

Chemistry Lab Safety

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Disclaimer

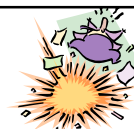
- *This presentation is not meant to be complete and will not include all hazards present in our lab.*
- *You know your research best and the implicit and explicit hazards involved. Everybody is responsible for a safe working environment.*
- *If proper safety precautions are followed then your risk in our labs will be minimized.*

What happened?



...Luckily he is ...

Why the safety (video/presentation)?



- Safety and health are as important as any other materials taught in school science curricula.
- New laboratory activities increase the risk incidents, injury, and damage is high.
- Students must be taught what can go wrong, how to prevent such events from occurring, and what to do in case of an emergency.
- Bottom line: **NO one gets hurt!**



What if ...

- After explosion



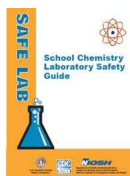
Who is responsible?

- Everyone: teacher, students
- Safety and health should be an integral part of the planning, preparation, and implementation of any science program.



How?

- Recognition of Hazards
- Practicing precautions
- Good housekeeping/SOP
- Common sense



- **Pay attention and follow instruction**

What if ...



- Did you notice the corrosion on shelf under leaking bottle

What if ...

- Leak?



What if ...

- Chemical Fire
- **SOURCES OF HAZARDS**
 - Human errors
 - Wrong Chemicals reaction
 - Fire
 - Electrical
 - Bad work place condition



What can you identify?



- Eye wash fountain
- Safety shower
- Fire extinguisher

To do list



To do list

- Clothes are expensive and can be damaged by the **chemicals** used in the lab so you must wear a lab apron in lab.



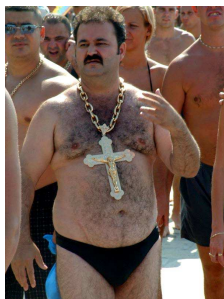
To do list

- Never **work alone** in the laboratory.
- You should only be working in the lab with supervision.



To do list

- Wear the right clothing for lab work
- **no dangling jewelry**



To do list

- **No open toed shoes**



- **Long hair must be tied back**



To do list

- Food, beverages, gum, and cosmetics are **NEVER allowed** in the lab.



Do not taste chemical!



To do list

- Safety shower
- Eye wash station



To do list

- Keep your work area clean and tidy
- Wash you hand always before leaving



Observe safety symbols



Lab Safety Symbols Found in your textbook

- Glassware
- Heat
- Eye and Face
- Sharps
- Electrical
- Animal
- Chemical
- Fire

Chemical Hazard Symbols and Definitions



- **Flammable** – Any substance that will burn if exposed to an open flame.



- **Explosive** – A substance that may explode if exposed to heat or flame.



Chemical Hazard Symbols and Definitions



- **Toxic/Poison** – A substance that can lead to death if inhaled, ingested, or absorbed by the skin.



- **Corrosive** – A substance that can destroy or burn living tissue and can eat away at other materials.



Chemical Hazard Symbols and Definitions



- **Irritant** - A substance that causes inflammation upon contact with skin or mucous membranes.



- **Environmental** - Substances that are harmful to the environment. They must be disposed of properly, not washed down the drain.

What's wrong?



What's wrong?



What's wrong?



What's wrong?



MSDS

- This helps clarify a MSDS
 - <http://www.ilpi.com/msds/ref/demystify.html>
- Where to find:
 - <http://www.ehs.ohio-state.edu/index.asp?PAGE=ehs.msds>
 - <http://hazard.com/msds/>
 - <http://www.chemexper.com/>
 - Also has basic properties and spectra
 - <http://msds.ehs.cornell.edu/msdssrch.asp>
 - <http://www.msds.com/>
 - <http://www.setonresourcecenter.com/MSDSs/comply1.htm>
 - <http://ull.chemistry.uakron.edu/erd/>
- *Fake MSDS (just for fun)*
 - <http://www.ilpi.com/fun/msds/index.html>

Thank you.