

**EGUIDE**

**Drug Disposal:  
Safe, Compliant, and  
Environmentally Sound  
Destruction of  
Pharmaceutical Waste**



## **E**GUIDE

# Drug Disposal: Safe, Compliant, and Environmentally Sound Destruction of Pharmaceutical Waste

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## What You'll Learn

Federal, state, and local regulations around drug disposal have changed over the last several years and current requirements are confusing at best. Former best practices are now prohibited, and complex processes make compliance with local, state, and federal law challenging. Plus, the timeline around when regulations are implemented varies by state, further adding to the confusion.

What hasn't changed is the focus on protecting the environment and water supply while also preventing drug diversion. In this guide, you'll learn about how to dispose of unused pharmaceuticals in a way that is both environmentally sound and compliant with applicable regulations.

## Past Practices Are No Longer Best Practices

Disposing of unused prescription drugs used to be simple – just flush them down the toilet. But that changed in 2019 when the EPA banned “sewering” of unused drugs that are considered hazardous pharmaceutical waste. Sewering refers the practice of introducing waste directly into a sewer system by flushing drugs down a toilet or washing them down a sink. Part of the Clean Water Act (CWA), the ban is broad and covers healthcare facilities, including skilled nursing facilities and pharmacies. While the federal ban only applies to drugs classified as hazardous, the EPA recommends against sewerage any drug. Also, some states and municipalities ban sewerage for a broader list of drugs, or ban the practice altogether.

Another former best practice was mixing drugs with an unpleasant substance, like used kitty litter, and throwing them in the trash. This approach was supposed to prevent discarded drugs from being found and diverted, but it proved to be ineffective. It also posed environmental concerns since drugs that end up in a landfill with other trash can find their way into ground water and contaminate our supply as well as harm wildlife.

If “best” practices are no longer the best, how should facilities be disposing of unused prescription drugs now? In part, it depends on the type of drug, especially if it’s considered hazardous or is classified as a controlled substance.



# Hazardous Waste Pharmaceuticals

The EPA identifies chemicals, including medications, as hazardous based on four attributes: toxicity, reactivity, ignitability, and corrosivity. Drugs that meet these definitions may be P-listed (harmful even in small quantities) or U-listed (potentially harmful, but not acutely so).

The list of hazardous pharmaceuticals includes the obvious, like chemotherapy agents, but also drugs that are commonly used in skilled nursing facilities. Examples are warfarin, coumadin, vaccines that contain thimerosal, insulins containing m-cresol, and even some multivitamins.

To comply with federal, state, and local regulations, any hazardous pharmaceutical, regardless of whether it's P-listed or U-listed, must be disposed of through a licensed vendor. These vendors use either an incinerator or a sanitary landfill for toxic waste to dispose of hazardous drugs. The EPA's lists of P-listed and U-listed hazardous waste pharmaceuticals can be found here.



## **EXAMPLES OF HAZARDOUS DRUGS:**

**Warfarin**

**Coumadin**

**Vaccines containing thimerosal**

**Multivitamins**

**Silver sulfadiazine**

**Insulins containing m-cresol**

# What Makes a Drug Hazardous?

The EPA identifies chemicals, including medications, as hazardous based on four attributes: **toxicity, reactivity, ignitability, and corrosivity.**

## > Toxicity

Toxic drugs contain heavy metals at a sufficient concentration as determined by lab tests. Examples include m-cresol (found in some insulins), mercury (used in some vaccines) and silver (used to prevent infections in burns).

## > Reactivity

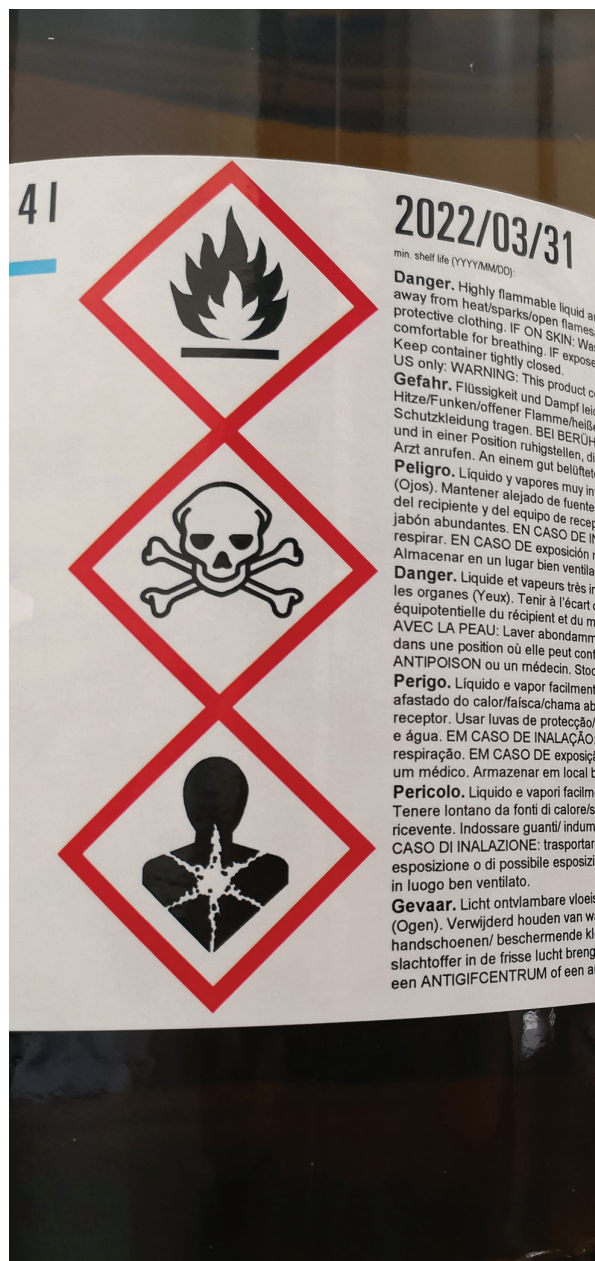
Reactive drugs are unstable under normal conditions. Nitroglycerin was federally exempted from this classification in 2001.

## > Ignitability

A drug is considered ignitable if it contains at least 24% alcohol and has a flash point of less than 140° F. This includes any aerosols that are flammable.

## > Corrosivity

A corrosive drug has a pH of  $\leq 2$  for acids or a pH of  $\geq 12.5$  for bases. Many chemotherapy agents are considered corrosive.



## Controlled Substances

Controlled substances include opiates, stimulants, depressants, hallucinogens, and anabolic steroids. Examples of prescription drugs that fall under this definition are narcotic pain medications, tranquilizers, and sleep medications. Their disposal is regulated by the Drug Enforcement Administration (DEA) on a national level, as well as by state and local law.

Like all prescription drugs, controlled drugs have the potential to cause environmental harm if they're flushed or find their way to a landfill. The main concern, however, is drug diversion. Because these drugs are linked to addiction and abuse, they must be destroyed (including "wasting" of leftover liquids) and documented according to your facility's policies and procedures.

Liquid medication that is leftover after administering a dose can be inactivated by using a product like Rx Destroyer (be sure the product is compliant with DEA regulations). Pills and capsules should be placed in a secure container, then rendered non-retrievable by DEA standards, usually through incineration. There are many vendors, like MedSafe, that provide containers and manage drug destruction.

### COMMONLY DIVERTED DRUGS

According to the Department of Health & Human Services, the most commonly diverted controlled drugs are:

**Codeine**

**Fentanyl**

**Hydromorphone**

**Meperidine**

**Morphine**

**Oxycodone**

**Pentazocine**

**Dextropropoxyphene**

**Methadone**

**Hydrocodone combinations**



## Other Prescription Drugs

Most prescription drugs aren't considered hazardous or controlled, but they still pose a risk to the environment and shouldn't be flushed or thrown in the trash. While their disposal may not be regulated, it's best to secure and destroy them, which can be done with the help of a licensed vendor.



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