



# Cleaning and Disinfection Protocol for Enveloped Viruses

*This document has been developed in accordance with current applicable infection control and biosecurity guidelines. It is intended for use as a guideline only. At no time should this document replace existing documents established by the facility unless written permission has been obtained from the responsible facility manager.*

## PREFACE

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Enveloped viruses are viruses that possess an envelope or outer coating that is composed of a lipid layer (fat-like substance that is water insoluble). The envelope is needed to aid in attachment of the virus to the host cell. Loss of the envelope results in loss of infectivity. The mode of transmission for enveloped viruses is characterized by the specific virus; however, the most common routes are via indirect or direct contact of infectious virus particles and contact with or inhalation of respiratory droplets. Some enveloped viruses may also be transmitted by airborne transmission. Enveloped viruses are easily inactivated by routine surface cleaning and disinfection.

The following list provides examples of some pathogenic enveloped viruses for birds, mammals and primates.

|   |  |   |
|---|--|---|
| Avian Infectious Bronchitis             | Equine Influenza A                               | Nipah virus                                     |
| Avian Infectious Laryngotracheitis      | Equine Rhinopneumonitis                          | Porcine Epidemic Diarrhea virus (PEDv)          |
| Avian Influenza                         | Feline Coronavirus                               | Porcine Respiratory & Reproductive virus (PRRS) |
| Avian metapneumovirus                   | Feline Hepatitis (Feline Infectious Peritonitis) | Pseudorabies virus                              |
| Bovine Infectious Rhinotracheitis (IBR) | Feline Herpesvirus (FHV-1)                       | Rabies virus                                    |
| Bovine Pseudocowpox virus               | Feline Immunodeficiency virus (FIV)              | Rift Valley Fever virus (RVF)                   |
| Bovine Viral Diarrhea virus             | Feline Infectious Peritonitis                    | Simian Immunodeficiency virus (SIV)             |
| Canine Coronavirus                      | Feline Leukemia virus (FeLV)                     | Simian Retrovirus (SRV)                         |

|                                   |   |  |
|-----------------------------------|---|--|
| Canine Distemper                  | Foot Mouth Disease (FMDv)                 | Simian T-Cell Leukemia virus (STLV1)       |
| Canine Herpesvirus (CHV)          | Hantavirus                                | Simian Virus (SV-40)                       |
| Canine Infectious Hepatitis virus | Hog Cholera virus (Classical Swine Fever) | Swine Influenza virus (H1N1)               |
| Canine Influenza virus            | Lymphocytic Choriomeningitis Virus (LCMV) | Transmissible Gastroenteritis virus (TGE)  |
| Canine Parainfluenza (CPiV)       | Marek's Disease virus                     | Turkey Herpes virus                        |
| Cytomegalovirus                   | Mouse Cytomegalovirus (MCMV)              | Venezuelan Equine Encephalitis virus (VEE) |
| Duck Enteritis virus              | Mouse Hepatitis virus (MHV)               | Vesicular Stomatitis virus (VSV)           |
| Duck Hepatitis B virus            | Murine Hepatitis virus                    |  |
| Equine Arteritis virus            | Murine Parainfluenza virus type 1         |  |
| Equine Herpesvirus                | Newcastle Disease virus (NDV)             |  |

## PREPARATION

Transmission of enveloped viruses can be attributed to direct and indirect contact, respiratory droplets and airborne transmission. Appropriate personal protection should be taken for those responsible for the decontamination of a cage, kennel, and stall or animal housing area. Appropriate biosecurity practices should be applied, including limiting the amount of aerosols generated and disturbance to dust / soil in the area to be cleaned and disinfected.

## PROTECTIVE BARRIERS

Appropriate personal protection should be taken for those responsible for the decontamination of the area and may include the following:

1. Disposable gloves. Gloves should be changed as required (when torn, when hands become wet inside the glove or when moving between animal housing areas)
2. Household gloves can be worn, but they must be discarded when the cleaning is complete.
3. Protective Eye wear (goggles, face shield or mask with eye protection) as appropriate based on task to be completed
4. Masks (surgical or procedural masks sufficient) as needed
5. Gowns as needed

## PRODUCTS

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All Accelerated Hydrogen Peroxide<sup>®</sup> (AHP<sup>®</sup>) disinfectant-cleaner products have been approved for sale as a disinfectant by either Health Canada or the US Environmental Protection Agency (EPA) and carry either a DIN or EPA registration number indicating their approval for sale as a disinfectant.

AHP<sup>®</sup> disinfectants are registered as a Hospital Grade Disinfectant which denotes that the products have been proven efficacious against the three main surrogate bacteria designated both Health Canada and the EPA for Bactericidal activity; *Staphylococcus aureus*, *Pseudomonas aeruginosa* and *Salmonella enterica* (formerly known as *Salmonella choleraesuis*). AHP<sup>®</sup> disinfectants have also been tested against a wide range of enveloped viruses including Influenza viruses, Hepatitis viruses, Coronaviruses, and Herpesviruses with contact times of 30 seconds to 5 minutes depending on the formulation and/or dilution used.

| <b>Product Name</b>  | <b>Market</b>             | <b>Country</b> |
|----------------------|---------------------------|----------------|
| <b>Prevail™</b>      | Companion and Farm Animal | Canada         |
| <b>Rescue™</b>       | Companion Animal          | USA            |
| <b>Intervention™</b> | Farm Animal               | USA            |

## RECOMMENDED PROCEDURES FOR CLEANING AND DISINFECTION OF ANIMAL CARE EQUIPMENT

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Contaminated animal care equipment should be clearly identified and kept separate from clean equipment. Animal care equipment include: blood pressure cuffs, stethoscopes, thermometers, handling or restraining equipment, feeding and watering appliances, etc.

1. Use the AHP<sup>®</sup> solution to remove soil and body materials (e.g. blood, organic soils) from heavily soiled items
2. Apply AHP<sup>®</sup> solution evenly over surface ensuring that all surfaces are thoroughly wet. Items that can be immersed may be placed into a container of AHP<sup>®</sup> solution.
3. Allow the items to remain in contact with the AHP<sup>®</sup> solution for the appropriate contact time (refer to the label of the AHP<sup>®</sup> solution being used).
4. After the contact time has been achieved remove any excess solution with a clean cloth, sponge or paper towel.
5. Items that have been immersed should be removed from the solution after the appropriate contact time, rinsed with potable water and allowed to air dry.

## **RECOMMENDED PROCEDURES FOR CLEANING AND DISINFECTION OF KENNELS AND CAGES:**

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The AHP<sup>®</sup> technology is designed to be both an excellent cleaner and effective disinfectant and can be used in place of a degreaser or detergent.

1. Remove all animals and feed from the area to be cleaned and disinfected.
2. Remove all litter and fecal matter from floors, walls and surfaces of kennels or cages.
3. Empty or cover all feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or a detergent or a diluted solution of AHP<sup>®</sup> and rinse with water.
5. Apply the AHP<sup>®</sup> solution to floors, walls and other surfaces of the kennels or cages ensuring the surfaces are thoroughly wet and remain wet for the appropriate contact time.
6. Allow surfaces to dry before reintroducing animals back into the kennels or cages.
7. Clean and disinfect all equipment used to remove litter and fecal matter such as forks, shovels and scrapers.

## **RECOMMENDED PROCEDURES FOR CLEANING AND DISINFECTION OF ANIMAL HOUSING FACILITIES:**

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The AHP<sup>®</sup> technology is designed to be both an excellent cleaner and effective disinfectant and can be used in place of a degreaser or detergent.

1. Remove all animals and feed from the area to be cleaned and disinfected.
2. Remove all litter, bedding and manure from floors, walls and surfaces of cages, stalls or other animal handling areas.
3. Empty or cover all feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or a detergent or a diluted solution of AHP<sup>®</sup> and rinse with water.
5. Apply the AHP<sup>®</sup> solution to floors, walls and other surfaces of the cages, stalls or other animal handling areas ensuring the surfaces are thoroughly wet and allow to remain wet for the appropriate contact time.
6. Allow surfaces to dry before reintroducing animals back into the kennels or cages.
7. Clean and disinfect all equipment used to remove litter, bedding and manure such as forks, shovels and scrapers.