

Working Safely with Solvent Stills



Pubalee Bera
Health, Safety and Risk Manager
Faculty of Sciences
pbera@uottawa.ca
X 6425

Outline



- Emergency Equipment
- Emergency Situations-Fire, flood etc.
- Personal Protective Equipment (PPE)
- Equipment
- Preventive Measures
- Storage and Use
- Conclusion

Emergency Equipment

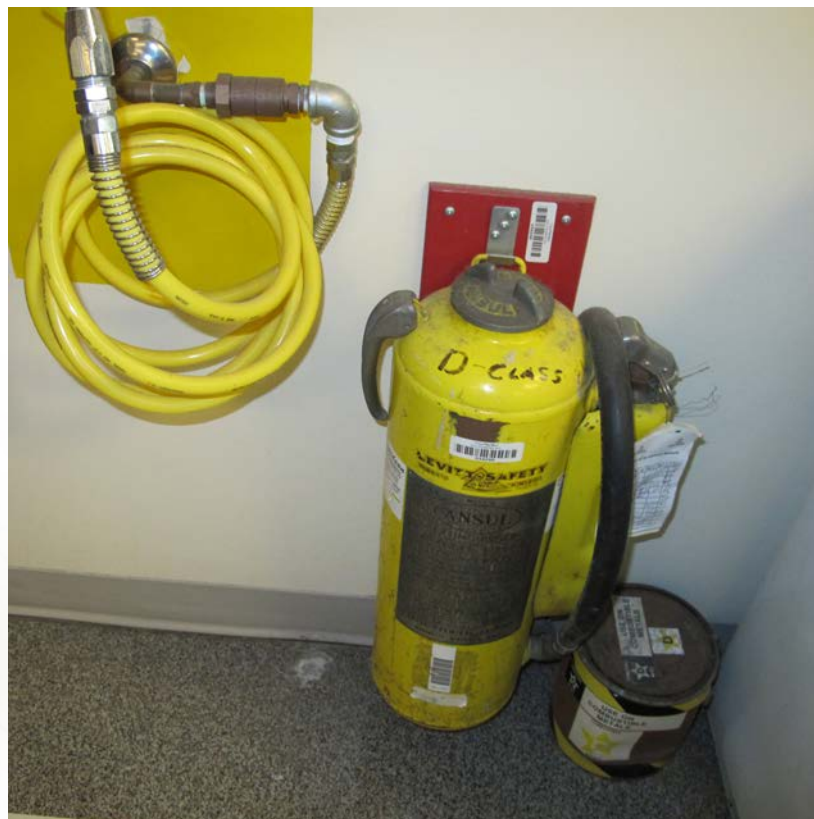


Emergency Equipment



- Presence of appropriate fire extinguisher
- Knowledge to use it, if required
- Location of spill kit along with adequate training
- First aid kit
- Emergency eye wash station
- Emergency shower

Fire Extinguishers



Fire



- Notify personnel in the immediate area
- Vacate the lab but remain available
- Active the manual fire alarm
- Call Protection Services at 5411 if fire alarm was not pulled
- Inform your Principal Investigator
- Inform the Health, Safety and Risk Manager or her Assistant
- Fill the incident report (online)

Flood



- Notify personnel in the immediate area
- Stop the source if possible without putting yourself in danger
- Vacate the lab, if required
- Call Protection Services at 5411
- Inform your Principal Investigator
- Inform the Health, Safety and Risk Manager or her Assistant
- Fill the incident report (online)

Solvent Stills



Solvent Stills



- Work in a functional fume hood
- Store flammables in a flammable solvent cabinet
- Use minimal volumes
- Label clearly and use full form

Tetrahydrofuran instead of THF

- Mandatory training must be completed before you start working



Personal Protective Equipment



- Safety glasses or goggles or face shield
- Lab coat (button it please)
- Appropriate chemical resistant and heat resistant gloves
- Closed shoes (front and back)
- Long hair must be tied
- Avoid loose clothing and jewelry

Equipment



Equipment



- Maintain sash at the 'marked' height
- Equipment generating heat must be equipped with shut-off device
- Clamps must be secured properly
- Use plastic clamps instead of metal twisters
- Do not let the solvent stills run unattended
- **No over-night set-ups are allowed**

Preventive Measures



- Check
 - mantles
 - fabric
 - cables
- Check glassware for defects
- Remove air and water sensitive agents
- Do not allow solid material to accumulate in the round bottom flasks

Preventive Measures



- Deactivate still under inert atmosphere (argon, nitrogen)
- Do not dismantle while the still is hot
- Never add fresh solvent, drying agent/indicator when the still is hot
- Do not leave the set-up unattended
- Overheating can result in an explosion
- Flood may be caused (water supply problem)

Storage and Use



- Keep in mind that potassium is much more reactive than sodium
- Take extra precaution
 - while quenching
 - if set-up was left for a prolonged period
- Ethers (tetrahydrofuran, ether) can form explosive peroxides when exposed to air or when stored for an extended period of time

Conclusion



- Completion of training is mandatory
- Seek permission from Department Chair or Health, Safety and Risk Manager
- Safety is everyone's responsibility

Contact Information



Pubalee Bera

Health, Safety and Risk Manager

pbera@uottawa.ca

x 6425



uOttawa