

Hot Zone Bulletin



SUBJECT: BLEACH – NO LONGER THE UNIVERSAL DISINFECTANT

For many years bleach, or sodium hypochlorite, has been used as an inexpensive universal disinfectant. Over the last few years the EPA has put pressure on bleach manufacturers, including the large national brands, to discontinue promoting bleach as an antimicrobial unless the product is tested and properly registered for efficacy. The following provides an overview for the distribution and use of bleach.

1. **Bleach As a Cleaner:** Bleach has virtually no surfactant base so, a second solution will be needed to preclean the surface.
2. **Bleach As a Disinfectant:** The EPA now requires that any product, including bleach, that makes specific kill claims, be thoroughly tested for efficacy, registered and properly labeled. Unlike quaternary disinfectants and sanitizers, bleach does not have a residual surface presence.
3. **Stability:** Commercial bleach can be very unstable in that the active ingredient (sodium hypochlorite) will dissipate over a very short period of time. The manufacturer may use a 10% solution of sodium hypochlorite to water but, by the time the product reaches the consumer, the actual active may reduce to 5%.
4. **Conflicting Chemistries:** One of the most dangerous aspects of bleach is its incompatibility to so many other cleaning chemicals. Mixing bleach with other cleaning solutions containing acids, pine oils, etc. can result in either the release of a toxic gas and in more serious situations an explosive chemical reaction.
5. **An Economical Alternative:** This is the biggest myth surrounding the use of bleach. Since bleach can sell for as low as \$2.00 per gallon the user believes that this is a good economic value. To realize the full effect of bleach's active ingredients it should be used 1-to-1 or full strength. EPA Registered Sanitizer, on the other hand, is effective at ¼ ounce per gallon. Even at \$10.00 per gallon Sanitizer is actually a more economical value when diluted as directed (\$10.00 divided by 128 ounces = .078 per ounce. At a use dilution of ¼ ounce per gallon, the use cost per gallon is .02 or .005 per 32-ounce surface spray bottle). Which is the better value, bleach or EPA Registered Sanitizer?
6. **Surface Damage:** Bleach is extremely aggressive to many surface materials, including vinyl, upholstered surfaces, most carpet fibers, and certain metals.
7. **Hazards to Humans:** It is well documented that sodium hypochlorite is a known carcinogen. It can also irritate skin and permanently damage eyes.
8. **Hazard to Animals:** Bleach is still used by many animal hospitals and other animal care facilities. In addition to the potential hazards listed above, bleach has a negative impact on an animals' olfactory system (ability to smell). For cats the problem is, if they can't smell what they eat they won't eat it. This is especially true with large cats in the zoo environment. For dogs, the problem is more prevalent in working canines (police dogs) where the loss of smell can effect their ability to track suspects, detect drugs and explosives, etc.
9. **Bleach and Food:** Bleach (sodium hypochlorite) will naturally expand in its container. To prevent the container from exploding (especially gallon containers), the manufacturer will use a vented cap to allow the gas to escape into the air. This gas, in a confined environment like a delivery truck and/or storage closet, does have the capability of permeating surrounding surfaces, such as cardboard, paper bags, etc. thus creating a potential for the contamination of food products.