

BioSide Lines

January 2001

The Newsletter of the UW Office of Biological Safety

Efficacy of Bleach as a Disinfectant

Bleach is one of the most effective and least expensive disinfectants. It has the further advantage of being effective against a broad range of pathogens. There are several factors that affect the efficacy of bleach:

- Shelf life. Bleach solutions decay during storage. The manufacturer of Clorox brand suggests storing bleach in an opaque bottle at 50-70°F, where it will maintain effectiveness for about 6 months. If you require 5.25% active ingredient you should change the supply every 3 months. For sanitary purposes (i.e., bloodborne pathogens), EPA and OSHA recommend use of a fresh solution. It is generally accepted practice to make bleach solutions monthly for laboratory disinfection needs.
- Amount of organic material present. The active ingredient is readily bound to organic matter. Therefore, you may need to increase the concentration and contact time accordingly.
- Nature of the pathogen. Some microbes are more sensitive to sodium hypochlorite than others. For example, hepatitis B virus is inactivated with 500 ppm whereas human immunodeficiency virus requires 50 ppm (ref. APCI Handbook of Infection Control).

Generic household bleach typically contains 5.25% sodium hypochlorite. However, you should check the label because some brands have a significantly lower concentration. Solutions ranging in concentration from approximately 500 ppm (1:100 dilution) to 5,000 ppm (1:10 dilution) sodium hypochlorite are effective, depending on the amount of organic material present on the surface to be cleaned and disinfected.

There are a couple more things you need to know about bleach: Sodium hypochlorite is a hazardous chemical. Ideally, you want to avoid replacing a biological hazard with a chemical hazard that might introduce greater potential harm. Also, sodium hypochlorite is corrosive, even in dilute solutions. Metal surfaces that are treated with bleach, such as the inside of a biological safety cabinet, should subsequently be wiped with sterile water or 70% ethanol. And finally, solutions that contain bleach should not be autoclaved since the stainless steel components of the autoclave may be damaged. In summary, bleach often is the disinfectant of choice, but it should be used with caution.

Staffing Changes at OBS

Jan Klein has accepted the Biological Safety Officer position, filling the vacancy left by the departure of Joe Kanabrocki. Jan joined the staff of OBS in 1997. Her affiliation with the UW Institutional Biosafety Committee dates back to service as a public member while employed as Agricultural Biotechnology Specialist with the Wisconsin Department of Agriculture, Trade and Consumer Protection. Jan will focus on keeping operations moving smoothly and improving communication with researchers. Please feel free to call (263-9026) or email (jklein@fpm.wisc.edu) with your suggestions on how we can improve biological safety on this campus.

The vacancy created by Jan's promotion is available for hiring. Applications are being accepted for the Assistant Biological Safety Officer (Asst. Researcher). **The submission deadline is Jan. 10, 2001.** See PVL#38852 at the Academic Placement Office website <http://www.ohr.wisc.edu/pvl/index.html> for more information.

The Spill Protocol

The purpose of the spill protocol is accident preparedness. Generic spill protocols for hazardous biological materials are available at the biosafety website. The spill protocol should be individualized to hazards in a given laboratory. The first step is to identify potential hazards and possible accident scenarios, and then prepare instructions for mitigation. While it is tempting to suggest that the first step is to notify a supervisor, the correct first step in such a procedure typically is to alert others in the immediate area of the hazard and leave the room. Contact OBS if you would like assistance in preparing a spill protocol for your laboratory.

Transport of Hazardous Materials on Campus

Strict regulations apply when hazardous materials are transported in commerce and by air, but what about the same materials when transported by staff across campus? While such an activity is not subject to Department of Transportation regulations, the same standards of care apply.

For moving infectious substances between buildings, you should use sturdy, leakproof packaging that has enough absorbent material for the amount of liquid in the package. A declaration of dangerous goods need not be prepared, but you should communicate the hazard by labeling the primary and the outer containers. Use a biohazard symbol for microbes classified as risk group 2 or 3, indicate the technical name, and a contact for additional information. Consider a worst-case scenario and be prepared to deal with the consequences.

Training: Shipping Infectious Substances and Other Biological Materials

The Office of Biological Safety will provide training and certification for shipping infectious substances and other biological materials, with a focus on safety and regulatory compliance for research laboratories. The Department of Transportation requires that persons involved in shipping hazardous materials in commerce be trained and certified in proper handling of these materials.

Thursday, January 18, 2001

Union South

9:00 to 11:00 a.m.

Refreshments will be served.

Registration is required. Contact Jan Klein at 3-9026 or jklein@fpm.wisc.edu.

Staff approaching their two-year expiration for certification will receive a notice in advance of that date. You are welcome (and encouraged) to attend the class. The option to be recertified via computer-based training will soon be available as an alternative.

FAQ

Can I add a grant title to an existing biosafety protocol? Yes grant information may be added to an existing protocol if the biological materials, methods, and the hazards posed by their use are unchanged. The process is simple. We ask that you submit the first page of the current biosafety protocol form, the Core Registration Information with your signature. Minor changes to the protocol may be noted in an attachment. The protocol review and expiration dates and the safety committee number will not change.