



## Group 1 Carcinogens, Chemotherapy Waste and other Hazardous Drug Disposal

### Introduction

Before carrying out any work involving carcinogens, chemotherapeutics or other hazardous drugs, the principal investigator must perform a hazard assessment in order to identify the proper PPE and engineering requirements for handling hazardous compounds. The assessment should take into account not only the laboratory staff who work with these compounds, but also other personnel who may come into contact with the compounds indirectly (such as RAR personnel handling contaminated bedding). The safety requirements developed during the hazard assessment should be applied during the disposal of these hazardous agents, as well as during the initial preparation and handling of them. The hazard assessment and safety requirements derived from the hazard assessment shall be incorporated into the standard operating procedure (SOP) for the handling of the chemical agent in question.

### Definitions

**Chemotherapy waste:** unused amounts and residue of pharmaceutical compounds used to treat disease.

**Class I carcinogens:** carcinogens identified by the International Agency for the Research on Cancer (IARC) as being known to cause human cancer.

**Hazardous drugs:** any pharmaceuticals that fall under the American Society of Health-System Pharmacists (ASHP) 1990 definition of hazardous drugs ([http://www.ashp.org/s\\_ashp/docs/files/BP07/Prep\\_Gdl\\_HazDrugs.pdf](http://www.ashp.org/s_ashp/docs/files/BP07/Prep_Gdl_HazDrugs.pdf)). These include pharmaceuticals that are P-listed or U-listed chemicals by the EPA, or those listed in the 2004 NIOSH Alert "Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings" (<http://www.cdc.gov/niosh/docs/2004-165/pdfs/2004-165.pdf>)

### Procedures

When indicated, the following procedures must be adhered to for the disposal of carcinogens, and/or hazardous pharmaceuticals and/or items contaminated with such compounds (such as bedding).

- Donning of appropriate personal protective equipment (PPE). Any time an individual will be handling any hazardous agent, appropriate PPE must be worn. This includes wearing latex or nitrile gloves to protect the hands, wearing a lab coat or scrubs when there is a danger of spillage on the individual, and wearing a respirator when there is the chance for respiratory exposure to a hazardous agent – **Note: Use of a respirator requires fit-testing and enrollment in the University of Minnesota Respiratory Protection Program, <http://www.ohs.umn.edu/rpp/home.html>.**
- Drug product containers holding more than a residual amount and even empty product vials must be managed as hazardous waste and disposed of per the University's Hazardous Chemical Waste Management Guidebook, [http://www.dehs.umn.edu/hazwaste\\_chemwaste\\_umn\\_cwmgbk.htm](http://www.dehs.umn.edu/hazwaste_chemwaste_umn_cwmgbk.htm)

- Materials that are saturated with carcinogens or other hazardous drugs, such as overtly contaminated garments and **all** spill clean up material, should be placed in a leak-proof container before boxing for disposal as hazardous waste, see above.
- Some residual and trace chemotherapeutic wastes may be disposed of in yellow bags for incineration. This includes:
  - **completely** empty delivery devices, such as syringes and IV bags,
  - animal bedding that is not overtly contaminated,
  - gowns, gloves, tubing, wipes, etc. which are **not** saturated or overtly contaminated.
- Sharps contaminated with trace carcinogens or hazardous drugs must be disposed of in a separate sharps container that is labeled "Chemo Sharps," sealed, and placed in a yellow bag for incineration.
- Contact Waste Abatement Services (612-625-6481) to arrange for yellow container drop off and pick up on the Twin Cities campuses. Contact the UMD EHS Office (218-726-7139) for yellow container drop off and pick up on the Duluth campus.



## References

University of Minnesota Hazardous Chemical Waste Management Guidebook  
[http://www.dehs.umn.edu/hazwaste\\_chemwaste\\_umn\\_cwmgbk.htm](http://www.dehs.umn.edu/hazwaste_chemwaste_umn_cwmgbk.htm)

Minnesota Pollution Control Agency, Managing Antineoplastic (Chemotherapy) Waste <http://www.pca.state.mn.us/publications/w-hw4-03.pdf>

Minnesota Pollution Control Agency, Regulatory Consensus On Health Care Issues, Waste/Hazardous Waste #3.35, October 2005  
<http://www.pca.state.mn.us/publications/w-hw3-35.pdf>

Minnesota Pollution Control Agency, Evaluating Pharmaceutical Waste  
<http://www.pca.state.mn.us/publications/w-hw4-45a.pdf>

Minnesota Pollution Control Agency, Characteristic Wastes  
<http://www.pca.state.mn.us/publications/w-hw2-04.pdf>

NIOSH Publication No. 2004-165: Preventing Occupational Exposure to Antineoplastic and Other Hazardous Drugs in Health Care Settings  
<http://www.cdc.gov/niosh/docs/2004-165/2004-165d.html>