



## Hazardous Drug List\*

This list is intended to guide health care providers in diverse practice settings and should not be construed as complete representations of all of the hazardous drugs used at the referenced institutions.

Drug	Source	AHFS^ Pharmacologic-therapeutic classification
Acitretin	7	88:04 Vitamin A
Aldesleukin	4,5	10:00 Antineoplastic agents
Ambrisentan	7	24:12.92 Vasodilating agents, miscellaneous
Alefacept	6	84:92 Skin and mucous membrane agents, miscellaneous
Alitretinoin	3,4,5	84:92 Skin and mucous membrane agents, miscellaneous
Altretamine	1,2,3,4,5	10:00 Antineoplastic agents
Amsacrine	3,5	Not in AHFS (antineoplastic agent)
Anastrozole	1,5	10:00 Antineoplastic agents
Arsenic trioxide	1,2,3,4,5	10:00 Antineoplastic agents
Asparaginase	1,2,3,4,5	10:00 Antineoplastic agents
Azacitidine	3,5	10:00 Antineoplastic agents
Azathioprine	2,3,5	92:44 Immunosuppressant agents
Bacillus Calmette-Guerin (BCG) <sup>†</sup>	1,2,4	80:12 Vaccines
Bendamustine HCl	7	10:00 Antineoplastic agents
Bexarotene	2,3,4,5	10:00 Antineoplastic agents
Bicalutamide	1,5	10:00 Antineoplastic agents
Bleomycin	1,2,3,4,5	10:00 Antineoplastic agents
Bortezomib	6	10:00 Antineoplastic agents
Bosentan	6	24:12.92 Vasodilating agents, miscellaneous
Busulfan	1,2,3,4,5	10:00 Antineoplastic agents
Cabergoline	7	28:36.20.04 Ergot-derivative dopamine receptor agonists
Capecitabine	1,2,3,4,5	10:00 Antineoplastic agents
Carbamazepine	7	28:12.92 Anticonvulsants, miscellaneous
Carboplatin	1,2,3,4,5	10:00 Antineoplastic agents
Carmustine	1,2,3,4,5	10:00 Antineoplastic agents
Cetrorelix acetate	5	92:40 Gonadotropin-releasing hormone antagonists
Chlorambucil	1,2,3,4,5	10:00 Antineoplastic agents
Chloramphenicol	1,5	8:12.08 Chloramphenicols
Choriogonadotropin alfa	5	68:18 Gonadotropins

**(Continued). Hazardous Drug List\***

<b>Drug</b>	<b>Source</b>	<b>AHFS Pharmacologic-therapeutic classification</b>
Cidofovir	3,5	8:18.32 Nucleosides and nucleotides
Cisplatin	1,2,3,4,5	10:00 Antineoplastic agents
Cladribine	1,2,3,4,5	10:00 Antineoplastic agents
Clofarabine	6	10:00 Antineoplastic agents
Clonazepam	7	28:12.08 Benzodiazepines
Colchicine	5	92:16 Antigout agents
Cyclophosphamide	1,2,3,4,5	10:00 Antineoplastic agents
Cyclosporin	1	92:44 Immunosuppressive agents
Cytarabine	1,2,3,4,5	10:00 Antineoplastic agents
Dacarbazine	1,2,3,4,5	10:00 Antineoplastic agents
Dactinomycin	1,2,3,4,5	10:00 Antineoplastic agents
Dasatinib	6	10:00 Antineoplastic agents
Daunorubicin HCl	1,2,3,4,5	10:00 Antineoplastic agents
Decitabine	6	10:00 Antineoplastic agents
Degarelix	7	10:00 Antineoplastic agents
Denileukin	3,4,5	10:00 Antineoplastic agents
Diethylstilbestrol	5	Not in AHFS (nonsteroidal synthetic estrogen)
Dinoprostone	5	76:00 Oxytocics
Docetaxel	1,2,3,4,5	10:00 Antineoplastic agents
Doxorubicin	1,2,3,4,5	10:00 Antineoplastic agents
Dronedarone HCl	7	24:04.04 Antiarrhythmics
Dutasteride	5	92:08 5-alpha reductase inhibitors
Entecavir	6	8:18.32 Nucleosides and nucleotides
Epirubicin	1,2,3,4,5	10:00 Antineoplastic agents
Ergonovine/ methyletergonovine	5	76:00 Oxytocics
Estradiol	1,5	68:16.04 Estrogens
Estramustine phosphate	1,2,3,4,5	10:00 Antineoplastic agents
Estrogen-progestin combinations	5	68:12 Contraceptives
Estrogens, conjugated	5	68:16.04 Estrogens
Estrogens, esterified	5	68:16.04 Estrogens

See footnotes at end of table

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**(Continued). Hazardous Drug List\***

<b>Drug</b>	<b>Source</b>	<b>AHFS Pharmacologic-therapeutic classification</b>
Estrone	5	68:16.04 Estrogens
Estropipate	5	68:16.04 Estrogens
Etoposide	1,2,3,4,5	10:00 Antineoplastic agents
Everolimus	7	10:00 Antineoplastic agents
Exemestane	1,5	10:00 Antineoplastic agents
Finasteride	1,3,5	92:08 5-alpha reductase inhibitors
Floxuridine	1,2,3,4,5	10:00 Antineoplastic agents
Fludarabine	1,2,3,4,5	10:00 Antineoplastic agents
Fluorouracil	1,2,3,4,5	10:00 Antineoplastic agents
Fluoxymesterone	5	68:08 Androgens
Flutamide	1,2,5	10:00 Antineoplastic agents
Fulvestrant	5	10:00 Antineoplastic agents
Ganciclovir	1,2,3,4,5	8:18.32 Nucleosides and nucleotides
Ganirelix acetate	5	92:40 Gonadotropin-releasing hormone antagonists
Gemcitabine	1,2,3,4,5	10:00 Antineoplastic agents
Gemtuzumab ozogamicin	1,3,4,5	10:00 Antineoplastic agents
Gonadotropin, chorionic	5	68:18 Gonadotropins
Goserelin	1,2,5	10:00 Antineoplastic agents
Hydroxyurea	1,2,3,4,5	10:00 Antineoplastic agents
Idarubicin	1,2,3,4,5	10:00 Antineoplastic agents
Ifosfamide	1,2,3,4,5	10:00 Antineoplastic agents
Imatinib mesylate	1,3,4,5	10:00 Antineoplastic agents
Irinotecan HCl	1,2,3,4,5	10:00 Antineoplastic agents
Ixabepilone	7	10:00 Antineoplastic agents
Leflunomide	3,5	92:36 Disease-modifying antirheumatic agents
Lenalidomide	6	92:20 Biologic response modifiers
Letrozole	1,5	10:00 Antineoplastic agents
Leuprolide acetate	1,2,5	10:00 Antineoplastic agents
Lomustine	1,2,3,4,5	10:00 Antineoplastic agents
Mechlorethamine	1,2,3,4,5	10:00 Antineoplastic agents
Medroxyprogesterone acetate	6	68:32 Progestins
Megestrol	1,5	10:00 Antineoplastic agents

See footnotes at end of table

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**(Continued). Hazardous Drug List\***

<b>Drug</b>	<b>Source</b>	<b>AHFS Pharmacologic-therapeutic classification</b>
Melphalan	1,2,3,4,5	10:00 Antineoplastic agents
Menotropins	5	68:18 Gonadotropins
Mercaptopurine	1,2,3,4,5	10:00 Antineoplastic agents
Methotrexate	1,2,3,4,5	10:00 Antineoplastic agents
Methyltestosterone	5	68:08 Androgens
Mifepristone	5	76:00 Oxytocics
Mitomycin	1,2,3,4,5	10:00 Antineoplastic agents
Mitotane	1,4,5	10:00 Antineoplastic agents
Mitoxantrone HCl	1,2,3,4,5	10:00 Antineoplastic agents
Mycophenolate mofetil	1,3,5	92:44 Immunosuppressive agents
Mycophenolic acid	7	92:44 Immunosuppressive agents
Nafarelin	5	68:18 Gonadotropins
Nelarabine	6	10:00 Antineoplastic agents
Nilotinib	7	10:00 Antineoplastic agents
Nilutamide	1,5	10:00 Antineoplastic agents
Oxaliplatin	1,3,4,5	10:00 Antineoplastic agents
Oxcarbazepine	7	28:12.92 Anticonvulsants, miscellaneous
Oxytocin	5	76:00 Oxytocics
Paclitaxel	1,2,3,4,5	10:00 Antineoplastic agents
Palifermin	6	84:16 Cell stimulants and proliferants
Paroxetine**	6, 7	28:16.04.20 Selective serotonin uptake inhibitors
Pazopanib HCl	7	10:00 Antineoplastic agents
Pegaspargase	1,2,3,4,5	10:00 Antineoplastic agents
Pemetrexed	6	10:00 Antineoplastic agents
Pentamidine isethionate	1,2,3,5	8:30.92 Antiprotozoals, miscellaneous
Pentetate calcium trisodium <sup>††</sup>	6	Not in AHFS
Pentostatin	1,2,3,4,5	10:00 Antineoplastic agents
Phenoxybenzamine HCl	7	12:16.04.04 Non-selective alpha-adrenergic blocking agents
Pipobroman	3,5	Not in AHFS (antineoplastic agent)
Plerixafor	7	20:16 Hematopoietic agents
Podofilox	5	84:92 Miscellaneous skin and mucous membrane agents (mitotic inhibitor)

See footnotes at end of table

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**(Continued). Hazardous Drug List\***

<b>Drug</b>	<b>Source</b>	<b>AHFS Pharmacologic-therapeutic classification</b>
Podophyllum resin	5	84:92 Skin and mucous membrane agents, miscellaneous
Pralatrexate	7	10:00 Antineoplastic agents
Procarbazine	1,2,3,4,5	10:00 Antineoplastic agents
Progesterone	5	68:32 Progestins
Progestins	5	68:12 Contraceptives
Raloxifene	5	68:16.12 Estrogen agonists-antagonists
Rasagiline mesylate	6	28:36 Antiparkinsonian agents
Ribavirin	1,2,5	8:18.32 Nucleosides and nucleotides
Risperidone	6	28:16.08.04 Atypical antipsychotics
Romidepsin	7	10:00 Antineoplastic agents
Sirolimus	6	92:44 Immunosuppressive agents
Sorafenib	6	10:00 Antineoplastic agents
Streptozocin	1,2,3,4,5	10:00 Antineoplastic agents
Sunitinib malate	6	10:00 Antineoplastic agents
Tacrolimus	1,5	92:44 Immunosuppressive agents
Tamoxifen	1,2,5	10:00 Antineoplastic agents
Televancin	7	8:12.28.16 Glycopeptides
Temozolomide	3,4,5	10:00 Antineoplastic agents
Temsirolimus	7	10:00 Antineoplastic agents
Teniposide	1,2,3,4,5	10:00 Antineoplastic agents
Testolactone	5	10:00 Antineoplastic agents
Testosterone	5	68:08 Androgens
Tetracycline HCl	7	8:12.24 Tetracyclines
Thalidomide	1,3,5	92:20 Biologic response modifiers
Thioguanine	1,2,3,4,5	10:00 Antineoplastic agents
Thiotepa	1,2,3,4,5	10:00 Antineoplastic agents
Topotecan	1,2,3,4,5	10:00 Antineoplastic agents
Toremifene citrate	1,5	10:00 Antineoplastic agents
Tretinoin	1,2,3,5	84:16 Cell stimulants and proliferants
Trifluridine	1,2,5	52:04.20 Antivirals
Triptorelin	5	10:00 Antineoplastic agents
Uracil mustard	3,5	Not in AHFS (antineoplastic agent)

See footnotes at end of table

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**(Continued). Sample List of Drugs that Should be Handled as Hazardous\***

<b>Drug</b>	<b>Source</b>	<b>AHFS Pharmacologic-therapeutic classification</b>
Valganciclovir	1,3,5	8:18.32 Nucleosides and nucleotides
Valproic acid/ divalproex Na	7	28:12.92 Anticonvulsants, miscellaneous
Valrubicin	1,2,3,5	10:00 Antineoplastic agents
Vidarabine	1,2,5	Not in AHFS
Vigabatrin	7	28:12.92 Anticonvulsants, miscellaneous
Vinblastine sulfate	1,2,3,4,5	10:00 Antineoplastic agents
Vincristine sulfate	1,2,3,4,5	10:00 Antineoplastic agents
Vinorelbine tartrate	1,2,3,4,5	10:00 Antineoplastic agents
Vorinostat	6	10:00 Antineoplastic agents
Zidovudine	1,2,5	8:18:08 Antiretroviral agents
Ziprasidone HCl	7	28:16.08.04 Atypical antipsychotics
Zoledronic acid	7	92:24 Bone resorption inhibitors
Zonisamide	6	28:12.92 Anticonvulsants, miscellaneous

\*These lists of hazardous drugs were used with the permission of the institutions that provided them and were adapted for use by NIOSH. Some drugs defined as hazardous may not pose a significant risk of direct occupational exposure because of their dosage formulation (for example, intact medications such as coated tablets or capsules that are administered to patients without modifying the formulation). However, they may pose a risk if solid drug formulations are altered outside a ventilated cabinet (for example, if tablets are crushed or dissolved, or if capsules are pierced or opened).

^AHFS stands for American Hospital Formulary Service

†BCG preparation should be done using aseptic techniques. To avoid cross-contamination, parenteral drugs should not be prepared in areas where BCG has been prepared. A separate area for the preparation of BCG suspension is recommended. All equipment, supplies, and receptacles in contact with BCG should be handled and disposed of as biohazardous. If preparation cannot be performed in a containment device, then respiratory protection, gloves and a gown should be worn to avoid inhalation or contact with BCG organisms.

1. The NIH Clinical Center, Bethesda, MD (Revised 8/2002). The NIH Health Clinical Center Hazardous Drug (HD) List is part of the NIH Clinical Center's hazard communication program. It was developed in compliance with the OSHA hazard communication standard [29 CFR 1910.1200] as it applies to hazardous drugs used in the workplace. The list is continually revised and represents the diversity of medical practice at the NIH Clinical Center; however, its content does not reflect an exhaustive review of all FDA-approved medications that may be considered hazardous, and it is not intended for use outside the NIH.
2. The Johns Hopkins Hospital, Baltimore, MD (Revised 9/2002).
3. The Northside Hospital, Atlanta, GA (Revised 8/2002).
4. The University of Michigan Hospitals and Health Centers, Ann Arbor, MI (Revised 2/2003)
5. This sample listing of hazardous drugs was compiled by the Pharmaceutical Research and Manufacturers of America (PhRMA) using information from the AHFS DI monographs published by ASHP in selected AHFS Pharmacologic-Therapeutic Classification categories [ASHP/AHFS DI 2003] and applying the definition for hazardous drugs. The list also includes drugs from other sources that satisfy the definition for hazardous drugs [PDR 2004; Sweetman 2002; Shepard 2001; Schardein 2000; REPROTOX 2003]. Newly approved drugs that have structures or toxicological profiles that mimic the drugs on this list should also be included. This list was revised in June 2004.
6. NIOSH addition 2010 updated using ASHP/AHFS DI 2010.
7. NIOSH addition 2012 updated using ASHP/AHFS DI 2011.

\*\*2010, Paroxetine HCl; 2012, Paroxetine mesylate

††Refers to non-radio-labeled formulation only.

## Drugs Deleted from 2010 Appendix A

### Drugs reclassified as not meeting criteria for a hazardous drug\*

Drug	AHFS Pharmacologic-therapeutic classification
alemtuzumab	10:00 Antineoplastic agents
interferon alfa 2a	10:00 Antineoplastic agents
interferon alfa 2b	10:00 Antineoplastic agents
interferon alfa n3	10:00 Antineoplastic agents

### Radio-pharmaceuticals that are regulated by Nuclear Regulatory Commission, which directs how they are handled†

Drug	AHFS Pharmacologic-therapeutic classification
ibritumomab tiuxetan	10:00 Antineoplastic agents
tositumomab	10:00 Antineoplastic agents

\*The 2004 NIOSH list of hazardous drugs was a compilation of hazardous drug lists provided by other organizations.

These four drugs were reviewed using the NIOSH criteria and found not to meet the criteria for listing as hazardous.

†Regulations for handling radiopharmaceuticals can be found at: U.S. NRC: Medical Uses of Nuclear Materials, [<http://www.nrc.gov/materials/miau/med-use.html>].