

Cleaning and Decontamination of Ebola on Surfaces

Guidance for Workers and Employers in Non-Healthcare/Non-Laboratory Settings

Workers tasked with cleaning surfaces that may be contaminated with Ebola virus, the virus that causes Ebola hemorrhagic fever (EHF), must be protected from exposure. Employers are responsible for ensuring that workers are protected from exposure to Ebola and that workers are not exposed to harmful levels of chemicals used for cleaning and disinfection.

Guidelines for cleaning and disinfection

- Immediately clean and disinfect any visible surface contamination from blood, urine, feces, vomit, or other body fluids that may contain Ebola virus.
- Isolate areas of suspected Ebola virus contamination until decontamination is completed to minimize exposure to individuals not performing the work.
- Cover spills with absorbent material (e.g., paper towels), then pour disinfectant on to saturate the area, and allow bleach to soak into spills for at least 30 minutes before cleaning to allow it to kill any virus or other infectious agents that may be present.
- Treat any visible contamination or bulk spill matter with a suitable disinfectant (described on p. 2) before cleaning up and removing bulk material.
- After disinfecting and removing bulk material, clean and decontaminate the surface using the disinfectant.
- Ensure adequate ventilation in areas where workers are using disinfectants, including by opening windows and doors, or using mechanical ventilation equipment.
- In some cases, the use of chemical disinfectants may require an employer to train workers about how to protect themselves against chemical hazards and comply with OSHA's Hazard Communication, [29 CFR 1910.1200](#), and other standards.

Use appropriate protective equipment

Employers must select personal protective equipment (PPE) (such as gloves, gowns, goggles and facemasks) that will protect workers against Ebola virus and other hazards to which they may be exposed. Workers must wear PPE to help minimize exposure to the virus via mucous membranes or broken skin. PPE suitable for contact-transmissible diseases, such as Ebola, includes:

- Nitrile gloves (consider using double-gloves for extra protection);
- Fluid-resistant or fluid-impermeable gowns;
- Goggles or face shields; and
- Facemasks that cover the nose and mouth.

Wearing protective sleeve, leg, and shoe coverings or fluid-resistant or fluid-impermeable coveralls further reduces the risk of contact with infectious materials. In some cases, additional respiratory protection (e.g., respirators) may be necessary to protect workers from exposure to Ebola and/or chemical disinfectants.

- Use tools, such as tongs from a spill kit, as much as possible rather than doing cleanup work directly with gloved hands.
- After cleaning and disinfection work is complete, remove PPE as follows: gloves, face shield/goggles, gown, and then

mask/respirator. Wash hands with soap and water, or use an alcohol-based hand gel if no running water is available. See CDC fact sheet on donning and removal of PPE: www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf.

- Avoid cleaning techniques, such as using pressurized air or water sprays, that may result in the generation of bio-aerosols (aerosolized droplets containing infectious particles that can be inhaled).

Disinfectants for Ebola virus

- Use an EPA-registered disinfectant suitable for non-enveloped viruses (e.g., adenovirus, norovirus, poliovirus) to treat contamination/spills and to disinfect surfaces after bulk spill material has been removed. See www.epa.gov/oppad001/chemregindex.htm. Follow manufacturer instructions for the specific disinfectant.
- When commercial disinfectant products are unavailable, common household bleach and other appropriate disinfectants may be effective alternatives.
- Use a 1:10 solution of bleach to water (e.g., 1 cup of bleach in 9 cups of water).
- **Never mix chemicals together.** Certain combinations of chemicals can be deadly or can reduce the effectiveness of the disinfectant.

Guidelines for waste disposal

- Soak materials and PPE used in cleanup and decontamination in disinfectant, double-bag, and place in a leak-proof container to further reduce the risk of worker exposure. Use a puncture-proof container for sharps.
- It may be necessary to dispose of contaminated objects with porous surfaces that cannot be disinfected.
- Dispose of waste from surface cleanup in accord with CDC guidelines and the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR), at www.cdc.gov/vhf/ebola/hcp and phmsa.dot.gov/hazmat/transporting-infectious-substances.

Use appropriate respiratory protection

- In instances where workers may be exposed to bio-aerosols (e.g., as a result of spraying liquids or air during cleaning) suspected of or known to contain Ebola virus, additional respiratory protection is needed. In these cases, medically qualified workers must use, at a minimum, a NIOSH-approved, fit-tested N95 respirator.
- Wearing a respirator for extended periods of time can be uncomfortable. Workers who need respirators for long durations may find powered air-purifying respirators more tolerable.
- Respirators or face masks used for protecting workers against Ebola virus may not be effective for also protecting them from exposure to certain toxic chemicals used for cleaning and decontamination. To learn more about the requirements for selecting an appropriate respirator to protect against chemical exposure (elastomeric respirator with appropriate chemical cartridges or a supplied-air respirator), consult OSHA's Respiratory Protection standard, [29 CFR 1910.134](http://www.osha-slc.gov), and the manufacturer's Safety Data Sheet (SDS) for the specific chemical(s) that workers are using. See OSHA's Respiratory Protection web page: www.osha.gov/SLTC/respiratoryprotection.

Follow applicable OSHA standards

- Employers must ensure that they comply with OSHA's Bloodborne Pathogens standard, [29 CFR 1910.1030](http://www.osha-slc.gov), to protect workers who may be exposed to blood or other potentially infectious materials.
- OSHA's Personal Protective Equipment (PPE) standard, [29 CFR 1910.132](http://www.osha-slc.gov), provides additional information about how to select and use appropriate PPE, training and other requirements.
- Employers must comply with OSHA's Hazard Communication standard, [29 CFR 1910.1200](http://www.osha-slc.gov), when their workers use certain chemicals for cleaning and decontamination.
- In some cases where a specific OSHA standard doesn't apply, the General Duty Clause (Sec. 5(a)(1)) of the *Occupational Safety*

and Health Act (OSH Act) requires employers to furnish to each employee employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees.

Assistance for Employers

OSHA's On-site Consultation Program offers free and confidential advice to small and medium-sized businesses in all states across the country, with priority given to high-hazard worksites. On-site Consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management systems. To locate the OSHA On-site Consultation Program nearest you, call 1-800-321-6742 (OSHA) or visit www.osha.gov/consultation.

Additional OSHA resources

- Safety and Health Topics web page for Ebola www.osha.gov/SLTC/ebola
- Safety and Health Topics page for Bloodborne Pathogens (and Needlesticks) www.osha.gov/SLTC/bloodbornepathogens
- Safety and Health Topics web page for PPE www.osha.gov/SLTC/personalprotectiveequipment
- Safety and Health Topics web page for Respiratory Protection www.osha.gov/SLTC/respiratoryprotection
- Safety and Health Topics web page for Hazardous and Toxic Substances www.osha.gov/SLTC/hazardoustoxicsubstances
- Hazard Communication web page www.osha.gov/dsg/hazcom

Note: This document is not intended to cover all OSHA standards that may apply. State Plans adopt and enforce their own occupational safety and health standards at www.osha.gov/dcsp/osp. Additionally, this guidance is not for cleanup and decontamination of Ebola virus released as a biological weapon. See OSHA's emergency preparedness and response resources for information related to biological terrorism: www.osha.gov/SLTC/emergencypreparedness.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.



www.osha.gov (800) 321-OSHA (6742)



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