



Emergency Response

2018



Emergency Response plan (ERP)

- Provide basics of emergency response
- Issues be addressed early in the planning of laboratory work
- All staff must understand the biological and other hazard associated with the work
- All staff must be prepared respond effectively to personnel accident, injury spill, exposure to infectious materials, chemicals or radioactive substance
- Immediate emergency treatment must be available

First Aid



- Is the principles of the treatment on the occurrence of any injury or illness on time
- An immediate and temporary care to who gets ill or injured
- The advance case First aiders should be person have been train or supervision of medical personnel
- Each lab should have a first aid kit that is properly stocked for emergency first aid purposes

Biological Spill

- Biological spill outside biological safety cabinets can generate aerosols that can be dispersed in the air.
- Can be very serious if they involve infectious micro organisms.
- The key factor for appropriate response is to know the type of agent involved.
 - Biological MSDS information such as route of infection, type of disinfectant used and type of PPE.



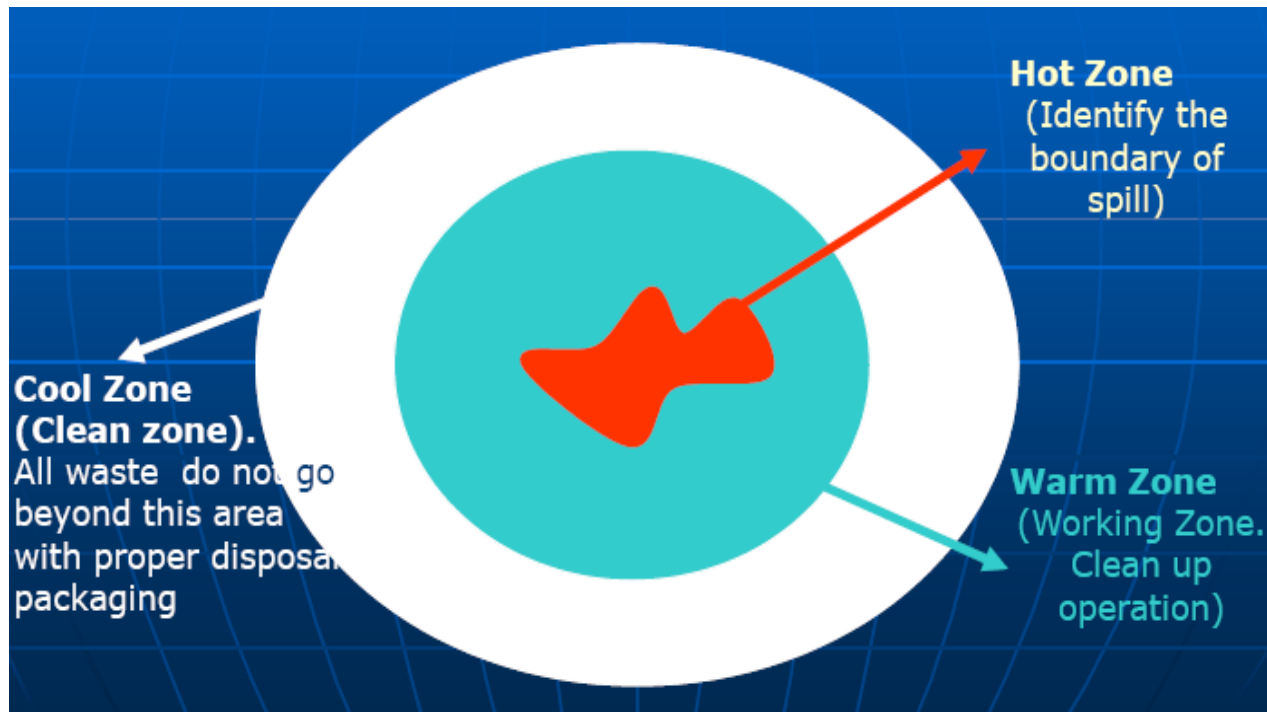
Biological Spill On the Body


- Remove contaminated clothing.
- Wipe exposed area with appropriate disinfectant
- Vigorously wash exposed area with soap and water or for one minute.
- Obtain medical attention (if necessary).
- Report the incident to the laboratory supervisors.



Risk Group 1, 2, 3 organism spill

Clean up and decontamination strategy





Risk Group 1 organism spill (low risk spill)

- Wear disposable gloves.
- Soak paper towels in disinfectant and place over the spill.
- Place towels in a plastic bag for disposal.
- Clean up spill area with fresh towels soaked in disinfectant.

Risk group 2 Organism spill (moderate risk)

- Alert people in the immediate area of the spill.
- Put on protective equipment. This may include a laboratory coat with long sleeves, back-fastening gown or jumpsuit, disposable gloves, disposable shoe covers, safety goggles, mask or full-face shield.
- Cover the spill with paper towels or other absorbent materials.

Risk group 2 Organism spill (moderate risk)

- Carefully pour a freshly prepared 1 to 10 dilution of household bleach around the edges of the spill and then into the spill. Avoid splashing.
- Allow a 20 minute contact period.
- After the spill had been absorbed, clean up the spill with fresh towels soaked in disinfectant.
- Place towels in a plastic bag and decontaminate in an autoclave.



Risk group 3 Spill (high risk)

- Leave the room immediately and close the door.
- Notify others in the room to evacuate immediately.
- Remove personal protective equipment in the airlock or access zone
- Turn potentially contaminated clothing outward, remove gloves last, and wash any exposed skin areas with antiseptic soap.



Risk Group 3 Spill (high risk)

- Call the safety officer or Response team
- Warn other not to enter the contaminated area.
- Wait at least 30 minutes to allow dissipation of aerosols created by the spill.

Risk Group 3 Spill (high risk)

- Full PPE (gloves, appropriate respirator, and rubber boots, if required) before re-entering the room.
- Cover the spilled area with paper towels or disinfectant soaked paper towels.
- Slowly pour appropriate decontaminant solution around the spill and allow to flow into the spill.
- Let stand at least 15-20 minutes to allow adequate contact time.
- Transfer all contaminated materials (paper towels, glass, liquid, gloves, etc.) and autoclave.

Chemical spill



- Immediately alert area occupants and supervisor, and evacuate the area, if necessary.
- Contract appropriate personnel if there is a fire or medical attention needed.
- Attend to any people who may be contaminated.
Contaminated clothing must be removed immediately and the skin flushed with water for no less than fifteen minutes. Clothing must be laundered before reuse. Perform First Aid for Chemical Exposures.

Chemical Spill

- If a volatile, flammable material is spill, immediately warn everyone , control sources of ignition and ventilate the area.
- Done personnel protective equipment, as appropriate to the hazards.
 - Material Safety Data Sheet or other references should be consulted and during the early stage.



Chemical Spill Clean up

- **Caution:** Remove sources of ignition if spilled material is flammable.
- What type of chemical spill
 - Acid?
 - Base (caustic)?
 - Solvent?
 - Formaldehyde?
 - Other?
- Be sure to wear all required PPE before proceeding with spill cleanup
- Encircle the spill and cover the absorbent



- Mix agent into spill

Carefully mix agent into the spill. If spill was corrosive, any neutralization reaction will subside.

- Rinse and decontaminate the equipment used for spill cleaning and the effected area.

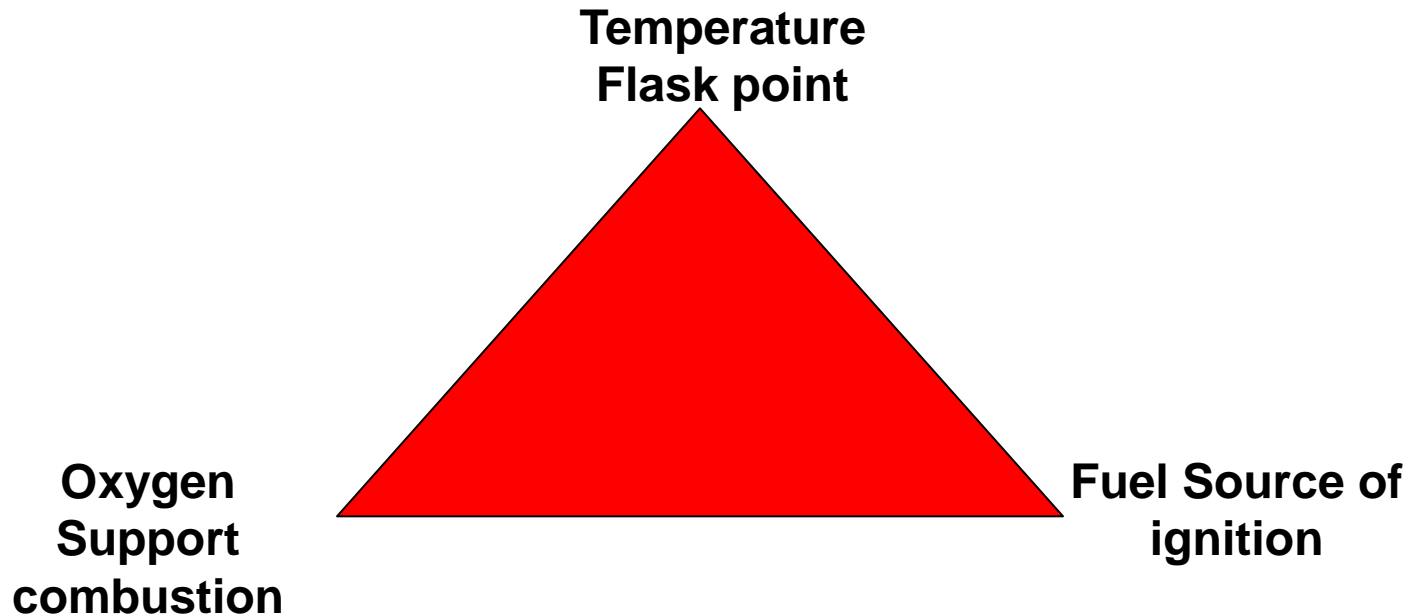
- Record clean up operation in incident report.




Fire



- Fire requires 3 elements to burn



- Keep fuel and source of ignition apart

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- A ways device an emergency plan before commencing new work/ project
 - Consult the MSDS data (Chemical & biological)
 - Keep appropriate disinfectant, deactivation agent available and within reach
 - Spill kits within reach
 - 1st Aid box with appropriate supplies

Some Thought on emergency Planning

- Staff working on the agent/chemical should be trained in 1st hand response
 - Immediate action or treatment to administer to reduce risk due to time factor
 - Simple 1st aid procedure
 - General emergency equipment checklist
 - Eye wash
 - Fire blanket, fire escape route plan
 - First Aid Box
 - Chemical, Biological spill kits
 - Appropriate deactivation or decontamination agent at hand
 - Emergency contact number

Biological Spill Kits Checklist

- Disposable Gowns
- Gloves (double if necessary)
- Disposable shoe covers (optional)
- Mask, surgical or N-95 respirator
- Eye goggles or full face shield
- Effective disinfectant agent (i.e. 10% bleach made fresh daily, Clidox, 2% Amphyl, etc..)
- Absorbent paper towels, may also include diking material or spill pillows for large spills
- Small disposable broom with dustpan, tongs or forceps for sharps
- Biohazard waste bags
- Sharps container
- A waterproof copy of (SOP) spill response and cleanup procedures

Flood

- Plan
- Turn off electrical supply
 - Backup generator
 - Diesel fuel
 - Water damage
- Flood doors or other flood mitigation devices





**Thank you for your
attention**