



Colorado Department  
of Public Health  
and Environment

# Examples of Health Care Wastes That are Hazardous Wastes

Revised: 10-5-11



This list is provided as a guide to help environmental professionals in the health care sector identify hazardous wastes. It is based on the Colorado Hazardous Waste Regulation (6 CCR 1007-3) as of June 30, 2011. Hazardous wastes known or suspected to be present in the health care industry are included in this list. However, this list is not all inclusive; other hazardous wastes may occur in a health care setting. Facility chemical inventories should be checked for ALL hazardous wastes found in the Colorado Hazardous Waste Regulations. Also, please note that variations in formulations, brands, dosages, or other variations in a pharmaceutical waste may alter its hazardous waste status. Generators must make their own hazardous waste determinations for their facilities. Some wastes may have more than one waste code.

## Examples of Potential **P-listed** Hazardous Wastes in Health Care <sup>1,2,3,4</sup>

| Waste Code | Constituent of Concern                     | Other Names/Brand Names                                                                                            | Remarks                                                    |
|------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| P001       | Warfarin & salts<br>(concentration > 0.3%) | <ul style="list-style-type: none"> <li>Coumadin</li> </ul>                                                         | Blood thinner                                              |
| P012       | Arsenic trioxide                           | <ul style="list-style-type: none"> <li>Trisenox</li> </ul>                                                         | Antineoplastic                                             |
| P046       | Phentermine                                | <ul style="list-style-type: none"> <li>Phentermine</li> </ul>                                                      | Controlled Substance                                       |
| P075       | Nicotine & salts                           | <ul style="list-style-type: none"> <li>Nicotine patches (Habitrol, Nicoderm, Nicorette, Nicotrol, etc.)</li> </ul> | Used for smoking cessation                                 |
| P188       | Physostigmine salicylate                   | <ul style="list-style-type: none"> <li>Eserine salicylate</li> </ul>                                               | Treatment for glaucoma (ophthalmic solution) & Alzheimer's |
| P204       | Physostigmine                              | <ul style="list-style-type: none"> <li>Eserine</li> </ul>                                                          | Treatment for glaucoma (ophthalmic solution) & Alzheimer's |

<sup>1</sup> P-listed Wastes are considered acutely hazardous. Those who generate more than 2.2 lbs per month of acutely hazardous waste are considered large quantity generators. (6CCR 1007-3, Section 261.33(e))

<sup>2</sup> For P-listed waste, any residue remaining in a container or any inner liner removed from a container that has held a P-listed waste must also be managed as a hazardous waste. (261.33(c) and 261.7(b)(3))

<sup>3</sup> In order for a waste to meet the strict definition of a U or P-listed waste, the material must be UNUSED. However, the Department recommends that health care facilities manage both used and unused wastes on the U or P lists as hazardous wastes.

<sup>4</sup> Colorado's regulations are more stringent than the federal regulations at 40 CFR § 261.33(d) with regard to application of P and U-listed waste codes to unused commercial chemical products. In Colorado, formulations may have more than one active ingredient and still meet the listing description. Preservatives are not considered active ingredients for the purpose of the P or U listings. (6CCR 1007-3, Section 261.33(d))

## Examples of Health Care Wastes That are RCRA Hazardous Wastes

| <b>Examples of Potential U-listed RCRA Hazardous Wastes in Health Care</b> <sup>1,2</sup> |                                      |                                                                                                                                                                                         |                                                                                                         |
|-------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <i><b>Waste Code</b></i>                                                                  | <i><b>Constituent of Concern</b></i> | <i><b>Other Names/Brand Names</b></i>                                                                                                                                                   | <i><b>Remarks</b></i>                                                                                   |
| U010                                                                                      | Mitomycin C                          | <ul style="list-style-type: none"> <li>• Mitomycin</li> <li>• Mitomycin C</li> <li>• Mutamycin</li> <li>• Mutamycin VHA Plus</li> </ul>                                                 | Antineoplastic                                                                                          |
| U015                                                                                      | Azaserine                            | <ul style="list-style-type: none"> <li>• Azaserine</li> </ul>                                                                                                                           | Antineoplastic for leukemia                                                                             |
| U034                                                                                      | Chloral / Chloral hydrate            | <ul style="list-style-type: none"> <li>• Chloral hydrate</li> </ul>                                                                                                                     | Controlled Substance                                                                                    |
| U035                                                                                      | Chlorambucil                         | <ul style="list-style-type: none"> <li>• Leukeran</li> </ul>                                                                                                                            |                                                                                                         |
| U044                                                                                      | Chloroform                           | <ul style="list-style-type: none"> <li>• Chloroform</li> </ul>                                                                                                                          | Not commonly seen                                                                                       |
| U058                                                                                      | Cyclophosphamide                     | <ul style="list-style-type: none"> <li>• CTX</li> <li>• Cytoxan injection</li> <li>• Lycophilized/VHA Plus</li> <li>• Neosar</li> <li>• Procytox</li> </ul>                             | Antineoplastic                                                                                          |
| U059                                                                                      | Daunomycin                           | <ul style="list-style-type: none"> <li>• Daunorubicin</li> <li>• Cerubidin</li> <li>• DaunoXome</li> <li>• Rubidomycin</li> <li>• Liposomal</li> <li>• Idarubicin / Idamycin</li> </ul> | Antineoplastic                                                                                          |
| U075                                                                                      | Dichlorodifluoromethane              | <ul style="list-style-type: none"> <li>• Dichlorodifluoromethane</li> </ul>                                                                                                             |                                                                                                         |
| U089                                                                                      | Diethylstilbesterol                  | <ul style="list-style-type: none"> <li>• Diethylstilbestrol</li> <li>• DES (synthetic estrogen)</li> <li>• Stilphostrol</li> </ul>                                                      |                                                                                                         |
| U122                                                                                      | Formaldehyde                         | <ul style="list-style-type: none"> <li>• Formaldehyde</li> </ul>                                                                                                                        | Waste formalin that has been used for tissue preservation does not meet the hazardous waste definition. |
| U121                                                                                      | Trichloromonofluoromethane           | <ul style="list-style-type: none"> <li>• Trichlorofluoromethane</li> </ul>                                                                                                              |                                                                                                         |

# Examples of Health Care Wastes That are RCRA Hazardous Wastes

| <b>Examples of Potential U-listed RCRA Hazardous Wastes in Health Care</b> <sup>1,2</sup> |                                         |                                                                                                                       |                                     |
|-------------------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| <b>Waste Code</b>                                                                         | <b>Constituent of Concern</b>           | <b>Other Names/Brand Names</b>                                                                                        | <b>Remarks</b>                      |
| U129                                                                                      | Lindane                                 | <ul style="list-style-type: none"> <li>• G-Well shampoo</li> <li>• Kwell shampoo</li> <li>• Lindane Lotion</li> </ul> | Used for lice and scabies treatment |
| U132                                                                                      | Hexachlorophene                         | <ul style="list-style-type: none"> <li>• Phisohex disinfectant</li> </ul>                                             |                                     |
| U150                                                                                      | Melphalan                               | <ul style="list-style-type: none"> <li>• Alkeran</li> <li>• L-PAM</li> <li>• Melphalan</li> </ul>                     |                                     |
| U151                                                                                      | Mercury                                 | <ul style="list-style-type: none"> <li>• Mercury</li> </ul>                                                           |                                     |
| U182                                                                                      | Paraldehyde                             | <ul style="list-style-type: none"> <li>• Paral</li> <li>• Paraldehyde</li> </ul>                                      | Controlled Substance                |
| U187                                                                                      | Phenacetin                              | <ul style="list-style-type: none"> <li>• Acetophenetidin</li> </ul>                                                   | Typically for veterinary use        |
| U188                                                                                      | Phenol                                  | <ul style="list-style-type: none"> <li>• Phenol</li> <li>• Liquified phenol</li> </ul>                                |                                     |
| U200                                                                                      | Reserpine                               | <ul style="list-style-type: none"> <li>• Reserpine</li> </ul>                                                         |                                     |
| U201                                                                                      | Resorcinol                              | <ul style="list-style-type: none"> <li>• Resorcinol</li> </ul>                                                        |                                     |
| U205                                                                                      | Selenium sulfide                        | <ul style="list-style-type: none"> <li>• Exsel shampoo</li> <li>• Selenium sulfide</li> <li>• Selsun</li> </ul>       |                                     |
| U206                                                                                      | Streptozotocin                          | <ul style="list-style-type: none"> <li>• Streptozotocin</li> <li>• Streptozocin</li> <li>• Zanosar</li> </ul>         |                                     |
| U237                                                                                      | Uracil mustard                          | <ul style="list-style-type: none"> <li>• Uracil mustard</li> <li>• Uramustine</li> </ul>                              | Not commonly seen                   |
| U248                                                                                      | Warfarin & salts (concentration ≤ 0.3%) | <ul style="list-style-type: none"> <li>• Warfarin</li> </ul>                                                          | Blood thinner                       |

<sup>1</sup> In order for a waste to meet the strict definition of a U or P-listed waste, the material must be UNUSED. However, the Department recommends that health care facilities manage both used and unused wastes on the U or P list as hazardous wastes.

<sup>2</sup> Colorado's regulations are more stringent than the federal regulations of 40 CFR § 261.33(d) with regard to application of P and U-listed waste codes to unused commercial chemical products. In Colorado, formulations may have more than one active ingredient and still meet the listing description. Preservatives are not considered active ingredients for the purpose of the P or U listings. (6CCR 1007-3, Section 261.33(d))

# Examples of Health Care Wastes That are RCRA Hazardous Wastes

| <b>Examples of Potential F-listed RCRA Hazardous Wastes in Health Care <sup>1</sup></b>                                                                                                                                                                                                                                                                            |                         |                    |                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------|----------------------------------------|
| Waste Code                                                                                                                                                                                                                                                                                                                                                         | Constituents of Concern | Potential Examples | Remarks                                |
| F003 <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                  | Xylene                  |                    | Used for slide processing in histology |
| F003 <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                  | Acetone                 |                    | Used in laboratory                     |
| F003 <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                  | Methanol                |                    | Used for gram stains in laboratory     |
| F005 <sup>2</sup>                                                                                                                                                                                                                                                                                                                                                  | Toluene                 |                    | Used for slide processing in histology |
| <sup>1</sup> - These F-listings apply to spent solvents and certain spent solvent mixtures/blends. The description of these wastes codes are abbreviated in this document. Please see 6 CCR 1007-3, Section 261.31(a) for the complete regulatory language.                                                                                                        |                         |                    |                                        |
| <sup>2</sup> A hazardous waste that is listed solely because it exhibits one or more characteristics of ignitability as defined under § 261.21, corrosivity as defined under § 261.22, or reactivity as defined under § 261.23 is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste. (6CCR 1007-3, Section 261.3(g)(1)) |                         |                    |                                        |

# Examples of Health Care Wastes That are RCRA Hazardous Wastes

| <b>Examples of Potential D-Code RCRA Hazardous Wastes in Health Care <sup>1</sup></b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste Code/<br/>Characteristic</b>                                                 | <b>Criteria</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Potential Examples</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Remarks</b>                                                                                                                                                                               |
| D001/<br>Ignitable <sup>2</sup>                                                       | <ul style="list-style-type: none"> <li>• A liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, with a flash point less than 60°C (140°F) <b>OR</b></li> <li>• A non-liquid capable of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard <b>OR</b></li> <li>• an ignitable compressed gas</li> </ul> | <ul style="list-style-type: none"> <li>• Erythromycin topical gel, 2%</li> <li>• HurriCaine topical anesthetic spray</li> <li>• Vi-Jon Antiseptic Mouthwash</li> <li>• Flexible Collodion</li> <li>• Compound W Liquid Wart Remover</li> <li>• Cyanide Antidote Kit (Amyl nitrate inhalant)</li> <li>• Ethyl Chloride (Skin Refrigerant)</li> <li>• Gram Stain, Safranin</li> <li>• Listerine Antiseptic</li> <li>• Toposar (chemo)</li> <li>• Etoposide (chemo)</li> <li>• Dexamethasone (anti-inflammatory)</li> <li>• PacliTaxel (chemo)</li> <li>• Silver nitrate applicator sticks (oxidizer)</li> <li>• Benzoin Compound Tincture</li> </ul> | <p>There are numerous pharmaceuticals and laboratory chemicals that exhibit the characteristic of ignitability.</p> <p>Reminder: These are just some examples- not a comprehensive list.</p> |
| D002/<br>Corrosive <sup>3</sup>                                                       | <ul style="list-style-type: none"> <li>• A liquid with a pH less than or equal to 2 or greater than or equal to 12.5 <b>OR</b></li> <li>• A liquid that corrodes steel</li> </ul>                                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>• Decalcification solution used in histology</li> <li>• Tresaderm (veterinary antibiotic)</li> <li>• Advia 120 EZ Kleen (lab)</li> <li>• Compounding chemicals</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                              |

# Examples of Health Care Wastes That are RCRA Hazardous Wastes

| Examples of Potential <b>D-Code</b> RCRA Hazardous Wastes in Health Care <sup>1</sup> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste Code/<br>Characteristic                                                         | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Potential Examples                                                                                                                                                                                                                                                                                    | Remarks                                                                                                                                                                                                                                               |
| D003/<br>Reactive <sup>4</sup>                                                        | <ul style="list-style-type: none"> <li>• Waste that is normally unstable and readily undergoes violent change without detonating <b>OR</b></li> <li>• Waste that reacts violently with water <b>OR</b></li> <li>• Waste that forms potentially explosive mixtures with water <b>OR</b></li> <li>• Waste that is reactive when mixed with water <b>OR</b></li> <li>• Waste that is cyanide or sulfide bearing and can generate toxic gases, vapors or fumes.</li> </ul> |                                                                                                                                                                                                                                                                                                       | <p>No current health care sector examples available.</p> <p>Note: Most formulations of medicinal nitroglycerin do not meet the definition of “reactive” and therefore are not hazardous wastes.</p>                                                   |
| D004/Toxic <sup>5</sup>                                                               | Arsenic $\geq 5.0$ mg/l                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Arsenic Trioxide</li> <li>• Trisenox</li> </ul>                                                                                                                                                                                                              |                                                                                                                                                                                                                                                       |
| D005/Toxic <sup>5</sup>                                                               | Barium $\geq 100$ mg/l                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• Some barium contrasts used in radiology</li> </ul>                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |
| D006/Toxic <sup>5</sup>                                                               | Cadmium $\geq 1.0$ mg/l                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Some mineral supplements</li> </ul>                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                       |
| D009/Toxic <sup>5</sup>                                                               | Mercury $\geq 0.2$ mg/l                                                                                                                                                                                                                                                                                                                                                                                                                                                | <ul style="list-style-type: none"> <li>• Thimerosal</li> <li>• Tetanus Toxoid</li> <li>• Meningococcus vaccine</li> <li>• Influenza vaccines (Fluzone, Fluvirin, FluLaval, Afluria)</li> <li>• Phenylmercuric acetate (some lab reagents)</li> <li>• Mercuric Chloride (some lab reagents)</li> </ul> | <p>Thimerosal contains mercury; may be used as a preservative for some multi-dose vaccines, ophthalmic drops, and nasal sprays.</p> <p>Phenylmercuric acetate, mercuric chloride, or other mercury compounds may be found in laboratory reagents.</p> |

# Examples of Health Care Wastes That are RCRA Hazardous Wastes

| <b>Examples of Potential D-Code RCRA Hazardous Wastes in Health Care</b> <sup>1</sup>                                                                                                           |                       |                                                                                                                                                  |                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>Waste Code/<br/>Characteristic</b>                                                                                                                                                           | <b>Criteria</b>       | <b>Potential Examples</b>                                                                                                                        | <b>Remarks</b>             |
| D010/Toxic <sup>5</sup>                                                                                                                                                                         | Selenium ≥1.0 mg/l    | <ul style="list-style-type: none"> <li>• Selsun Shampoo</li> </ul>                                                                               | Dandruff shampoo           |
| D011/Toxic <sup>5</sup>                                                                                                                                                                         | Silver ≥5.0 mg/l      | <ul style="list-style-type: none"> <li>• Silver Sulfadiazine Cream</li> <li>• SSD</li> <li>• Silver nitrate applicator sticks</li> </ul>         | Used for wound care        |
| D013/Toxic <sup>5</sup>                                                                                                                                                                         | Lindane ≥0.4 mg/l     | <ul style="list-style-type: none"> <li>• Lindane lotion</li> </ul>                                                                               | Treatment of lice, scabies |
| D022/Toxic <sup>5</sup>                                                                                                                                                                         | Chloroform ≥ 6.0 mg/l | <ul style="list-style-type: none"> <li>• Chloroform</li> </ul>                                                                                   | Not commonly seen          |
| D024/Toxic <sup>5</sup>                                                                                                                                                                         | m-cresol ≥ 200 mg/l   | <ul style="list-style-type: none"> <li>• Human Insulin (NovoLog, Novolin R, Novolin N, Novolin 70/30, Lantus, Humalog QuickPen, etc.)</li> </ul> | Treatment of diabetes      |
| <sup>1</sup> Wastes with D Codes are described in 6CCR 1007-3, Sections 261.20 through 261.24.                                                                                                  |                       |                                                                                                                                                  |                            |
| <sup>2</sup> The description of this waste category is abbreviated in this document. Please see the complete definition of the characteristic of "ignitability" at 6CCR 1007-3, Section 261.21. |                       |                                                                                                                                                  |                            |
| <sup>3</sup> The description of this waste category is abbreviated in this document. Please see the complete definition of the characteristic of "corrosivity" at 6CCR 1007-3, Section 261.22.  |                       |                                                                                                                                                  |                            |
| <sup>4</sup> The description of this waste category is abbreviated in this document. Please see the complete definition of the characteristic of "reactivity" at 6CCR 1007-3, Section 261.23.   |                       |                                                                                                                                                  |                            |
| <sup>5</sup> The description of this waste category is abbreviated in this document. Please see the complete definition of the characteristic of "toxicity" at 6CCR 1007-3, Section 261.24.     |                       |                                                                                                                                                  |                            |