

Sodium Hypochlorite Bleach as A Disinfectant against Hantavirus

The following published source provides authoritative documentation regarding the efficacy of sodium hypochlorite (5.25% household bleach) as a disinfectant against Hantavirus:

http://www.cdc.gov/ncidod/diseases/hanta/hps_stc/stc_clean.htm

CDC's website recommends the use of diluted bleach to clean up and disinfect areas with rodent infestation. *When you begin cleaning, it is important that you do not stir up dust by sweeping or vacuuming up droppings, urine, or nesting materials. Wear rubber, latex, vinyl, or nitrile gloves when cleaning urine and droppings. Spray the urine and droppings with a disinfectant or a [mixture of bleach and water](#) and let soak 5 minutes. The recommended concentration of bleach solution is 1 part bleach to 9 parts water. Use a paper towel to pick up the urine and droppings, and dispose of the waste in the garbage. After the rodent droppings and urine have been removed, disinfect items that might have been contaminated by rodents or their urine and droppings.* (See Pages 1 & 2)

<http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/bleach.htm>

Special Pathogens Branch recommends a 10% bleach solution be used to inactivate hantaviruses. A 10% solution corresponds to 1 and a half cups of household bleach per gallon of water, or 1 part bleach to nine parts water.

Why a 10% solution? Household bleach is made of 5.25% Sodium Hypochlorite (52,500 ppm); therefore, a 1% bleach solution is 525 ppm. Some experiments have shown that 200 ppm (or even less in some experiments) will inactivate most viruses. Therefore it would seem that a 1% solution of household bleach might be adequate. However, hypochlorite is substantially and quickly inactivated in the presence of organic matter. So, although 1% may be adequate for surface decontamination, a 10% dilution may be a better choice for inactivation of virus when one is cleaning out areas which have been infested by rodents. This 10% concentration is currently supported in CDC Infection Control recommendations.

Amount of Hypochlorite Solution

No matter what concentration of solution is used, only the outside layer of the material to be disinfected is bound with the chlorine molecules in the bleach solution, unless the object is entirely soaked through. Complete soaking is more easily achieved when greater quantities of water are used. Therefore, it is recommended that the material being sprayed or poured over be thoroughly drenched, in order to maximize penetration of the material.