Stop using Bleach

Try this...

We generate chlorine dioxide, the most powerful biocide “cleaner/deodorizer”, to decontaminate odor, bacteria, mold and mildew infestation in residential & commercial spaces

A patented proprietary micro reactor “pouch” generates small to large volumes of liquid & air release chlorine dioxide to achieve pathogen decontamination never seen before in odor/mold/mildew remediation
CHLORINE DIOXIDE AS AN ANTIMICROBIAL AGENT

Chlorine dioxide has been used widely as a disinfectant in drinking water and as a bleaching agent in the textile and paper industries. In these applications, chlorine dioxide is produced by the reaction of acid or chlorine gas with sodium chlorite using generators. The generated gas has varying degrees of purity depending on the generator type and its operation. Generators, regardless of capacity, are stationary systems limited in their use to a specific application site.

Applications requiring lower quantities of chlorine dioxide can be approached by the use of the so-called "stabilized chlorine dioxide". This terminology is actually a misnomer as in reality the stabilization refers to sodium chlorite (precursor of chlorine dioxide). "Stabilized chlorine dioxide" still requires activation of the sodium chlorite solution with an acid. This approach or any other "two-part system" is normally done at the application site requiring trained personnel to properly activate the product. In addition, the use of "stabilized chlorine dioxide" requires mixing equipment and the storage and manipulation of acids. Transportation of "stabilized chlorine dioxide" also involves large volumes of water resulting in a costly and difficult operation for remote uses.

The advent of "dry-media" chlorine dioxide has provided an efficient and easy-to-use method to generate solutions of chlorine dioxide. There are, however, several critical parameters, which must be considered when designing a truly effective device based on "dry-media" chlorine dioxide. Physical separation of the reactants as well as physical isolation of the device from the external environment is absolutely necessary to avoid a premature and unwanted reaction. Similarly, the reaction's conditions required for the optimum conversion of sodium chlorite to chlorine dioxide must be controlled to effectively dissolve the reactants and allow chlorine dioxide gas to dissolve in water.

The development of a proprietary device that uses membrane technology to achieve the following: (1) keep the reactants physically separated from each other, (2) isolate the reactants from the external environment, (3) allow sufficient water to dissolve the reactants and (4) allow chlorine dioxide gas to diffuse into water and/or air to produce a solution of chlorine dioxide. This device is called NosGUARD, Avanflex and TowerGUARD and consists of an engineered pouches constructed by using different types of different types membrane materials.
The patented “pouch” system combines the utilization of membrane technology with a custom made heat-sealing procedure resulting in a defined space identified as the Membrane Micro Reactor Chamber™ or M2RC™, or M2R where the reaction takes place. Within the M2RC™, the conversion of sodium chlorite to chlorine dioxide takes place through a step mass transfer mechanism. The design of this patented pouch provides a physical space (M2RC™) having a favorable environment for an efficient conversion of sodium chlorite to chlorine dioxide. This conversion results in an economical process for the production of chlorine dioxide with minimum amounts of unreacted species and undesired by-products.

Our product line of micro pouch reactor technology produces accurate concentrations of chlorine dioxide in a range from a few ppm's up to several thousands depending on specific applications and limitations. Therefore, OdorSCIENCE can bring you the ideal antimicrobial and sanitation agent in applications requiring precise amounts of a disinfectant capable of killing a broad spectrum of pathogens. Applications suitable for Our products even include cooling water treatment, food processing, drinking water disinfection and surface decontamination. Our invented technology platform also has a unique advantage in that it can be used in remote or isolated areas where electrical power is not available, thus being a truly.
Now let's scale it up or down for any space

Using our Proprietary Process & Formulations of ClO2

We can teach YOU to become a fully accredited professional decontamination/odor elimination specialist for consumers, business and natural disaster response.
Ardex will teach you to use the patented proprietary chemical compound delivery device (*the patented Micro-Reactor Pouch*) & the “use” protocols to achieve superior results in mold/mildew/odor/bacteria remediation in the air or any surface compared to any chemical compound or application now in use.
Highest Level Protection, Safe for People, Animals & the Planet

* 120 Years of proven powerful, safe chemistry.....now available for use through our patented, proprietary “pouch” technology.

* Safe to handle, no contact with any chemicals ever! No mixing!!!
CHLORINE DIOXIDE

Chemical formula: $\text{ClO}_2$

Stable free radical

Molecular weight: 67.45 g/mol

CAS number: 10049-04-4

Works over broad pH range, pH 2-10. Highly soluble in water as a gas.

Environmental friendly, decompose to salt and water after use.

Selective oxidation process, effective at lower dosage.

Effective as a bactericide, virucide, sporicide, fungicide, algacide, odor eliminator and biofilm removal.

Can not be compressed/shipped and needs to be generated onsite.
## Comparisons of Disinfectant Technologies

<table>
<thead>
<tr>
<th>Type of Application</th>
<th>Microbial Range</th>
<th>Dose</th>
<th>Contact Time</th>
<th>pH</th>
<th>Corrosion</th>
<th>Toxicity</th>
<th>Environmental Impact</th>
<th>Cost</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine Dioxide</td>
<td>Sanitizer, disinfectant, sterilant</td>
<td>Effective against all types of microorganisms (e.g. <em>Giardia</em> and <em>Cryptosporidium</em>)</td>
<td>0.1 ppm-100 ppm</td>
<td>Seconds-minutes</td>
<td>Neutral, little activity change b/w pH 4-10</td>
<td>Not corrosive at use concentration</td>
<td>May cause skin and respiratory irritation after prolonged exposure at &gt; 0.3 ppm in air</td>
<td>CIO₂ and byproducts readily reduce to environmentally safe chloride ions</td>
<td>Moderate</td>
</tr>
<tr>
<td>Ozone</td>
<td>Sanitizer, disinfectant, Sterilant</td>
<td>Effective against all types of microorganisms</td>
<td>0.1 ppm-10 ppm</td>
<td>Seconds-minutes</td>
<td>Neutral, extremely unstable in alkaline solution</td>
<td>Marginally corrosive to plastic, iron and some grades of stainless steel</td>
<td>&gt; 0.25 ppm in atmosphere is injurious to human health</td>
<td>Readily decompose to oxygen in environment</td>
<td>Very high, require ozone generator</td>
</tr>
<tr>
<td>Peroxidic Acid</td>
<td>Sanitizer, disinfectant, sterilant</td>
<td>Effective against all types of microorganisms</td>
<td>10 ppm to 1% range</td>
<td>Minutes-hours</td>
<td>Acidic, ineffectiveness in alkaline solution</td>
<td>Corrosive to metal surface after prolonged exposure</td>
<td>Negligible at use concentration</td>
<td>Readily decompose to acetic acid, hydrogen peroxide, water and oxygen</td>
<td>Moderate</td>
</tr>
<tr>
<td>Hydrogen Peroxide</td>
<td>Sanitizer, disinfectant, sterilant</td>
<td>Broad spectrum if use at high concentration</td>
<td>Usually in 1% range</td>
<td>Generally 15 minutes to several hours</td>
<td>Neutral, little activity change with pH</td>
<td>Highly corrosive to aluminum, iron, and zinc</td>
<td>May be very irritating to the skin and tissues at use concentrations.</td>
<td>Readily decomposes to water and oxygen</td>
<td>Relatively low--higher concentration require expensive storage and handling procedures</td>
</tr>
<tr>
<td>UV Lights</td>
<td>Disinfectant</td>
<td>Bactericidal, viricidal, not effective against <em>Giardia</em> and <em>Cryptosporidium</em></td>
<td>At least 140 W-sec/cm²</td>
<td>Depends on flow rate and UV intensity, seconds to minutes</td>
<td>Not affected by pH</td>
<td>No corrosive</td>
<td>Relatively safe, worker exposure to UV light must be minimized.</td>
<td>No disinfection byproducts</td>
<td>Moderate</td>
</tr>
<tr>
<td>Hypochlorites</td>
<td>Sanitizer, disinfectant</td>
<td>Bactericidal; ineffective against viruses, molds, fungi, and spore-forming organisms</td>
<td>1000 ppm --%</td>
<td>Minutes to hours</td>
<td>Alkaline</td>
<td>Corrosive to metals</td>
<td>Highly corrosive to tissues.</td>
<td>Will clorinate natural organic matter to form carcinogenic byproducts</td>
<td>Low</td>
</tr>
</tbody>
</table>
## Comparisons Of Disinfectant Technologies pg. 2

<table>
<thead>
<tr>
<th>Type of Application</th>
<th>Microbial Range</th>
<th>Dose</th>
<th>Contact Time</th>
<th>pH</th>
<th>Corrosion</th>
<th>Toxicity</th>
<th>Environmental Impact</th>
<th>Cost</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>Sanitizer, disinfectant</td>
<td>Bactericidal, ineffective against viruses, molds, fungi, and spore-forming organisms</td>
<td>Few ppm to %, depending on compound</td>
<td>Minutes to hours</td>
<td>Neutral to alkaline</td>
<td>Corrosive to aluminum and iron</td>
<td>Highly irritating to skin and mucous membranes. Chlorine leaks can result in fatal injury.</td>
<td>Will chlorinate natural organic matter to form carcinogenic byproducts</td>
<td>Low</td>
</tr>
<tr>
<td>Quaternary Ammonium</td>
<td>Surface Sanitizer</td>
<td>Relatively ineffective against some bacteria and spore-forming microorganisms</td>
<td>100 ppm to %</td>
<td>Minutes to hours</td>
<td>Acidic to neutral</td>
<td>Corrosive at higher levels</td>
<td>May cause severe skin irritation at higher concentrations. Non-toxic at diluted concentrations</td>
<td>Poor for most formulations</td>
<td>Moderate</td>
</tr>
<tr>
<td>Glutaraldehyde</td>
<td>Sanitizer, disinfectant, sterilant</td>
<td>Bactericidal, sporicidal, virucidal</td>
<td>200 ppm to %</td>
<td>Minutes to hours</td>
<td>Acidic to basic, depending on degree of polymerization and temperature</td>
<td>Negligible</td>
<td>Exposure can be toxic to workers. Inadequate rinsing of medical instruments can cause toxicity in patients.</td>
<td>Can be adequately degraded if held for 2-3 weeks before release to environment.</td>
<td>Moderate to high</td>
</tr>
<tr>
<td>Phenolic compounds</td>
<td>Sanitizer</td>
<td>Bactericidal, effective against some viruses, not effective against some spores.</td>
<td>100 ppm to %</td>
<td>Minutes to hours</td>
<td>Acidic to neutral</td>
<td>Higher concentrations can cause corrosion in iron and stainless steel</td>
<td>Low to high toxicity depending on derivative</td>
<td>Low to high ecotoxicity depending on derivative</td>
<td>Moderately high</td>
</tr>
<tr>
<td>Iodophors</td>
<td>Sanitizer, disinfectant</td>
<td>Bactericidal</td>
<td>25 ppm to %</td>
<td>Minutes to hours</td>
<td>Acidic to neutral</td>
<td>Acid products may be corrosive to iron and steel. Staining of surface or instrument after repeated use.</td>
<td>Low toxicity for topical use. Can cause thyroid impairment in neonates; not recommended for pregnant women. Iodine vapor is an irritant to eyes and skin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparison to Chlorine and Bleach

Avanflex (a chlorine dioxide product) vs. sodium hypochlorite
Used for years in water purification and in swimming pools, chlorine dioxide is a more potent and much more selective oxidizer than bleach (sodium hypochlorite), so therefore it is much less affected by organic contamination.

For instance, 10 parts of bleach chlorine are destroyed by 1 part of ammonia. In contrast, chlorine dioxide is unaffected by ammonia, and so is potentially an effective weapon in the superbug war.

However, there is a problem.

Chlorine dioxide is a very reactive chemical, an electron scavenger, and so is usually generated by special equipment when and where it is required. UNTIL NOW!

THE POUCH
The ideal material is one which is stable, easily stored, and can be activated, ready for use, (only with humidity) when needed.
Avanflex is highly effective against a wide range of organisms, including the SUPERBUGS:
* Clostridium difficile
* MRSA
* Noro virus
To set the C. difficile results in perspective, a standard European test for sporicides (with a more innocuous test organism) requires, for a disinfectant to pass the test, a 3 log (i.e. 1000 fold) reduction in spore count, in one hour's exposure.*

Avanflex, against actual C. difficile spores, achieves 5 to 6 logs (i.e. 100,000 to 1 million-fold reduction) in 5-7 minutes at 1:400 dilution.

Some typical results for Difficil-S

<table>
<thead>
<tr>
<th>Species</th>
<th>Log Reduction</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. difficile</td>
<td>5-6</td>
<td>5 - 7 minutes</td>
</tr>
<tr>
<td>MRSA</td>
<td>6-7</td>
<td>1 minute</td>
</tr>
<tr>
<td>Noro virus</td>
<td>6</td>
<td>5 minutes</td>
</tr>
</tbody>
</table>
Other susceptible organisms:
- *Salmonella typhimurium*
- *Proteus vulgaris*
- *E. coli (Escherichia coli)*
- *Candida albicans*
- *Corynebacterium phyogenes*
- *Listeria monocytogenes*
- *Salmonella enteritidis*
- *Pseudomonas aeruginosa*
- *Aspergillus niger*

*Test method BS EN 13704:2002*

The Centers for Disease Control and Prevention (CDC) defines the three levels of disinfection in its "Guidelines for the Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Healthcare and Public-Safety Workers."

**High-level disinfection** can be expected to destroy all microorganisms, with the exception of high numbers of bacterial spores.

**Intermediate-level disinfection** inactivates *Mycobacterium tuberculosis*, vegetative bacteria, most viruses, and most fungi, but it does not necessarily kill bacterial spores.

**Low-level disinfection** can kill most bacteria, some viruses, and some fungi, but it cannot be relied on to kill resistant microorganisms such as tubercle bacilli or bacterial spores.

Sodium Hypochlorite (bleach) is considered a low-level disinfectant. Chlorine Dioxide is considered a High-level disinfectant. Capable of all viruses and spores. Here are some other high-intermediate low-level & intermediate-level disinfectants versus chlorine dioxides.

Alcohols demonstrate variable effectiveness against some bacterial and fungal species. They are good general-use disinfectants that are fast acting, leave no residue, and compatibly combine with other disinfectants (quaternaries, phenolics, and iodine) to form tinctures.

Aldehydes are effective against a wide spectrum of bacteria and viruses, are sporicidal when used properly (10-hour contact period), and demonstrate activity against vegetative bacteria, spores, and viruses.

Activated Glutaraldehyde requires limited and controlled use because of its toxic properties. It must only be used while wearing a ventilated hood. It has limited stability after activation (for alkaline glutaraldehyde).

Chlorine Dioxide are used as sanitizers, disinfectants and sterilants. Effective against all types of microorganisms. Broad spectrum Ph. Seconds to minutes contact time. Not corrosive at use concentrations. ClO₂ and byproducts are readily reduced to environmentally safe chloride ions.

Chlorine compounds are good disinfectants for the clean-up of blood or body-fluid spills. They have a biocidal effect on *M. tuberculosis*, *S. aureus*, other vegetative bacteria, and HIV after 10-20 minutes, 1:5 dilution (250 ppm) for bacterial spores and mycobacteria. Diluted chlorine bleach stored at room temperature in a closed plastic container.
will deteriorate by one half after one month, neutralizes rapidly in the presence of organic matter, is good for decontamination of HBV, HCV, HIV, and the clean-up of biohazardous spills. Undiluted bleach is good for surface disinfecting after possible contamination with the CJD virus; however NIH recommends 1.0 N NaOH.

Iodophor is effective against vegetative bacteria and viruses. It demonstrates poor activity against bacterial spores, however it has a rapid biocidal action. It is effective against Gram-negative and Gram-positive organisms, some viruses, and tubercle bacilli, and is most effective in acid solutions. It can vaporize at 120° F to 125° F (should not be used in hot water), and its effectiveness can be reduced by organic matter. It is stable in storage if kept cool and tightly covered. It is still active if the solution is brown or yellow. Mercurials demonstrate poor activity against vegetative bacteria and are not effective on spores. They are toxic and not recommended for use.

Phenolic compounds are effective against vegetative bacteria, fungi, and lipid-containing viruses. They have low solubility in water, are stable in storage, are germicidal against Gram-negative and Gram-positive organisms and tubercle bacilli, are effective over a large pH range, and have limited sporicidal activity. Prolonged contact deteriorates rubber, and can cause skin and eye irritation. Not for use on food-contact surfaces.

Quaternary ammonium compounds are acceptable to control vegetative bacteria and non-lipid-containing viruses. They are stable in storage, have no odor but act as deodorizers. They are non-irritating to skin but skin or eye contact should be avoided. They are effective at temperatures up to 212° F, are effective against Gram-positive organisms, are bacteriostatic in high dilutions, are ineffective against tubercle bacilli, spores, and viruses, are more effective in alkaline than acid solutions, are neutralized by soap, and their effectiveness is reduced by organic material.

To Recap, Chlorine Dioxide is the best broad spectrum biocide available and now can be used at the point of use in healthcare and home.

More effective decontamination—works against a wide variety of bacteria, yeasts, viruses, fungi, protozoa, spores, molds, mildews and other microbes.

Shorter contact time—rapid kill of target organisms, often in seconds.

Minimal corrosion.

Low toxicity.

Biodegradability in the environment.

Does not generate harmful byproducts.

Unique in its ability to deliver mg to kg quantities of chlorine dioxide without costly training or equipment.

Effectively performs in low concentrations over a wide range of pH levels.

Chlorine dioxide is approximately 10 times more soluble in water than chlorine.

By comparing the oxidation strength and oxidation capacity of different disinfectants, one can conclude that chlorine dioxide is effective at low concentrations. Chlorine dioxide is not as reactive as ozone or chlorine and it only reacts with sulphuric substances, amines and some other reactive organic substances. In comparison to chlorine and ozone, less chlorine dioxide is required to obtain an active residual disinfectant. It can also be used when a large amount of organic matter is present.
Availability of chlorine per mol weight. Chlorine is a much more powerful oxidant than chlorine or any hypochlorite.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Available chlorine (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorine (Cl₂)</td>
<td>100</td>
</tr>
<tr>
<td>bleaching powder</td>
<td>35-37</td>
</tr>
<tr>
<td>calcium hypochlorite (Ca(ClO)₂)</td>
<td>99,2</td>
</tr>
<tr>
<td>commercial calcium hypochlorite</td>
<td>70-74</td>
</tr>
<tr>
<td>sodium hypochlorite (NaOCl)</td>
<td>95,2</td>
</tr>
<tr>
<td>industrial bleach</td>
<td>12-15</td>
</tr>
<tr>
<td>household bleach</td>
<td>3-5</td>
</tr>
<tr>
<td>chlorine dioxide</td>
<td>263,0</td>
</tr>
<tr>
<td>monochloramine</td>
<td>137,9</td>
</tr>
<tr>
<td>dichloramine</td>
<td>165,0</td>
</tr>
<tr>
<td>trichloramine</td>
<td>176,7</td>
</tr>
</tbody>
</table>

Does chlorine dioxide oxidize in the same way as chlorine?
Contrary to chlorine, chlorine dioxide does not react with ammonia nitrogen (NH₃) and hardly reacts with elementary amines. It does oxidize nitrite (NO₂⁻) to nitrate (NO₃⁻). It does not react by breaking carbon connections. No mineralization of organic substances takes place. At neutral pH or at high pH values, sulphuric acid (H₂SO₃) reduces chlorine dioxide to chlorite ions (ClO₂⁻). Under alkaline circumstances chlorine dioxide is broken down to chlorite and chlorate (ClO₃⁻):

Advantages
The interest in the use of chlorine dioxide as an alternative for or addition to chlorine for disinfection has increased in the last few years. Chlorine dioxide is a very effective bacterial disinfectant and it is even more effective than chlorine for the disinfection of water that contains viruses. Chlorine dioxide has regained attention because it is effectively deactivates the chlorine-resistant pathogens Giardia and Cryptosporidium. Chlorine dioxide removes and prevents bio film. Disinfection with chlorine dioxide does not cause odor nuisance. It destroys phenols, which can cause odor and taste problems. Chlorine dioxide is more effective for the removal of iron and manganese than chlorine, especially when these are found in complex substances.

Does chlorine dioxide form chlorinated disinfection byproducts?
The use of chlorine dioxide instead of chlorine prevents the formation of harmful halogenated disinfection byproducts, for example trihalomethanes and halogenated acidic acids. Chlorine dioxide does not react with ammonia nitrogen, amines or other oxidizable organic matter. Chlorine dioxide removes substances that can form trihalomethanes and improves coagulation. It does not oxidize bromide into bromine. When bromide containing water is treated with chlorine or ozone, bromide is oxidized into bromine and hypobromous acid. After that these react with organic material to form brominated disinfection byproducts, for example bromoform.

Is the chlorine dioxide concentration needed for sufficient disinfection high?
The use of chlorine dioxide reduces the health risk of microbial pollutions in water and at the same time decreases the risk of chemical pollutions and byproducts. Chlorine dioxide is a more effective disinfectant than chlorine, causing the required concentration to kill microorganisms to be much lower. The required contact time is also very low.
Disadvantages For Small and Medium Scale Application

- Capital costs
- Training
- Safety
- Maintenance
- Regulatory permits
- Transportation costs
- Disposal
<table>
<thead>
<tr>
<th>NosGUARD™ - APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car/bus/RV interior deodorization</td>
</tr>
<tr>
<td>Hotel tobacco smell removal</td>
</tr>
<tr>
<td>Extend shelf life of cut flowers</td>
</tr>
<tr>
<td>Fire and flood remediation</td>
</tr>
<tr>
<td>Hunting gears/clothes scene removal</td>
</tr>
<tr>
<td>Sport body armor odor control</td>
</tr>
</tbody>
</table>
ClO₂ SOLUTION DELIVERY SYSTEM

**Avanflex™**

Self-activate to generate ClO₂ solutions. Neutral pH solution, non corrosive as ClO₂ generated with acid.

Multifunctional uses on surfaces as:
- Deodorizer
- Disinfectant
- Sanitizer
- Sterilizer

Fast acting, effective at low usage concentration.

Effective against biofilm, and kill bacteria hiding underneath it.

Avanflex™'s ClO₂ solution can be used for mopping, spraying, soaking, dipping and flooding.
### AVANFLEX™ – EFFICACY AT DIFFERENT USE CONCENTRATION

<table>
<thead>
<tr>
<th>5 ppm</th>
<th>100 ppm (Disinfectant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spraying or dipping to reduce spoilage microorganisms, extend freshness and shelf life of raw agricultural commodities (e.g., fruit and vegetable)</td>
<td>Salmonella choleraesuis</td>
</tr>
<tr>
<td></td>
<td>Staphlococcus aureus</td>
</tr>
<tr>
<td></td>
<td>Pseudomonas aeruginosa</td>
</tr>
<tr>
<td></td>
<td>Methicillin-resistant S. aureus (MRSA)</td>
</tr>
<tr>
<td></td>
<td>Corona virus</td>
</tr>
<tr>
<td></td>
<td>Hepatitis A</td>
</tr>
<tr>
<td></td>
<td>Mycobacterium bovis (TB)</td>
</tr>
<tr>
<td></td>
<td>HIV-1</td>
</tr>
<tr>
<td></td>
<td>Poliovirus-1</td>
</tr>
<tr>
<td></td>
<td>Rotavirus</td>
</tr>
<tr>
<td></td>
<td>Feline Calicivirus</td>
</tr>
<tr>
<td></td>
<td>Trichophyton mentagrophytes</td>
</tr>
<tr>
<td></td>
<td>Enterrococcus faecalis</td>
</tr>
<tr>
<td></td>
<td>Influenza A virus</td>
</tr>
</tbody>
</table>

**20-50 ppm (Sanitizer)**

- *Salmonella typhimurium*
- *E. Coli*
- *E. Coli O157:H7*
- *Staphlococcus aureus*
- *Klebsiella pneumonia*
- *Penicillium digitatum*
- *Fusarium solani*
- *Botrytis Sp*
AVANFLEX™ – APPLICATION

Hospital/clinic/nursing home - surfaces sanitation and disinfection

Sport/gym facility - odor control and sanitation

Hotel bathroom - odor control and sanitation

Industrial shipping container - sanitation and disinfection.

Household - severe odor and mold/mildew removal

Food processing facility - extend produce freshness and sanitizer

Animal facilities- odor control, sanitation and disinfecction

Disaster area - surface sanitation and disinfection

Emergency and non-emergency water fountain  biofilm removal and disinfection
Managing Odor and Hygiene by Testing for Surface & Air & Indoor VOC Air Contamination
Important Documents

- NosGUARD SG Mold/Mildew Odor Control MSDS
- NosGUARD SG Mold/Mildew Odor Control EPA Registration Label
- Avanflex MSDS
- BBL Distributors Product Liability Insurance