Fact Sheet

OSU ENVIRONMENTAL HEALTH & SAFETY

Safety Instruction

Disinfectant Guidance for Biological Labs

Introduction

Disinfectants are essential tools for maintaining safe and compliant biological laboratory environments. In BSL-1 and BSL-2 spaces, proper selection and use of disinfectants help prevent the spread of infectious agents and protect researchers, students, and staff. This guidance outlines approved disinfectants, usage protocols, and regulatory requirements specific to Oregon State University laboratories. It also clarifies rules around pre-treatment of cultures and liquid waste, ensuring alignment with Oregon OSHA and DEQ standards. Following these practices supports a safe research environment and ensures proper handling of biological materials.

Regulatory Basis:

- Oregon DEQ Infectious Waste Management Rules: OAR 333-056-0010 through 0050
- Oregon OSHA Bloodborne Pathogens Standard: 29 CFR 1910.1030
- OSU Institutional Biosafety Committee (IBC) oversight: EH&S Biological Safety
- EPA Registered Disinfectants: EPA Disinfectant Lists

Key Principles:

- Bleach (sodium hypochlorite) may be used for surface cleaning but must not be used to pre-treat cultures or infectious waste.
- All infectious waste (e.g., cultures, stocks, contaminated liquids) must be autoclaved or incinerated prior to disposal.
- Disinfectants used in conjunction with autoclaving must be non-corrosive, non-toxic, and compatible with autoclave-safe containers (see table for examples).

Disinfectant Use Guidelines:

Surface Cleaning:

- Clean visibly dirty surfaces before applying disinfectant.
- Follow manufacturer-recommended contact times.
- Use autoclave-safe containers if disinfecting liquid waste prior to autoclaving.

Liquid Infectious Waste:

- Do not pre-treat with bleach or caustic disinfectants.
- Collect in autoclavable containers.
- Autoclave at validated cycles (e.g., 121°C for 30–60 min depending on volume).
- Liquid cultures must be autoclaved regardless of pre-treatment and cannot be poured down the drain.

Vacuum Pump Traps:

- Liquid disinfectant traps may be pre-treated with autoclave-safe disinfectant prior to autoclaving.

Culture Pre-Treatment Summary:

- Cultures may be pre-treated with disinfectants to minimize contaminant growth.
- Pre-treatment must not interfere with autoclave efficacy or produce toxic byproducts.
- Bleach is prohibited for pre-treatment due to incompatibility with autoclaving.

Approved Disinfectants for BSL-1 and BSL-2 Laboratories and Spaces:

These disinfectants are EPA-registered, autoclave-safe, and suitable for use in OSU biological labs:

Product Name	Active Ingredient	Effective Against	Notes
PREempt PLUS	Accelerated Hydrogen Peroxide	Bacteria, Viruses, Fungi	One-step cleaner/disinfectant; non-corrosive
Virox 5	Accelerated Hydrogen Peroxide	Broad spectrum, including TB	Safe for most surfaces; short contact time
Cavicide	Quaternary Ammonium + Alcohol	HIV, HBV, HCV, TB, MRSA	Intermediate level; flammable
Sporicidin	Phenol-based	Bacteria, Fungi, Viruses	Low toxicity; not sporicidal
Oxivir TB	Accelerated Hydrogen Peroxide	Norovirus, MRSA, TB	Fast-acting; safe for plastics
Clorox HealthCare H2O2 Cleaner	Hydrogen Peroxide	Bacteria, Viruses	Hospital-grade; non-bleach
Envirocide	Quaternary Ammonium	Bacteria, Viruses	Surface disinfectant; non-corrosive
Dispatch Hospital Cleaner	Hydrogen Peroxide	TB, MRSA, VRE	Bleach-free

Prohibited Practices:

- Do not discharge untreated infectious liquids into the sewer.
- Do not autoclave bleach-containing waste (risk of toxic fumes and corrosion).
- Do not mix disinfectants unless approved by EH&S.

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