

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 Protection	N-95 Respirator Mask
Antineoplastic	Tablets, Capsules and Oral Liquids	Administration from unit-dose package	No, single gloves only	No	Yes, if eye exposure potential**	No
		• Cutting, crushing, or otherwise manipulating tablets and capsules* • Administering manipulated tablets and capsules	Yes	Yes	Yes, if eye exposure potential**	Yes
	Injectables, Topicals and Other Dosage Forms	• Administering • Withdrawing from vial or ampoule	Yes	Yes	Yes, if eye exposure potential**; Required with BCG and Talimogene Laherparepvec	Yes, if inhalation potential***; Required with BCG
	Contaminated body fluid, clothing, dressings, linens, and other materials	Disposal and cleaning	Yes	Follow Standard Precautions	Yes, if eye exposure potential**	Yes, if inhalation potential***
Non-Antineoplastic	Tablets, Capsules and Oral Liquids	Administration from unit-dose package	No, single gloves only	No	Yes, if eye exposure potential**	No
		• Cutting, crushing, or otherwise manipulating tablets and capsules* • Administering manipulated tablets and capsules	No, single gloves only	No	Yes, if eye exposure potential**	Yes
	Injectables, Topicals and Other Dosage Forms	• Administering • Withdrawing from vial or ampoule	No, single gloves only	No	Yes, if eye exposure potential**	Yes, if inhalation potential***
	Contaminated body fluid, clothing, dressings, linens, and other materials	Disposal and cleaning	No, single gloves only	Follow Standard Precautions	Yes, if eye exposure potential**	Yes, if inhalation potential***
All HDs	Spills and leaks	Cleaning	Yes	Yes	Yes	Yes

* 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.

** Eyeface shields to be worn when there is risk of emesis or liquid could splash (e.g., working above eye level, cleaning spills, surgery bladder treatments, aerosol treatments, disposal of contaminated body fluids). Goggles to be worn with face shields when full eye and face protection is needed.

***N-95 Respiratory Mask to be worn when there is risk of splashes, droplets, sprays, or airborne particles (e.g., irrigation solutions, aerosol treatments).

PPE Chart Last Revised: May 2019

HAZARDOUS MEDICATION PRECAUTIONS: PERSONAL PROTECTIVE EQUIPMENT (PPE)

For Activities Performed Within the Pharmacy

Formulation	Activity	Type of HD	Double Gloves	Hazardous (Chemo) Gown	Eye Protection	N-95 Respirator Mask	Perform in Biological Safety Cabinet
All formulations	• Receiving • Unpacking • Placing in storage	All HDs	No, single gloves only	No	No	No	No
All formulations	• Cutting, crushing, or otherwise manipulating tablets and capsules • Sterile and non-sterile compounding	All HDs	Yes (Phenol use double nitrile gloves)	Yes	No	No	Yes
• Tablets • Capsules • Oral or topical liquids	• Counting or repackaging* • Pouring from one container to another**	All HDs	No, single gloves only	No	No	No	No
Spills and leaks	Cleaning	All HDs	Yes	Yes	Yes	Yes	N/A

* Use clean equipment dedicated for use with hazardous medications and decontaminate after every use. Do not use pre-packaging or automated counting machines for antineoplastic tablets and capsules.

** Use caution when pouring liquids to prevent spills

Type of HD

Table 1 Antineoplastic

Table 2 Non-Antineoplastic

Table 3 Non-Antineoplastics adverse
Reproduction

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

Note: Antineoplastic medications are highlighted in yellow

Generic Name	Trade Name
abacavir	Ziagen
abemaciclib	Verzenio
abiraterone	Yonsa, Zytiga
acalabrutinib	Calquence
acitretin	Soriatane
ado-trastuzumab	Kadcyla
afatinib	Gilotrif

Type/Table

alectinib	Alecensa	
alitretinoin	Panretin	
altretamine	Hexalen	
ambrisentan	Letairis	
amsacrine	AMSA PD	
anastrozole	Arimidex	1
apalutamide	Erleada	
apomorphine	Apokyn	
arsenic trioxide	Trisenox	
axitinib	Inlyta	
aza CITID ine	Vidaza	
aza THIO prine	Imuran	2
baricitinib	Olumiant	
BCG vaccine	Theracys; Tice Vaccine	
belinostat	Beleodaq	
bendamustine	Bendeka, Treanda	
bexarotene	Targretin	
bicalutamide	Casodex	1
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	
car BAM azepine	Tegretol	2
CARBO platin	Paraplatin	
carfilizomib	Kyprolis	
carmustine	BiCNU, Gliadel	
ceritinib	Zykadia	
cetorelix	Cetrotide	
Note: Antineoplastic medications are highlighted in yellow		
Generic Name	Trade Name	
chlorambucil	Leukeran	
chloramphenicol	Econochlor; Chloromycetin	
choriogonadotropin	Ovidrel	
cidofovir	Vistide	
CIS platin	Platinol-AQ	
cladribine	Leustatin; 2-CDA	
clofarabine	Clofar	
clom IPHENE	Clomid	
clonaze PAM	Klonopin	3
cobimetinib	Cotellic	
colchicine	Colcrys	3
crizotinib	Xalkori	
cyclophosphamide	Cytosan	
cyclo SPORINE	Sandimmune; Neoral; Gengraf	2
cytarabine	ARA-C; Cytosar-U	
cytarabine, liposomal	Depocyt	
dabrafenib	Tafinlar	
dacarbazine	DTIC	
daclatasvir	Vizimpro	
DACTIN omycin	Cosmegen	
dasatinib	Sprycel	1
DAUNO rubicin	Cerubidine; Daunomycin	
DAUNO rubicin, liposomal	Daunoxome	
decitabine	Dacogen	
deferiprone	Ferriprox	
degarelix	Firmagon	
dexrazoxane	Zinecard; Totect	
diethylstilbestrol	NA	
dinoprostone	Prepidil	
divalproex	Depakote	2
DOCE taxel	Taxotere	
DOXO rubicin	Adriamycin	
DOXO rubicin, liposomal	Doxil; Lipodox	
dronedarone	Multaq	
dutasteride	Avodart	
efavirenz	Sustiva	
enasidenib	Idhifa	
entecavir	Baraclude	2
enzalutamide	Xtandi	

epi RUB icin	Ellence	
ergonovine/methylegonovine	Ergotrate, Methergine	
eri BUL in	Halaven	
erlotinib	Tarceva	1
eslicarbazepine	Aptiom	
Note: Antineoplastic medications are highlighted in yellow		
Generic Name	Trade Name	
estradiol	All trade names	2
estramustine	Estracyt	2
estrogen/progesterone combinations	All trade names	2
estrogens	All trade names	
estropipate	Ogen	
etoposide	Toposar; VP 16	
etoposide phosphate	Etopophos	
everolimus	Afinitor	
exemestane	Aromasin	
finasteride	Propecia; Proscar	3
fingolimod	Gilenya	
floxuridine	FUDR	
fluconazole	Diflucan	3
fludarabine	Fludara	
fluorouracil	Fluorouracil (5-FU), Efudex	
fluoxymesterone	Halotestin	
flutamide	Eulexin	
fosphenytoin	Cerebyx	
fostamatinib	Tavalisse	
fulvestrant	Faslodex	
ganciclovir	Cytovene	
ganirelix	Antagon	
gefitinib	Iressa	
gemcitabine	Gemzar	
gemtuzumab ozogamicin	Mylotarg	
gonadotropin, chorionic	Novarel, Pregnyl	
goserelin	zoladex	
histrelin	Supprelin	
hydrochloric acid (2N concentrated solution; diluted	hydrochloric acid	
hydroxyurea	Hydrea	
ibrutinib	Imbruvica	
icatibant	Firazyr	
ID Arubicin HCL	ID Arubicin HCL	
idelalisib	Zydelig	
ifosfamide	Ifex	
imatinib mesylate	Gleevec	
inotuzumab ozogamicin	Besponsa	
irinotecan	Camptosar	
ISO retinoin	Accutane, Claravis	
ivosidenib	Tibsovo	
ixabepilone	Ixempra	
ixazomib	Ninlaro	
lapatinib	Tykerb	
leflunomide	Arava	2
Note: Antineoplastic medications are highlighted in yellow		
Generic Name	Trade Name	
lenalidomide	Revlimid	
lenvatinib	Lenvima	
letrozole	Femara	
leuprolide	Eligard, Lupron	
liraglutide recombinant	Victoza	2
lomitapide	Juxtapid	
lomustine	CeeNU	
macitentan	Opsumit	
mechlorethamine	Mustargen	
medroxy PROGESTER one acetate	Provera, Depo-Provera, Depo-SubQ Provera	2
megestrol	Megace, Megestrol	1
melphalan	Alkeran, Evomela	
menotropins	Repronex	
mercaptopurine	Purinethol	
meth IMA azole	Tapazole	2
METHO trexate	Mexate-AQ	
methyl TESTOSTER one	Android, Methitest	
midostaurin	Rydapt	
mifepristone	Korlym	
mipomersen	Kynamro	
mi SOPROS tol	Cytotec	3
mito MY cin	Mutamycin	

mitotane	Lysodren	
mito XANTRONE	Novantrone	
mycopheno LATE mofetil	Cellcept	2
mycopheno LIC ACID	Myfortic	
nab- PAC Litaxel protein-bound particles	Abraxane	
nafarelin	Synarel	
nelarabine	Arranon	
neratinib	Nerlynx	
nevirapine	Viramune	2
nilotinib	Tasigna	
nintedanib	Ofev	
niraparib	Zejula	
olaparib	Lynparza	
olaratumab	Lartruvo	
omacetaxin	Synribo	
osimertinib	Tagrisso	
ospemifene	Osphena	
Oxaliplatin	Eloxatin	
OX carbazepine	Trileptal	2
oxytocin	Pitocin, Syntocinon	
PAC Litaxel	Taxol	
Note: Antineoplastic medications are highlighted in yellow		
Generic Name	Trade Name	
palbociclib	Ibrance	
palifermin	Kepivance	
paliperidone	Invega	2
pamidronate	Aredia	
panobinostat	Farydak	
PAR oxetine	Paxil	3
pasireotide	Signifor	
PAZOP anib	Votrient	
PEM etrexed disodium	Alimta	
pentetate calcium trisodium	N/A	
pentostatin	Nipent	
pertuzumab	Perjeta	
phenol	N/A	
phenoxybenzamine	Dibenzyline	
phenytoin	Dilantin	2
pipobroman	Vercite	
plerixafor	Mozobil	
pomalidomide	Pomalyst	
PONAT inib	Iclusig	
PRAL atrexate	Folotylin	
procarbazine	Matulane	
progesterone	All trade names	
progestins	All trade names	
propylthiouracil	Propyl-Thyracil	2
raloxifene	Evista	2
rasagiline	Azilect	
regorafenib	Stivarga	
ribavirin	Virazole, Rebetrol	
ribociclib	Kisqali	
riociguat	Adempas	
risperi DONE	Risperdal	2
romi DEP sin	Istodax	
rucaparib	Rubraca	
ruxolitinib	Jakafi	
sirolimus	Rapamune	
sonidegib	Odomzo	
SORAF enib	Nexavar	
spironolactone	Aldactone	2
streptozocin	Zanosar	
SUN itinib	Sutent	
tacrolimus	Astragraf XL, Envarsus XR, Prograf, Protopic	2
talazoparib	Talzenna	
talimogene laherparepvec	Imlygic	
tamoxifen	Nolvadex	1
Note: Antineoplastic medications are highlighted in yellow		
Generic Name	Trade Name	
telavancin	Vibativ	
temazepam	Restoril	3
temozolomide	Temodar	
temsirolimus	Torisel	
teniposide	Vumon	
teriflunomide	Aubagio	

testosterone	All trade names	
thalidomide	Thalomid	
thioguanine	Tabloid	
thiotepa	Thiotepa, Tepadina	
tofacitinib	Xeljanz	
topiramate	topamax	3
topotecan	Hycamtin	
toremifene	Fareston	
trabectedin	Yondelis	
trametinib	Mekinist	
trastuzumab	Herceptin	
trastuzumab / hyaluronidase	Herceptin Hylecta	
tretinoin (All Trans Retinoic Acid or ATRA)	Retin-A, Vesanoid	3
trifluridine/tipiracil hydrochloride	Lonsurf	
triptorelin	Trelstar, Triptodur	
ulipristal	Ella	
uracil mustard	NA	
valGANCiclovir	Valcyte	
valproate/valproic acid	Depakote	3
valrubicin	Valstar	
vandetanib	Caprelsa	
vemurafenib	Zelboraf	
venetoclax	Venclexta	
vigabatrin	Sabril	
vinBLAStine	vinBLAStine	
vinCRIStine	Vincaspar PFS	
vinorelbine	Navelbine	
vismodegib	Erivedge	
voriconazole	Vfend	3
vorinostat	Zolinza	
warfarin	Coumadin	3
zidovudine	Retrovir	2
ziprasidone	Geodon	3
ziv-aflibercept	Zaltrap	
zoledronic acid	Reclast, Zometa	
zonisamide	Zonegran	3
Note: Antineoplastic medications are highlighted in yellow		
Generic Name	Trade Name	
References:		
1. National Institute for Occupational Safety and Health (NIOSH) List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016. Retrieved from http://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list_2016-161.pdf		
2. Vanderbilt Specialty Pharmacy Drug List,		
3. VUMC Safety Policy: Hazardous Medication Handling		
4. Pharmacy SOP: Hazardous Medication and Product Handling		