

MAJOR PROGRAM POINTS

"PREVENTING CONTAMINATION IN THE LABORATORY"

Part of the "LABORATORY SAFETY SERIES"

Quality Safety and Health Products, for Today...and Tomorrow

Outline of Major Points Covered in the "Preventing Contamination in the Laboratory " Course

The following outline summarizes the major points of information presented in the course on "Preventing Contamination in the Laboratory". The outline can be used to survey the course before taking it on a computer, as well as to review the course when a computer is not available.

- **Handling hazardous chemicals and specimens requires a great deal of caution.**
 - Hazards can spread and contaminate the things around them.
 - Even laboratory employees can be affected.
- **Everyday operations call on laboratory employees to handle many hazardous substances.**
 - Toxins.
 - Corrosives.
 - Carcinogens.
 - And others.
- **Laboratory employees think they spend a lot of time protecting themselves.**
 - Are they really doing all they can?
 - Tiny amounts of a hazardous material, combined with a few unconscious errors, can cause contamination.

**** *"Luminescent Dye" demonstration of the spread of contamination.***

- **To prevent contamination several things must be protected:**
 - The products we work with.
 - Our work space.
 - Ourselves.

- **To effectively shield ourselves from contamination we must be aware of potential hazards. Things we can do include:**
 - Reading product labels.
 - Consulting Material Safety Data Sheets.

- **There are four major "routes of entry" by which contamination can enter the body:**
 - Inhalation.
 - Eye contact.
 - Skin contact, absorption and injection.
 - Ingestion.

- **To protect ourselves we must use a combination of:**
 - Engineering controls.
 - Safe work practices.
 - Personal protective equipment (PPE).

- **Personal protective equipment is especially important. When you use it you should:**
 - Inspect it before you put it on.
 - Replace damaged items.
 - Make sure there is a proper fit.

- **At a minimum you should wear:**
 - Gloves.
 - A lab coat.
 - Safety eyewear.
 - Face shields should be worn if there is a danger of chemical splashes.

- **You need to anticipate the hazards that are presented by the materials you are working with.**
 - Talk to your supervisor to make sure you are fully protected.
 - Monitor the condition of your PPE.
 - Immediately replace damaged PPE.
 - Also replace any PPE that may become contaminated.

- **Pay special attention to your gloves.**
 - Perspiration on the inside can make gloves permeable.
 - Liquids on the outside can have the same effect.
 - Change gloves at least once every two hours (or as soon as they get wet.)
- **Using engineering controls is also important.**
 - Splashguards and blast shields can protect against chemical contact.
 - Exhaust hoods and other ventilation devices keep fumes and vapors away.
 - Consult your supervisor about the controls that you should use.
- **Safe work practices must also be followed.**
- **Good housekeeping is very important.**
 - Keep work areas neat and orderly.
 - Avoid clutter.
 - Use small containers when possible.
 - When you are finished using something, return it to where it belongs.
- **Spills should be cleaned up as quickly as possible.**
 - Follow proper disposal procedures.
 - Always decontaminate the area.
- **When you are finished with equipment, make sure it is cleaned and decontaminated.**
 - Cleaning/decontamination should also be performed at the end of the day.
- **If glassware can't be cleaned immediately, soak it in soap and water. This:**
 - Cuts down on contamination.
 - Makes clean-up easier.

- **You should plan for the disposal of hazardous or infectious waste before starting to work.**
 - Follow your facility's written policy.
 - Don't pour chemicals down the drain.
 - Incorrect disposal could contaminate drinking water and the environment.
- **Whenever you leave your area it is important not to take contamination with you. This is true whether you are:**
 - On a break.
 - Going to lunch.
 - Going home.
- **Leave notebooks and supplies in the laboratory.**
 - Anything you use in your work area should be considered to be contaminated.
- **Other things you should do when leaving the lab area include:**
 - Washing your hands.
 - Taking off PPE and lab coats.
- **Poor safety practices can increase the risk of ingesting hazardous material. You should never:**
 - Take materials to lunch.
 - Bring food/drink into the lab.
 - Wash plates or utensils in lab sinks.
- **Remember, contaminants move easily from one part of the body to another.**
 - Avoid habits like rubbing your face or scratching your head.
 - Guard against ingestion by never mixing contaminants with non-contaminated objects.
- **It is also important to protect the materials that you are working with.**
 - Samples can be contaminated by other substances.
 - Hours or even days of work can be ruined.

- **To prevent contaminating materials:**
 - Keep work surfaces and equipment clean.
 - Check surfaces and tools before, during and after you work with them.
 - Decontaminate all equipment after using it.
 - Use proper cleaning methods (be particularly careful with powders and other dry substances).

*** * * SUMMARY * * ***

- **Keeping things free from contamination is critical to safe and productive lab operations.**
- **Work carefully.**
- **Know what you're dealing with.**
- **Don't make assumptions.**
- **Use correct engineering controls.**
- **Maintain good housekeeping skills.**
- **Wear PPE and dispose of it properly.**
- **Most importantly, be mindful of those who work before you...and considerate of those who work after you.**