

Guidelines for the Use of Bleach

Sodium hypochlorite is the chemical compound commonly known as bleach. Bleach is utilized as a component of the cleaning and disinfection protocol for many animal hospitals, shelters, and spay-neuter clinics. It is well-known for its ability to kill many bacteria, viruses and fungal hyphae (and at proper dilution, fungal spores). It is especially helpful for its ability to kill non-enveloped viruses, such as Canine Parvovirus, Feline Panleukopenia and Feline Calicivirus. The following guidelines should be followed when using bleach as a disinfectant to ensure its effectiveness:

1. Bleach must be applied to a surface that has previously been cleaned with an appropriate detergent. Bleach is solely a disinfectant and can be inactivated by microscopic organic debris. It is also inactivated by the presence of soap and detergents, so care must be taken to completely rinse all detergent residues from the surface prior to applying bleach. Additionally, the surface should be dry so as not to further dilute the bleach solution.

Bleach can safely be mixed with quaternary ammonium compounds that contain detergents, such as A-33 and Roccal to create a single solution with both cleaning and disinfecting properties. Bleach should be diluted as described below using the quaternary ammonium solution in place of water.

2. A 1:32 solution of regular household bleach (5.25% sodium hypochlorite) is appropriate for daily use. Bleach solutions at concentrations less than this may not be effective. Bleach solutions at concentrations greater than this will cause facility corrosion and respiratory tract irritation in both people and animals.

This is equivalent to:

- ½ cup of bleach per gallon of water, or
- 1 ounce (30 ml) of bleach per 32 ounces of water.

For bleach products containing more than 5.25% sodium hypochlorite, the following formula can be used to determine the appropriate dilution:

$$21 \div \% \text{ bleach} = \text{ounces of bleach per gallon of water.}$$

For periodic deep cleaning and for the purpose of killing fungal spores (e.g. ringworm), bleach should be diluted with water at a concentration of 1:10.

This is equivalent to:

- 1 ½ cups of bleach per gallon of water, or
- 3 ounces (90 ml) of bleach per 32 ounces of water.

Animals must be removed from the area and people should wear appropriate personal protective equipment when using 1:10 bleach solutions.

3. Bleach solutions should be stored in opaque containers and must be made fresh at a minimum of every 24 hours. Bleach rapidly degrades in the presence of light and when mixed with water.

4. Bleach solutions require a full 10 minutes of contact time to ensure complete disinfection. If bleach solution evaporates in less than 10 minutes, a greater volume of solution should be applied. When used in combination with quaternary ammonium compounds, contact time for proper disinfection should begin after the surface is cleaned.