



Hazardous Drug (HD) Cleaning Protocols

for Pharmacies and Emergency Responders

Hazardous drugs (HD) can be present in various healthcare settings, including pharmacies, oncology units, police departments, and ambulances. This technical bulletin outlines USP <800> standards and details protocols for using recommended Clorox products.

Overview of USP <800> Hazardous Drugs—Handling in Healthcare Settings

USP <800> was implemented on December 1, 2019, and its guidelines apply to all HD touch points – including receipt, storage, compounding, dispensing, administration, and disposal – across various settings such as pharmacies, hospitals, non-acute care settings (including home healthcare), and veterinary settings.^{1,2}

A key part of the guidelines describes how to clean up after the use of hazardous drugs. Pharmacies where hazardous drugs are compounded must ensure that the cleaning processes and products used for compounding surfaces comply with the steps outlined in USP <800>. These protocols can also be utilized by first responders who may encounter hazardous drugs.

First responders, like pharmacists, need to know how to clean hazardous substances from surfaces. During routine duties, responders may encounter mixtures of hazardous drugs. Although the exact components of these mixtures might not be known at the time, emergency responders can use the following information to learn about safe cleaning procedures when responding to incidents involving hazardous drugs.^{4,5}

Summary of Cleaning Steps (adapted from USP <800> Table 5)

Step	Purpose	Example Agents
Deactivation	Render drug inactive or inert	As listed in the HD labeling or other agents that may incorporate Environmental Protection Agency (EPA)-registered oxidizers (e.g., peroxide formulations, sodium hypochlorite, etc.)
Decontamination	Remove inactivated drug residue	Materials that have been validated to be effective for HD decontamination, or through materials proven to be effective through testing, which may include alcohol, water, peroxide or sodium hypochlorite
Cleaning	Remove organic & inorganic material	Germicidal detergent

For disinfection (destroy microorganisms), use an EPA-registered disinfectant and/or sterile alcohol.

- ▶ Comprehensive written procedures are required for these steps and for sterile compounding disinfection.
- ▶ All personnel, including first responders, must be appropriately trained.
- ▶ Please reference and follow your facility's infection control policies for handling hazardous material and dispose of wipes and gloves according to your facility's protocol.





If your facility does not have a specific personal protective equipment recommendation, consider following Centers for Disease Control and Prevention (CDC) and National Institute of Occupational Safety and Health (NIOSH) guidelines that suggest wearing nitrile gloves, a mask, and glasses or goggles when decontaminating fentanyl on surfaces.⁴

Cleaning agents should be applied with wipes, not spray bottles, to avoid spreading HD residue.

Recommendations for using Clorox Healthcare wipes to comply with hazardous drug cleaning guidelines

Clorox Healthcare Bleach Germicidal Wipes and Clorox Healthcare Hydrogen Peroxide Cleaner Disinfectant Wipes are EPA-registered disinfectants and oxidizers, and are also considered to be germicidal detergents. They are approved for use in pharmacies and chemotherapy hoods and have been tested for their ability to remove representative hazardous drugs from contaminated surfaces. The following protocol, when used with a three-minute contact time for disinfection, has been shown to deactivate and decontaminate six representative hazardous drugs from a stainless steel surface (see table below).³

Recommended Protocol

-  1. Take a disinfectant wipe and fold it in half. Wipe the surface until completely wet and to remove visible powder or drug liquid. Wipe in unidirectional strokes, overlapping a portion of the previously wiped surface each time. If there is still visible contaminant on the surface, use a fresh wipe if necessary and wipe again until all visible contaminant is gone.
-  2. Discard the wipes according to your facility's protocol.
-  3. To deactivate and decontaminate the surface, take a second disinfectant wipe and wipe the surface until completely wet using the same technique as in step 1. Ensure that the surface remains visibly wet for 3 minutes. If required to maintain surface wetness, use more than 1 wipe. Discard the wipe according to your facility's protocol.
-  4. For Pharmacy Sterile Compounding Areas: Saturate a clean, dry wipe with sterile 70% alcohol and then wipe the surface using the same technique as in step 1. Discard the wipe according to your facility's protocol.

Deactivation and decontamination of representative hazardous drugs from hard, non-porous surfaces

Clorox Healthcare Disinfectant	Chemotherapy Drugs					Synthetic Opioid
	Methotrexate	Cyclophosphamide	Cisplatin	5-Fluorouracil	Vincristine Sulfate	Fentanyl*
Clorox Healthcare Bleach Germicidal Wipes (EPA Reg. No. 67619-12)	100%	99.93%	100%	100%	100%	99.90%
Clorox Healthcare Hydrogen Peroxide Cleaner Disinfectant Wipes (EPA Reg. No. 67619-25)	99.90%	99.91%	99.98%	99.92%	99.92%	99.60%

*Tested in accordance with USP800 guidelines for deactivating and decontaminating hazardous drugs. The protocol tested follows the USP800 recommendation to use a 2-step wiping protocol to deactivate and decontaminate hard non-porous surfaces. *Use as directed, for hard, non-porous surfaces only.

Clorox Healthcare Product Recommendations for Pharmacies and Emergency Responders

Clorox Healthcare Bleach Germicidal Wipes (EPA Reg. No. 67619-12)		
Item No. 30577	6" x 5" 150 ct. Canister	6/case
Item No. 35309	6.75" x 9" 70 ct. Canister	6/case
Item No. 32621	6.75" x 9" 100 ct. Softpack	9/case
Item No. 31424	12" x 12" 50 ct. Carton	6/case
Item No. 30358	12" x 12" 110 ct. Bucket	2/case
Item No. 30359	12" x 12" 110 ct. Bucket Refill	2/case



Clorox Healthcare Hydrogen Peroxide Cleaner Disinfectant Wipes (EPA Reg. No. 67619-25)		
Item No. 30825	6.75" x 5.75" 155 ct. Canister	6/case
Item No. 30824	6.75" x 9" 95 ct. Canister	6/case
Item No. 30826	12" x 11" 185 ct. Bucket	2/case
Item No. 30827	12" x 11" 185 ct. Bucket Refill	2/case



References:

- US Pharmacopoeia. USP General Chapter <800> Hazardous Drugs—Handling in Healthcare Settings. <http://www.usp.org/compounding/general-chapter-hazardous-drugs-handling-healthcare> Accessed August 4, 2024.
- The National Institute for Occupational Safety and Health (NIOSH). NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016 <https://www.cdc.gov/niosh/docs/2016-161/default.html> Accessed August 4, 2024.
- methotrexate, cyclophosphamide, cisplatin, 5-fluorouracil, and vincristine sulfate testing conducted by Maxaam Labs, a Bureaus Veritas Company, December 2018. Fentanyl testing conducted by MRIGlobal, March 2024.
- The National Institute for Occupational Safety and Health (NIOSH). Illicit Drug Tool-Kit for First Responders. Accessed August 4, 2024. <https://www.cdc.gov/niosh/topics/fentanyl/toolkit.html>
- The National Institute for Occupational Safety and Health (NIOSH). Fentanyl: Emergency Responders at Risk. Accessed August 4, 2024. <https://www.cdc.gov/niosh/topics/fentanyl/risk.html>



For product resources and implementation tools, contact your Clorox sales representative or Call: 1-800-234-7700 Visit: www.CloroxHealthcare.com

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NI-614210