

# Clinical Chemotherapeutic Waste



## Overview

Chemotherapeutic agents are toxic chemicals. Some of these agents are regulated by the United States Environmental Protection Agency (EPA) as hazardous waste when disposed of. EPA regulations also consider materials used in administering EPA-regulated chemotherapeutic agents as potentially hazardous wastes (e.g., syringes; tubing and IV bags; spill clean-up). Chemotherapeutic wastes must be managed in accordance with this Update to ensure proper handling, storage, and disposal.

Chemotherapeutic wastes are separated into two categories:

- EPA-regulated chemotherapeutic wastes disposed of via Environmental Health and Safety; or
- All other chemotherapeutic wastes disposed of via Stericycle's chemotherapeutic waste program.

## Applicability

This Update applies to the Weill Cornell Medicine (WCM) physicians, clinical staff, medical students, and technicians who administer chemotherapeutic agents and manage the associated wastes.

**The disposal procedures outlined in this Update must be followed along with the chemotherapeutic waste disposal services provided by Stericycle.** WCM clinical spaces interested in contracting another regulated medical waste or chemotherapeutic waste disposal vendor must contact Environmental Health and Safety (EHS) to verify alternate disposal procedures.

This Update does not apply to chemotherapeutic wastes generated in New York -Presbyterian Hospital (NYP). NYP clinical areas must manage wastes as detailed in the NYP Safety Manual.

## Definitions

**Chemotherapeutic sharps wastes** are items that are contaminated with a chemotherapeutic agent and can cut or have the potential to cut, puncture, scratch, or abrade skin (e.g., needles, pipettes, razor blades, glass bottles, vials).

**Chemotherapeutic clinical trial samples** must be assumed to contain the chemotherapeutic agent being studied and disposed of as detailed in this Update.

**EPA-regulated chemotherapeutic agents** are a group of chemotherapeutic agents which the EPA regulates to more stringent disposal requirements, and which cannot be disposed of via Stericycle.

## Responsibilities

**Physicians, Clinical Staff, Medical Students, and Technicians** who administer chemotherapeutic agents must ensure that all associated wastes are handled, stored, managed, and disposed of as established with this update. Personnel packaging, shipping, or signing Medical Waste Tracking Forms for chemotherapeutic waste shipments must complete Regulated Medical Waste Shipper training with EHS.

**Environmental Health and Safety (EHS)** acts as a resource to WCM personnel, providing technical assistance and guidance on chemotherapeutic waste management. Upon request, EHS provides Regulated Medical Waste Shipper training, which includes chemotherapeutic waste shipments, and coordinates the disposal of EPA-regulated chemotherapeutic wastes.





## Procedure

### EPA-REGULATED CHEMOTHERAPEUTIC AGENTS LIST

The EPA regulates the disposal of the chemotherapeutic agents listed in the table below as toxic hazardous waste. Refer to the procedures below to determine if the chemotherapy waste must be disposed of as either:

- EPA-regulated chemotherapeutic wastes disposed of via EHS; or
- All other chemotherapeutic wastes disposed of via Stericycle's chemotherapeutic waste program.

#### Toxic Hazardous Waste

EPA-Regulated Chemotherapy Agent	C.A.S. #	Brand Name(s)
Arsenic Trioxide (see comment below)	1327-53-3	Trisenox
Azaserine	115-02-6	
Chlorambucil	305-03-3	Leukeran
Chlornaphazine	494-03-1	Discontinued Use
Cyclophosphamide	50-18-0	Cytosan; Neosar
Daunomycin	20830-81-3	Cerubidine; Daunorubicine; Daunoxome; Rubidomycin
Ethyl Carbamate	51-79-6	Urethane
Melphalan	148-82-3	Alkeran; L-PAM
3-Methylchloranthrene	56-49-5	
Mitomycin C	50-07-7	Mutamycin; Mitozytrex
Streptozotocin	18883-66-4	Zanosar
Uracil Mustard	66-75-1	

**Note:** Arsenic trioxide is regulated as an acutely toxic hazardous waste by the EPA and has more stringent disposal requirements than those outlined in this Update. Contact EHS if arsenic trioxide is used in the clinic for supplemental disposal procedures.

### EPA-REGULATED CHEMOTHERAPEUTIC WASTE MANAGED VIA EHS

EPA-regulated chemotherapeutic agents listed in the table above must be disposed of via EHS when in the following forms:

- Full and partially-full bottles, vials, IV bags, or other containers with EPA-regulated chemotherapeutic agents
- Syringes containing EPA-regulated chemotherapeutic agents which have not been administered to a patient
- Spill clean-up wastes of an EPA-regulated chemotherapeutic agent

Manage and dispose of EPA-regulated chemotherapeutic wastes in the forms above as follows:

1. **CONTAINERIZE** – Collect wastes into hard-walled containers with screw-top, sealable lids. Syringes must be placed into separate sharps containers. Original bottles and vials with sealable lids or caps do not have to be re-containerized.
2. **LABEL** – Label each container with a [Hazardous Waste Label](#) (available from EHS or printable) with the name of the EPA-regulated chemotherapeutic agent(s) utilized. Denote "SHARPS" on the label if syringes or other sharp wastes are inside the container.
3. **CLOSE AND PROTECT** – Close containers when not in use and protect from accidental exposure to employees and patients.
4. **STORE** – Store the container in a placarded [Chemical Waste Satellite Accumulation Area](#) with secondary containment (e.g., tub or bin) to contain spills.
5. **REQUEST DISPOSAL via EHS** – Submit an on-line request via [Salute](#) available on the EHS website to have these EPA-regulated chemotherapeutic wastes disposed of via EHS.



## ALL OTHER CHEMOTHERAPEUTIC WASTE MANAGED VIA STERICYCLE

All other chemotherapeutic wastes not disposed of via EHS must be disposed of via Stericycle's chemotherapeutic waste disposal program including the following wastes:

- Empty or residue-containing bottles, vials, IV bags, or other containers with EPA-regulated chemotherapeutic agents.
- Syringes containing EPA-regulated chemotherapeutic agents that have been administered to a patient.
- Any waste associated with chemotherapeutic agents not regulated by the EPA (i.e., chemotherapeutic agents not listed in the previous table).

Manage and dispose of these wastes as follows:

### 1. CONTAINERIZE –

- **Chemo Sharps Waste Containers:** Collect chemo sharps wastes into yellow chemo sharps containers.
- **Yellow Chemo Waste Bags:** Non-sharps chemo waste must be collected in yellow chemo waste bags.

### 2. CONTAINER LABELING –

Waste containers and bags must be labeled or marked with:

- Words “Chemotherapy Waste” or “Chemo”
- Biohazard symbol or the words “Biohazard”
- Name and address of the facility or clinic

### 3. CLOSE AND PROTECT –

Close sharps containers and chemotherapy waste bags and protect against accidental exposure. Remove when full. Chemo waste bags must be removed at least each evening.

### 4. COLLECTION AND DISPOSAL –

Clinics in the Weill Greenberg Center must contact Housekeeping Services (746-2288) to request chemo waste collections. All other off-site clinical areas must self-manage their chemo wastes with Stericycle as specified in Steps 5-9.

### 5. PACKAGE –

Sealed chemo sharps container and chemo waste bags must be placed into Stericycle fiberboard boxes for regulated medical waste, which are lined with a yellow chemo waste bag.

### 6. PACKAGE LABELING –

Stericycle regulated medical waste fiberboard boxes must be labeled:

- “Incinerate Only” sticker.
- Check “Chemotherapeutic” and “Incineration Only” on side of the box.
- Stericycle regulated medical waste Shipper Label. Write the date when the waste is shipped.

### 7. STORE –

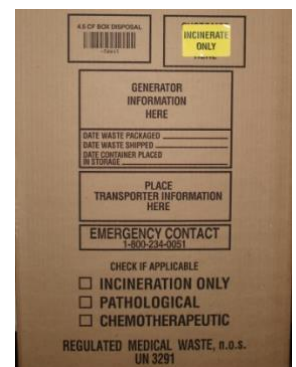
Store the box in a secured regulated medical waste storage area.

### 8. TRAIN PERSONNEL –

Regulated Medical Waste Shipper training must be completed prior to shipping waste or signing Medical Waste Tracking Forms.



*EXAMPLE CONTAINERS: Sharps containers (left) are manufactured by Tyco Healthcare and available from Stericycle, Lab Safety Supply, and other medical suppliers. Yellow chemotherapeutic waste bags (right) are available from Stericycle.*



*EXAMPLE PACKAGING: Regulated medical waste boxes and labels are available from Stericycle.*

Regulated Medical Waste	
 <b>4210-8134779-001-00A005H</b>	
<b>Generator</b> Weill Cornell Medical College 1305 York Ave New York, NY 10021 Ph: (212)746-0192	
<b>Transporter</b> _____ <b>Date</b> _____ STERICYCLE, INC. 28161 NORTH KEITH DRIVE LAKE FOREST, IL 60045 (973) 680-4840 EPA# NJDEP19713 IL-033 CTBMW-005 UN3291	

*EXAMPLE SHIPPER LABEL: Regulated medical waste shipper labels are available from Stericycle.*

## References

- NYSDEC 6 NYCRR Parts 370 through 374 and 376 – Hazardous Waste Disposal
- Stericycle® - “Managing Antineoplastic (Chemotherapy) Waste in New York State”, May 2004
- Salute Safety: [https://ehs.salutesafety.com/users/sign\\_in](https://ehs.salutesafety.com/users/sign_in)