



Department of Biological Safety



Biosafety News

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?????? ASK BIOSAFETY ????????

A UK researcher inquires:

Seems like most of the bleach currently available is the concentrated stuff. I have been successful in the past in finally securing bottles of the old formulation, but am unsure of how long that will be possible. How does one account for the newer concentrated formula and the drip-free stuff as well?

Great question! As you know, a final solution of 10% household bleach (5,000 ppm available hypochlorite) is the common recommendation as a broad spectrum germicide for use in routine disinfection of contaminated surfaces and liquid wastes from infectious cultures.

Regular household bleach is anywhere between 5.25-6.0% sodium hypochlorite (ex: Clorox is approximately 5.25%). However, these older formulations are swiftly disappearing in favor of concentrated and splash-less varieties. The newer concentrated formulas are commonly 8.25% sodium hypochlorite. Conversely, the gel and splash-less bleach products are much lower and can be as low as 1% and no more than 5% sodium hypochlorite. So how will this information impact your dilutions?

The formula to determine the amounts you need to achieve the desired 5000ppm, or 0.5% hypochlorite concentration for proper disinfections is:

$$C1 \times V1 = C2 \times V2$$

C1 is the initial concentration of the bleach (sodium hypochlorite) solution.

V1 is the volume of the bleach to be diluted with water. This is what you are trying to calculate.

C2 is the concentration of the diluted bleach solution you are preparing.

V2 is the volume of bleach solution you are preparing.

Just to give you an idea of calculated amounts, for approximately 1L of appropriately diluted bleach:

Bleach (5.25% NaOCl) : 100 ml bleach + 0.9 L water

Bleach (6 % NaOCl) : 87.5 ml bleach + 0.91 L water

Bleach (8.25% NaOCl) : 63.64 ml bleach + 0.94 L water

Usage of splash-less or drip free formulas is **NOT** recommended for use as a disinfectant in your laboratory procedures. If necessary, you should assume a concentration of 1% sodium hypochlorite.

check it out!

An excellent resource for molecular biology animations and tutorials is available at :

<http://www.molecularmovies.com/showcase/>



175 days until ...

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BETTER BIO AWARDS

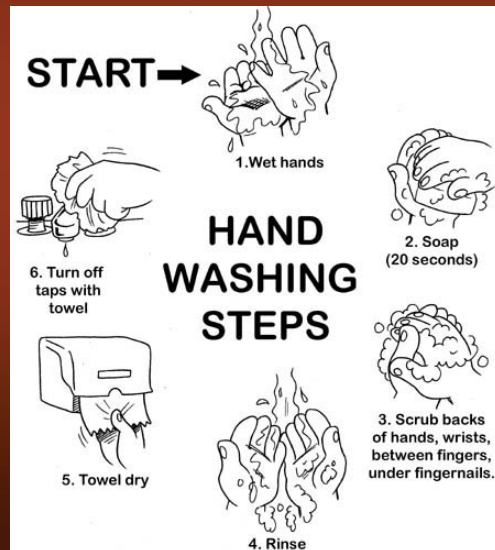


*The Dept. of Biological Safety would like to thank the following labs
for setting a shining example of lab housekeeping and maintenance.
Well done!*

*Butterfield lab (Chem Phys)
Garneau-Tsodikova lab (BioPharm)
Graf lab (BioPharm)
Feola lab (BioPharm)*

Biosafety Reminder:

Believe it or not, one of the most common findings in our visits to research laboratories is the lack of soap and/or paper towels at the sink! Proper hand washing is the number one most effective way to decrease laboratory acquired infections and to prevent contraction of common illnesses from others. In fact, OSHA standards require an employer to provide these supplies. Please keep your sinks stocked and keep the workplace safe for yourself and others. Hands should be washed after glove removal and before exiting the laboratory.



University of Kentucky

Department of Biological Safety

As part of the Division of Environmental Health & Safety, the Department of Biological Safety is responsible for programs concerning the safe use of recombinant and synthetic nucleic acids, infectious agents, and potentially infectious materials such as human sourced materials in the research and teaching laboratories at the University of Kentucky. This includes training, auditing, and consulting with researchers, laboratory personnel and teaching staff concerning compliance with the federal and state laws and regulations in these areas.

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