

# Cleaning and Disinfection: Vehicles



Cleaning and disinfection (C&D) procedures are a crucial part of any animal health emergency response. The C&D of vehicles used during an animal health response will be necessary to prevent the spread of pathogens to other animals or locations. C&D must include any vehicle used on infected premises or with infected animals, including trailers, feed trucks, milk trucks, carcass transporters and heavy machinery.

## Large-Scale Disinfection Station

Large-scale disinfection stations should be set up adjacent to or at the entrance/exit points to the infected premises.

- **Location should be on flat terrain with impermeable surface (e.g., plastic sheeting)**
  - Construct to withstand the weight of the vehicles
  - Area two times the largest vehicle
  - Plywood sheeting or ramps should be placed to protect berm materials at the entrance and exits
  - Holding area for disinfectant contact time process
- **Gather C&D supplies (e.g., tubs, scrub brushes, sprayers), a water source or supply**
- **Determine wastewater containment**
  - Berming materials to contain fluid
  - Drain with sump pump to holding tank for disposal
  - Runoff water should be contained and not allowed to drain in "clean" uncontaminated areas

## Preparation

- **Disinfectant Solutions**
  - Use according to product label
  - Use only EPA-registered or approved products
  - Prepare fresh solutions – old solutions may have reduce efficacy
  - Use test kits to check for disinfectant active ingredient concentration or degradation
- **Maintain biosecurity work zones to prevent the spread of pathogens (see diagram on next page)**

## Basic C&D Protocol

Vehicle C&D should follow the basic C&D protocol. Use a systematic approach to ensure proper disinfection.

- **Any vehicle used on infected premises or with infected animals**

## A. Cleaning

- **Dry Clean**
  - Take removable items out of vehicle interior for subsequent C&D
  - Use brooms, shovels, manure forks, brushes or scrapers to remove all visible organic material from vehicle exterior
  - Dispose of all organic material and gross debris in a manner to minimize further spread of microorganisms and ensure compliance with any federal, state and local requirements and policies
- **Wash and Rinse**
  - Wash vehicles with detergent and warm water
  - Whenever possible use warm (110°F) water
  - Mechanical scrubbing and scraping may be necessary to remove oils, grease or exudates from rough surfaces, deep cracks, or other surface irregularities
  - Areas and items with organic materials adhered to the surfaces may need pre-soaking
  - Use high pressure sprayers with caution – while very effective in removing accumulations of urine and feces and for cleaning porous surfaces, they should be avoided in cases of highly infectious or zoonotic pathogens to avoid further spread
  - Rinse items with clean, warm water
  - Allow to sit 5-10 min to drip off residual water

## B. Disinfection

- **Disinfectant Application**
  - Apply an EPA-registered disinfectant with a low pressure sprayer and scrub brushes
  - Select a non-corrosive disinfectant product
- **Contact Time**
  - Ensure all areas are covered thoroughly with the solution and remain "wet" throughout the necessary contact time; reapply if necessary
- **Rinse and Dry**
  - Rinse thoroughly with clean warm water – This is essential as detergents or disinfectants dried on components may cause deterioration of rubber or metal parts if not completely removed
  - Allow items to air dry completely – if possible overnight
- **Don't forget areas such as:**
  - Bodywork, undercarriage, wheels, wheel wells

## Vehicle Interior

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The interior of the vehicle will also need to be disinfected, especially if the driver has left the cab while on the infected premises.

- Remove non-fixed items
- Sweep away gross debris
- Wash, rinse and dry
- Wipe EPA-registered disinfectant
- Keep surfaces “wet” during contact time
- Allow interior to dry

## Safety Concerns

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- Skin, eye, respiratory tract irritation from chemicals
- Physical injury from slips, trips on slick surfaces and high pressure sprayers

## Environmental Hazards

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- Runoff of infectious material or chemical solutions must be avoided to prohibit environmental impacts
  - Many chemical disinfectants are toxic to aquatic organisms
  - Prevent the further spread of pathogens into the environment

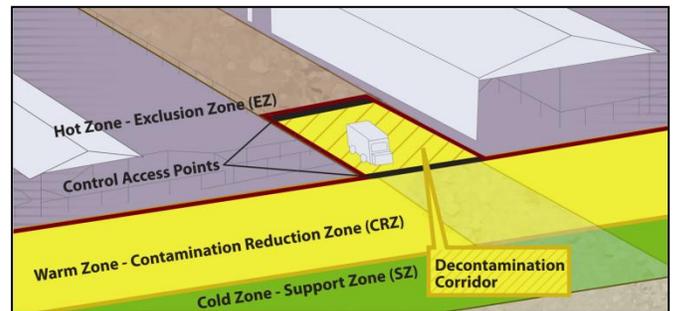
## Biosecurity Work Zones

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Biosecurity work zones must be maintained to prevent the spread of microorganisms.

- **The Hot Zone or Exclusion Zone (EZ):** High-risk area where infected animals were housed and is potentially contaminated and considered unsafe. PPE must be worn. Initial decontamination and disinfection of vehicles begins here prior to exiting.
- **The Warm Zone or Contamination Reduction Zone (CRZ):** Also a high risk area due to the potential for exposure to pathogens and chemical disinfectants. PPE must be worn. Final decontamination and disinfection occurs in the Decontamination Corridor of the Warm Zone-Contamination Reduction Zone.
- **The Decontamination or Decon Corridor:** Area running between the Hot Zone and Warm Zone. Decontamination of vehicles occurs along this corridor with the goal of decreasing the level of contamination of vehicles as they move toward the Cold Zone.

- **The Cold Zone or Support Zone (SZ):** This is the “cleanest” work zone with the lowest relative risk of exposure to pathogens and chemical disinfectants. Donning of PPE prior to entry into the Hot Zone occurs here. Contaminated vehicles and decontamination activities are prohibited in this area.



## Additional Resources

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USDA APHIS. Foreign Animal Disease Preparedness and Response Plan (FAD PReP). Cleaning and Disinfection Guidelines.

[http://www.aphis.usda.gov/animal\\_health/emergency\\_management/downloads/nahems\\_guidelines/cleaning\\_disfection.pdf](http://www.aphis.usda.gov/animal_health/emergency_management/downloads/nahems_guidelines/cleaning_disfection.pdf)

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