
- ❑ The microbial based infections are a key cause of the diverse infections because of which >50% people are dying in Africa due to a variety of infections.
- ❑ To overcome the various strategies have been used to reduce infections by using different disinfectant. The disinfectants are chemical substances applied on the surface to kill or inhibit microorganisms. It is an ideal way to disinfect various surfaces in hospitals, kitchens and in clinics. They are useful in our daily life because they particularly kill microorganisms without causing health hazards to human beings.
- ❑ In addition to that, they are abundant in quantity, efficient, a cheaper antimicrobial agent in short periods and unable to generate toxic compounds after their use. The various chemical compounds such as alcohols, quaternary ammonium cation, aldehydes, oxidizing agents such as sodium hypochlorite, hydrogen peroxides, iodine etc. have been used as disinfectant effectively.



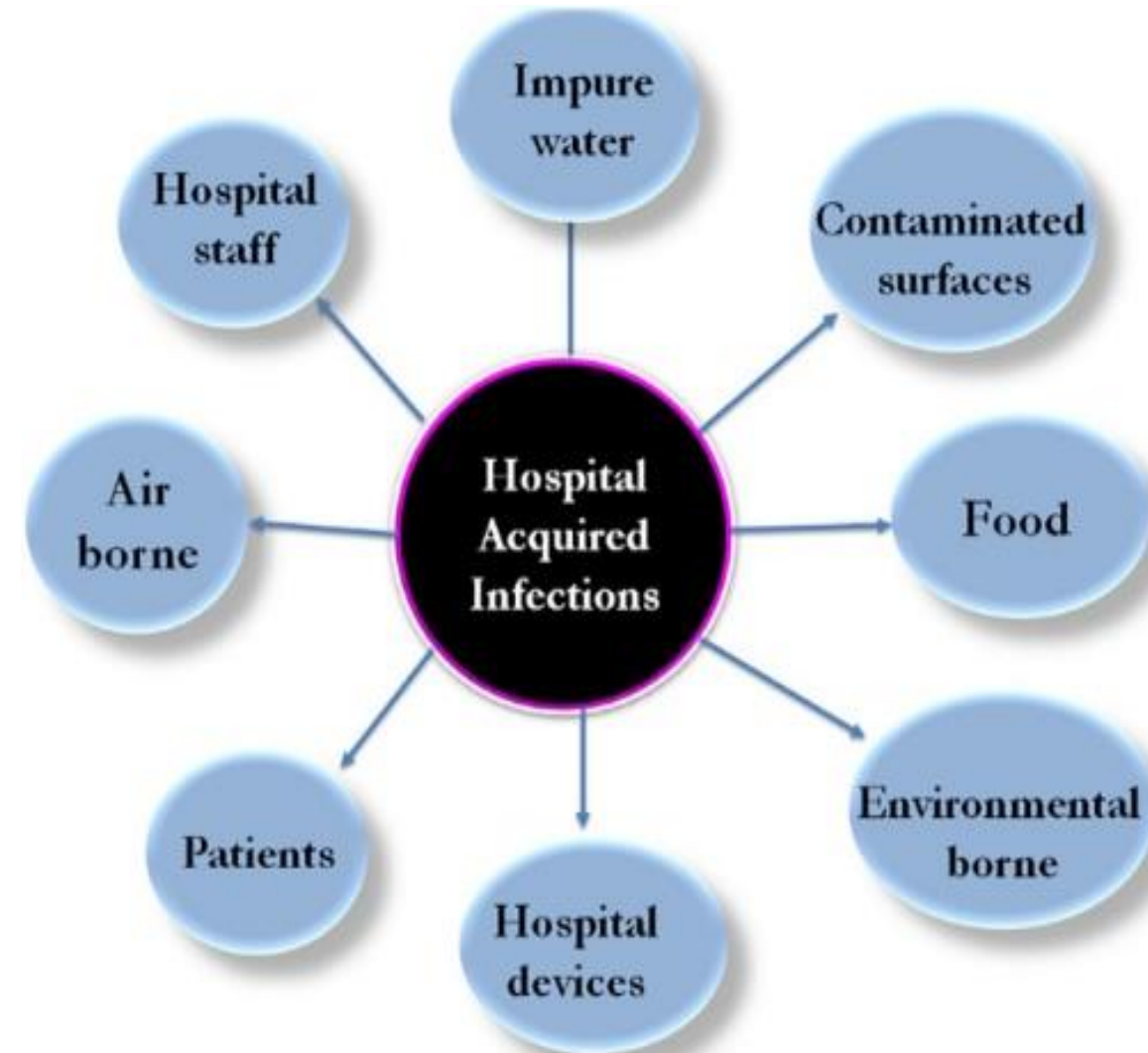
Applications of silver nanoparticles

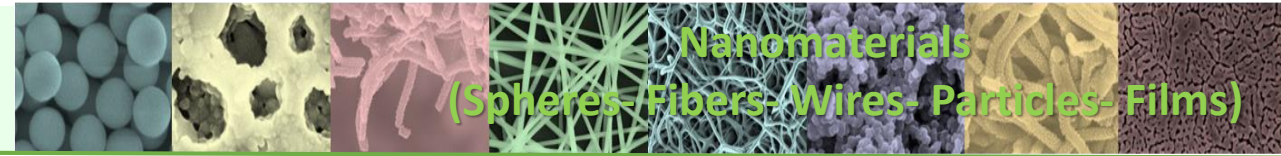


Contribution of silver nanoparticles in different sectors.



- ❑ Ag NPs are playing the crucial role in the air/water purifications, in biomedical fields as a therapeutic agent, textile consumer products as well as wound dressing.
- ❑ Its bactericide effects are observed on *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Bacillus cereus*, *Listeria innocua*, *Salmonella choleraesuis* bacteria due to higher toxic effect to the bacterial cells.
- ❑ Ag NPs have imparting broad scope to enhance efficiency by optimizing its physicochemical parameters, which also leads to greater binding capability with sulphur and phosphorous functionalized biomolecules of bacteria for killing the cells





Aqua Sil- San (Water based Hand Sanitizer) – Specification

PROPERTIES

Appearance

Solid content

Application Method

Surface dry time, minutes

Kills germs (bacterial/fungal/viral)

Packaging Size

RESULTS

Transparent Solution

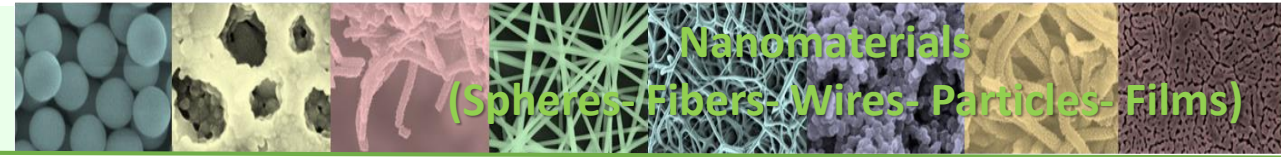
500 ppm of silver

Spray Bottle

10 seconds

99.9% in 60 seconds

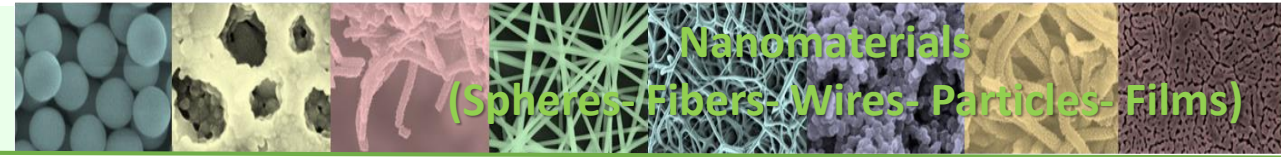
50 ml – Spray bottle



Water based (silver –nano) Hand Sanitizer

- Easy to spray
- Forms a very thin uniform long lasting film (3 to4 hours)
- Dries within 20 seconds
- Does not change aesthetic sense of the area
- Pleasant aroma (sandalwood / Jasmine / Mint)
- Handy and portable
- One of its kind product





Applications of water based (silver-nano) Hand Sanitizer in various sectors:

Sector-1: Individual Homes, Apartments, Villas, Resorts, Hotels, Restaurants, Temples (Government / Private)

Sector-2: Industrial sheds, Chemical / Pharma / Biotech companies solvent tanks, Cold storage sheds, Hospitals from various states, Ashrams, Schools (both Government and Private from different states)

Sector-3: Aquaculture, Horticulture, Poultry sheds, car show room sheds, Rice mills, brick industry sheds

Sector-4: Industrial roof shed Coil manufacturers, Asbestos Sheet manufacturers, Seeds storage sheds,

Sector-5: Middle east countries, African Countries, Turkey, Iran, Egypt, Australia, USA (southern part) and North American countries, Sri Lanka, Bangladesh, Burma, Thailand, Malaysia, Singapore, Philippines, etc.,

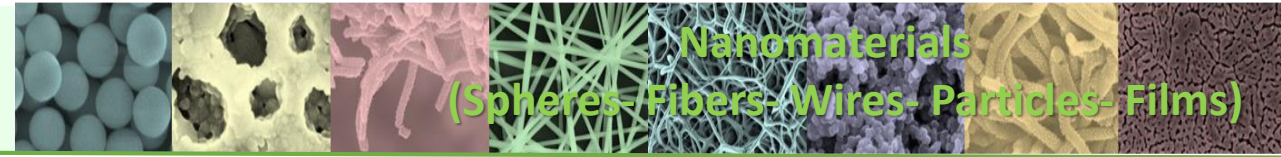
Sector-6: Direct approach of MSME (from different states)

Sector-7: Ceramic association, Metal association, Pharma parks, Industrial parks, Biotech parks, Malls roof tops

Sector-8: Containers in Harbour, Containers carrying cold items (prawns fish etc.,)

Sector-9: Defence, Air force, Naval – sheds, tents and other areas etc.,

Sector-10: Government: Airports roofs, Railways Sheds, compartments, Food corp. India (FCI) sheds, Buses and bus stands



**Make your space Eco friendly.....by using
Water based Hand Sanitizer**

Thank You for Your Kind Attention

Looking forward for fruitful Business...

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