**Office of Research and Development (ORD)** **Guidance:**

**Safe Segregation and Disposal of Laboratory Waste**

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**Issuing Office: ORD Biomedical Research Laboratory Biosafety and Biosecurity Program**

**For questions on the content within this guidance, email** **VHACOORDBiosafety@va.gov**

**Objective:**

Promote awareness of and compliance with policies and procedures on regulated waste among VA staff working in biomedical and clinical research laboratories.

**Intended Usage:**

To support initial and refresher training of VA laboratory and support staff on the characterization, segregation, processing, storage, transport, and disposal of regulated waste. This is intended to serve as a training supplement for VHA staff and to be included in the Research Facility Laboratory Safety Manual.

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**Safe Segregation and Disposal of Laboratory Waste**

**Introduction**

There are different types of waste generated in a research and/or diagnostic laboratory. The most common waste categories are the following:

1. **Hazardous Waste** (Hazwaste) is waste that is considered ignitable, corrosive, reactive, or toxic. Proper identification, labeling and packaging of hazardous waste is required according to federal and state regulations, and institutional policy.
2. **Medical Waste** is all waste that contains biological components that may be infectious or harmful to human health as defined by the OSHA Bloodborne Pathogen Standard. This includes but is not limited to solid biohazardous waste, pathological waste, pharmaceutical waste, trace-chemotherapy waste and similar. Please consult local and state regulations on requirements for regulated medical waste.
3. **Radioactive Waste** examples include dry radioactive lab waste and contaminated equipment, liquid scintillation vials and fluid waste (including non-radioactive LSC waste), radioactive animal waste and similar.
4. **General Waste and Recyclables** is comprised ofsolid waste that does not meet the above descriptions. i.e., uncontaminated wrapping and packaging materials.
5. **Other Waste**for waste that does not meet the above descriptions, contact your Safety Office or waste contractor representative to properly classify unique waste.

***NOTE:*** *Medical waste is typically regulated by a state entity charged with enforcement of statutory requirements related to the environment or public health. It is important to review your state and local waste regulations and contact the respective authority or authorities in your state prior to implementing procedures for disposing of medical waste.*

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| Issue | Recommendation |
| Workers not trained about hazards associated with exposure to clinical and laboratory waste | Train (initial and refresher) all workers in hazard awareness, prevention, and control of exposures to hazardous laboratory waste |
| Improper labelling, segregation, processing, storage, transport, and disposal of laboratory waste (e.g., general waste versus biohazardous waste) | Review your current policies and practices to ensure proper labelling, segregation, processing, storage, transport, and disposal of laboratory wasteAt least annually conduct a survey/inspection of areas where operations generate regulated waste  |
| Mixing of different types of waste – chemical, biological, sharps | Do not comingle chemical, biological and uncontaminated laboratory waste |
| Use of improper containers for laboratory waste segregation | Provide containers that meet or exceed regulatory specifications for each regulated waste stream |
| Issue | Recommendation |
| Improper labeling of laboratory waste (especially regulated medical waste) | Ensure that clinical and biomedical waste containers are labelled with the biohazard symbol  |
| Improper segregation and disposal of sharps | Dispose of sharps into a puncture-proof container labelled with the biohazard symbol that is capped when not in use  |
| Overfilling of waste bags/containers, including sharps containers. | Hazardous waste containers (including sharps containers):Must be rigid with a lidMust not be filled over 75% volumeLids must be kept on containers at all times when not in use Biohazard bags must be kept inside a closed biohazard waste container at all times |
| Improper transport of laboratory waste (especially regulated medical waste) | Transport the biohazard waste bags inside a hard secondary container labeled with the biohazard symbol with closed lid – Do not carry by hand |
| Improper storage of laboratory waste (especially regulated medical waste and chemical waste) | Store waste in a dedicated storage space labeled with the appropriate hazard warning signage. Do not store biohazard waste bags on the floor, in an autoclave pan, on a cart, or on top of containers.Obtain any necessary permits for waste storage. |
| Improper treatment (processing) and/or disposal of waste | Regulated solid waste must be decontaminated by a validated method, typically using an EPA-approved chemical or treatment or by steam under pressure.Liquid waste is typically chemically treated prior to disposal into the municipal sewer.  |
| Improper classification/prioritization of mixed waste for disposal | Classify regulated waste according to your state regulations. Do not mix regulated waste streams. |
| Improper or unvalidated inactivation methods and procedures, i.e., steam sterilization or chemical inactivation of biohazardous waste | Each load of solid regulated waste to be processed prior to disposal must include a microbial challenge to verify sterilization is complete. Select an [EPA-registered](https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants) disinfectant for use in chemical inactivation of regulated liquid waste contaminated with biological agents.  |

**Additional information**

* Develop and implement a Chemical Hygiene Plan that includes information about exposure hazards and methods to control them
* Provide safety data sheets (SDSs) for each chemical in your inventory
* Train workers as required by OSHA’s Hazard Communication Standard ([29 CFR 1910.1200](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200)) or Laboratory Standard ([29 CFR 1910.1450](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450)), as applicable

**Applicable Regulations and/or Guidelines**

1. Review your policies and procedures annually to ensure compliance with state and local regulations.
2. Occupational Safety and Health Administration (OSHA)
	1. OSHA standards for bloodborne pathogens (BBP, [29 CFR 1910.1030](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1030)) and personal protective equipment (PPE, 29 CFR 1910 Subpart I)
	2. OSHA Laboratory Standard, [29 CFR 1910.1450](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450)
	3. OSHA Hazard Communication Standard, [29 CFR 1910.1200](https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1200)
3. Centers for Disease Control and Prevention (CDC)
	1. [*Guidelines for Environmental Infection Control in Health-Care Facilities (2003)*](https://www.cdc.gov/infectioncontrol/guidelines/environmental/background/medical-waste.html)
4. U.S. Food and Drug Administration (FDA)
	1. [Sharps Disposal Containers](https://www.fda.gov/medical-devices/safely-using-sharps-needles-and-syringes-home-work-and-travel/sharps-disposal-containers)
5. Environmental Protection Agency (EPA)
	1. [84 FR 5816](https://www.federalregister.gov/documents/2019/02/22/2019-01298/management-standards-for-hazardous-waste-pharmaceuticals-and-amendment-to-the-p075-listing-for) (went in effect on August 21, 2019)
	2. [EPA-registered disinfectants](https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants)
6. U.S. Department of Transportation (DOT)
	1. [49 CFR § 173.197](https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-C/part-173/subpart-E/section-173.197) – Regulated medical waste