

**HAZARDOUS MEDICATION PRECAUTIONS:  
PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**For Activities Performed Outside of the Pharmacy**

Type of HD	Formulation	Activity	Double Gloves	Hazardous (Chemo) Gown	Eye and Face Protection*	Respiratory Protection**
Antineoplastic	Tablets, Capsules and Oral Liquids	Administering/wasting from unit-dose package	No, single gloves only	No	Yes, if exposure potential	No
		• Cutting, crushing, or otherwise manipulating tablets and capsules*** • Administering/wasting manipulated tablets and capsules • Reconstituting oral powders	Yes	Yes	Yes, if exposure potential	Yes
	Injectables, Topicals and Other Dosage Forms	• Administering/wasting • Reconstituting injectable or topical powders • Withdrawing from vial or ampoule	Yes	Yes	Yes, if exposure potential; Required with BCG and Talimogene Laherparepvec	Yes, if inhalation potential; Required with BCG
Non-Antineoplastic	Tablets, Capsules and Oral Liquids	Administering/wasting from unit-dose package	No, single gloves only	No	Yes, if exposure potential	No
		• Cutting, crushing, or otherwise manipulating tablets and capsules*** • Administering/wasting manipulated tablets and capsules • Reconstituting oral powders	No, single gloves only	No	Yes, if exposure potential	Yes
	Injectables, Topicals and Other Dosage Forms	• Administering/wasting • Reconstituting injectable or topical powders • Withdrawing from vial or ampoule	No, single gloves only	No	Yes, if exposure potential	Yes, if inhalation potential
All HDs	All formulations	Handling product when removing from a sealed transport bag****	No, single gloves only	No	No	No
	Contaminated body fluid (up to 48 hours after receiving HDs)	Handling and disposal	Yes	Yes	Yes, if exposure potential	Yes, if inhalation potential
	Spills and leaks	Cleaning	Yes	Yes	Yes	Yes
	Contaminated clothing, dressings, linens, and other materials	Disposal and cleaning	Follow Standard Precautions			

\* Use face shields in combination with goggles to provide a full range of protection against splashes to the face and eyes. Face shields alone do not provide full eye and face protection as splashes to the eyes could still occur. Eye and face protection may be needed in the following examples: (working above eye level, cleaning spills, intraoperative bladder treatments, aerosol/inhalation treatments, disposal of contaminated body fluids).  
\*\*N-95 Respiratory Mask to be worn when there is risk of splashes, droplets, sprays, or airborne particles (e.g., spills, irrigation solutions, aerosol/inhalation treatments, manipulation of tablets and capsules). A Powered Air Purifying Respirator (PAPR) with chemical cartridge is worn (1) when cleaning large spills (requiring more than one spill kit) or (2) for the following medications when a CSTD cannot be used for administration or when cleaning a spill: Carmustine, Cisplatin, Cyclophosphamide, Etoposide, 5-fluorouracil, Ifosfamide, Nitrogen mustard, Thiopeta  
\*\*\* Avoid cutting or crushing tablets and opening capsules, whenever possible. Use pill crushers with handles and associated pouches that will contain medications to avoid cross-contamination. If liquid formulation is needed, contact the pharmacy.  
\*\*\*\*Handling hazardous medications during automated medication cabinet activities (e.g., loading, removing, returning) is considered minimal risk and no PPE is required.

**HAZARDOUS MEDICATION PRECAUTIONS:  
PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**For Activities Performed Within the Pharmacy**

Formulation	Activity	Type of HD	Double Gloves	Hazardous (Chemo) Gown	Shoe covers	Eye Protection	Respiratory Protection*	Perform in Biological Safety Cabinet (BSC)**
<b>All formulations</b>	<ul style="list-style-type: none"> <li>• Receiving</li> <li>• Unpacking</li> <li>• Checking final preparations</li> <li>• Transporting within the pharmacy</li> <li>• Placing in storage***</li> </ul>	<b>All HDs</b>	No, single gloves only	No	No	No	No	No
<b>All formulations</b>	<ul style="list-style-type: none"> <li>• Cutting, crushing, or otherwise manipulating tablets and capsules</li> <li>• Reconstituting oral and topical powders</li> <li>• Sterile and non-sterile compounding</li> </ul>	<b>All HDs</b>	Yes (Phenol use double nitrile gloves)	Yes	Yes	No	No	Yes
<ul style="list-style-type: none"> <li>• <b>Tablets</b></li> <li>• <b>Capsules</b></li> <li>• <b>Oral or topical liquids</b></li> </ul>	<ul style="list-style-type: none"> <li>• Counting or repackaging</li> <li>• Pouring liquids from one container to another</li> </ul>	<b>All HDs</b>	No, single gloves only	No	No	No	No	No
<b>Spills and leaks</b>	• Cleaning spills	<b>All HDs</b>	Yes	Yes	Yes	Yes	Yes	N/A
<b>Cleaning</b>	• Monthly cleaning of Biological Safety Cabinet (BSC)	<b>All HDs</b>	Yes	Yes	Yes	Yes	Yes	Yes

\*For monthly cleaning of BSC, large spills (requiring more than one spill kit), or any spill of the following medications, a Powered Air Purifying Respirator (PAPR) with chemical cartridge is worn: Carmustine, Cisplatin, Cyclophosphamide, Etoposide, 5-fluorouracil, Ifosfamide, Nitrogen mustard, Thiotepe. For all other spills, an N-95 respirator is worn.

\*\*If BSC is not available, refer to the PPE Chart for Activities Performed Outside of the Pharmacy. Exceptions for compounding in a BSC include sterile formulations of the following non-antineoplastics: fluconazole, fosphenytoin, oxytocin, phenytoin, valproate sodium, voriconazole, and zoledronic acid per Assessments of Risk (AoR); follow Pharmacy SOPs for compounding in a laminar airflow workbench (LAFW) in a non-hazardous (positive pressure) buffer room.

\*\*\*Handling hazardous medications during automated medication cabinet activities (e.g., loading, removing, returning) is considered minimal risk and no PPE is required.

# VUMC Hazardous Medication List

This document correlates directly with VUMC Policy: Hazardous Medication Handling

Refer to Hazardous Medication Precautions - Personal Protective Equipment (PPE) charts to identify PPE; note separate charts for activities performed outside the pharmacy vs within the pharmacy

Note: Antineoplastic medications are highlighted in yellow

Generic Name	Trade Name(s) [Combination products included, not all Trade Names listed]
abacavir	Epzicom, Triumeq, Trizivir, Ziagen
abemaciclib	Verzenio
abiraterone	Yonsa, Zytiga
acalabrutinib	Calquence
acitretin	Soriatane
ado-trastuzumab	Kadcyla
afatinib	Gilotrif
alectinib	Alecensa
alitretinoin	Panretin
alpelisib	Piqray
altretamine	Hexalen
ambrisentan	Letairis
amsacrine	AMSA PD
anastrozole	Arimidex
apalutamide	Erleada
apomorphine	Apokyn, Kynmobi
arsenic trioxide	Trisenox
avapritinib	Ayvakit
axitinib	Inlyta
aza <b>CITID</b> ine	Onureg, Vidaza
aza <b>THIO</b> prine	Azasan, Imuran
BCG vaccine	Theracys; Tice Vaccine
belantamab mafodotin-blmf	Blenrep
belinostat	Beleodaq
bendamustine	Belrapzo, Bendeka, Treanda
bexarotene	Targretin
bicalutamide	Casodex
binimetinib	Mektovi
bleomycin	Blenoxane
bortezomib	Velcade
bosentan	Tracleer
bosutinib	Bosulif
brentuximab vedotin	Adcetris
brigatinib	Alunbrig
busulfan	Busulfex; Myleran
cabazitaxel	Jevtana
cabergoline	Dostinex
cabozantinib	Cabometyx, Cometriq
capecitabine	Xeloda
capmatinib	Tabrecta
car <b>BAM</b> azepine	Carbatrol, Epitol, Equetro, Tegretol

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Note: Antineoplastic medications are highlighted in yellow	
Generic Name	Trade Name(s) [Combination products included, not all Trade Names listed]
<b>CARBO</b> platin	Paraplatin
carfilzomib	Kyprolis
carmustine	BiCNU, Gliadel
ceritinib	Zykadia
cetorelix	Cetrotide
chlorambucil	Leukeran
chloramphenicol	Chloromycetin, Econochlor
choriogonadotropin	Ovidrel
cidofovir	Vistide
<b>CIS</b> platin	Platinol-AQ
cladribine	Leustatin; 2-CDA, Mavenclad
clofarabine	Clolar
clomi <b>PHENE</b>	Clomid
clonaze <b>PAM</b>	Klonopin
cobimetinib	Cotellic
colchicine	Col-Probenecid, Colcrys, Gloperba, Mitigare
crizotinib	Xalkori
cyclophosphamide	Cytosan
cyclo <b>SPORINE</b>	Sandimmune; Neoral; Gengraf
cytarabine	ARA-C; Cytosar-U
cytarabine, liposomal	Depocyt, Vyxeos
dabrafenib	Tafinlar
dacarbazine	DTIC
dacomitinib	Vizimpro
<b>DACTIN</b> omycin	Cosmegen
darolutamide	Nubeqa
dasatinib	Sprycel
<b>DAUNO</b> rubicin	Cerubidine, Daunomycin
<b>DAUNO</b> rubicin, liposomal	Daunoxome, Vyxeos
decitabine	Dacogen, Inqovi
deferiprone	Ferriprox
degarelix	Firmagon
dexrazoxane	Zinecard; Totect
diethylstilbestrol	NA
dihydroergotaminie	D.H.E 45, Migranal
dinoprostone	Prepidil
<b>DOCE</b> taxel	Taxotere
<b>DOXO</b> rubicin	Adriamycin
<b>DOXO</b> rubicin, liposomal	Doxil, Lipodox
dronedarone	Multaq
dutasteride	Avodart, Jalyn
efavirenz	Atripla, Sustiva, Symfi
enasidenib	Idhifa

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enfortumab vedotin	Padcev
entecavir	Baraclude
entrectinib	Rozlytrek
enzalutamide	Xtandi
epi <b>RUB</b> icin	Ellence
erdafitinib	Balversa
eri <b>BUL</b> in	Halaven
erlotinib	Tarceva
eslicarbazepine	Aptiom
estradiol	All trade names
estramustine	Emcyt, Estracyt
estrogens (including conjugated and esterified)	All trade names
estropipate	Ogen
etoposide (including phosphate salt form)	Etopophos, Toposar, VP 16
everolimus	Afinitor
exemestane	Aromasin
exenatide	Bydureon, Byetta
fam-trastuzumab deruxtecan-nxki	Enhertu
fedratinib	Inrebic
finasteride	Propecia, Proscar
fingolimod	Gilenya
floxuridine	FUDR
fluconazole	Diflucan
fludarabine	Fludara
fluorouracil	Carac, Fluoroplex, Fluorouracil (5-FU), Efudex, Tolak
fluoxymersterone	Androxy
flutamide	Eulexin
formaldehyde	Formalin
fosphenytoin	Cerebyx
fostamatinib	Tavalisse
fulvestrant	Faslodex
<b>GAN</b> ciclovir	Cytovene, Gancyk-rtu, Zirgan
ganirelix	Antagon
gefitinib	Iressa
gemcitabine	Gemzar, Infugem
gemtuzumab ozogamicin	Mylotarg
gilteritinib	Xospata
gonadotropin (chorionic)	Novarel, Pregnyl
goserelin	Zoladex
histrelin	Supprelin, Vantas
hydrochloric acid (2N concentrated solution; diluted 0.1N, 1.5N, or 0.2N solution; Bernstein test for NG)	hydrochloric acid
hydroxyurea	Droxia, Hydrea, Siklos

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Generic Name	Trade Name(s) [Combination products included, not all Trade Names listed]
ibrutinib	Imbruvica
icatibant	Firazyr
<b>IDA</b> rubicin HCL	<b>IDA</b> rubicin HCL
idelalisib	Zydelig
ifosfamide	Ifex
imatinib mesylate	Gleevec
inotuzumab ozogamicin	Besponsa
irinotecan	Camptosar, Onivyde
<b>ISO</b> retinoin	Absorica, Accutane, Amnesteem, Claravis, Myorisan, Zenatane
ivabradine	Corianor
ivosidenib	Tibsovo
ixabepilone	Ixempra
ixazomib	Ninlaro
lapatinib	Tykerb
larotrectinib	Vitrakvi
leflunomide	Arava
lenalidomide	Revlimid
lenvatinib	Lenvima
letrozole	Femara, KISqali
leuprolide	Eligard, Fensolvi, Lupaneta, Lupron
liraglutide recombinant	Saxenda, Victoza
lomitapide	Juxtapid
lomustine	Gleostine
lurbinectedin	Zepzelca
macitentan	Opsumit
margetuximab-cmkb	Margenza
mechlorethamine	Mustargen, Valchlor
megestrol	Megace, Megestrol
melphalan	Alkeran, Evomela
menotropins	Menopur
mercaptopurine	Purinethol, Purixan
meth <b>MA</b> azole	Tapazole
<b>METHO</b> trexate	Otrexup, Rasuvo, Reditrex, Trexall, Xatmep
methylethergonovine	Methergine
midostaurin	Rydapt
mi <b>FEPRIS</b> tone	Korlym, Mifeprex
miltefosine	Impavido
mipomersen	Kynamro
mi <b>SOPROS</b> tol	Cytotec
mito <b>MY</b> cin	Jelmyto, Mitosol, Mutamycin
mitotane	Lysodren
mito <b>XANTRONE</b>	Novantrone
mycopheno <b>LATE</b> mofetil	Cellcept

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Generic Name	Trade Name(s) [Combination products included, not all Trade Names listed]
mycopheno <b>LIC ACID</b>	Myfortic
nab- <b>PACL</b> itaxel protein-bound particles	Abraxane
nafarelin	Synarel
nelarabine	Arranon
neratinib	Nerlynx
nevirapine	Viramune
nilotinib	Tasigna
nintedanib	Ofev
niraparib	Zejula
olaparib	Lynparza
olaratumab	Lartruvo
omacetaxin	Synribo
osimertinib	Tagrisso
ospemifene	Osphena
<b>OXAL</b> iplatin	Eloxatin
<b>OX</b> carbazepine	Oxtellar, Trileptal
<b>OXY</b> tocin	Pitocin
<b>PACL</b> itaxel	Taxol
palbociclib	Ibrance
palifermin	Kepivance
pamidronate	Aredia
panobinostat	Farydak
<b>PAR</b> oxetine	Brisdelle, Paxil, Pexeva
pasireotide	Signifor
<b>PAZO</b> panib	Votrient
<b>PEME</b> trexed disodium	Alimta
pemigatinib	Pemazyre
pentetate calcium trisodium	N/A
pentostatin	Nipent
pertuzumab	Perjeta, Phesgo
pexidartinib	Turalio
phenol	N/A
phenoxybenzamine	Dibenzyline
phenytoin	Dilantin, Phenytext
pipobroman	Vercite
plerixafor	Mozobil
polatuzumab vedotin	Polivy
pomalidomide	Pomalyst
<b>PONAT</b> inib	Iclusig
<b>PRAL</b> atrexate	Folotyn
procarbazine	Matulane
progestins (including progesterones)	All trade names
propylthiouracil	Propyl-Thyracil

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Generic Name	Trade Name(s) [Combination products included, not all Trade Names listed]
raloxifene	Evista
rasagiline	Azilect
regorafenib	Stivarga
relugolix	Orgovyx
ribavirin	Virazole, Rebetrol
ribociclib	Kisqali
riociguat	Adempas
ripretinib	Qinlock
romiDEPsin	Istodax
rucaparib	Rubraca
ruxolitinib	Jakafi
sacituzumab govitecan-hziy	Trodely
selumetinib	Koselugo
siponimod	Mayzent
sirolimus	Rapamune
sonidegib	Odomzo
<b>SORA</b> fenib	Nexavar
spironolactone	Aldactone, Aldactazide, Carospir
streptozocin	Zanosar
<b>SUNI</b> tinib	Sutent
ta <b>CROL</b> imus	Astragraf XL, Envarsus XR, Prograf, Protopic
talazoparib	Talzenna
talimogene laherparepvec	Imlygic
tamoxifen	Soltamox
tazemetostat	Tazverik
temazepam	Restoril
temozolomide	Temodar
temsirolimus	Torisel
teniposide	Vumon
teriflunomide	Aubagio
testosterones (including methylTESTOSTERone)	All trade names
thalidomide	Thalomid
thioguanine	Tabloid
thiotepa	Tepadina
tofacitinib	Xeljanz
to <b>PIRA</b> mate	Qsymia, Qudexy XR, Topamax, Trokendi XR
topotecan	Hycamtin
toremifene	Fareston
trabectedin	Yondelis
trametinib	Mekinist
trastuzumab	Herceptin, Herceptin Hylecta, Herzuma, Kanjinti, Ogivri, Phesgo
tretinoin (All Trans Retinoic Acid or ATRA)	Retin-A, Vesanoid
trifluridine/tipiracil hydrochloride	Lonsurf



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Generic Name	Trade Name(s) [Combination products included, not all Trade Names listed]
triptorelin	Trelstar, Triptodur
ulipristal	Ella, Logilia
upadacitinib	Rinvoq
uracil mustard	NA
valGANciclovir	Valcyte
valproate/valproic acid derivatives (including divalproex)	Depakote
valrubicin	Valstar
vandetanib	Caprelsa
vemurafenib	Zelboraf
venetoclax	Venclexta
vigabatrin	Sabril, Vigadrone
vinBLAS <sup>tine</sup>	vinBLAS <sup>tine</sup>
vinCRIS <sup>tine</sup>	Marqibo, Vincaspar PFS
vinorelbine	Navelbine
vismodegib	Erivedge
voriconazole	Vfend
vorinostat	Zolinza
warfarin	Coumadin, Jantoven
zidovudine	Combivir, Retrovir, Trizivir
ziprasidone	Geodon
ziv-aflibercept	Zaltrap
zoledronic acid	Reclast, Zometa
zonisamide	Zonegran
<b>References:</b> 1. National Institute for Occupational Safety and Health (NIOSH) List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016. Retrieved from <a href="http://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list_2016-161.pdf">http://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list_2016-161.pdf</a> 2. Vanderbilt Specialty Pharmacy Drug List, 3. VUMC Safety Policy: Hazardous Medication Handling 4. Pharmacy SOP: Hazardous Medication and Product Handling	