

Basic Laboratory & Chemical Safety

Environmental Health & Safety
Laboratory and Chemical Safety

404-216-5237

2015



Georgia Institute
of **Technology**[®]

- This is NOT Right To Know Class, if you haven't done so already, you must take RTK, either on line at:
<http://www.usg.edu/ehs/training/rtkbasic/>
- Or Sign up at www.trainsweb.gatech.edu to take it “live and in person”



RIGHT TO KNOW, WHAT IS IT?

- It is the Georgia Public Employees Hazardous Chemical Protection and Right to Know Law (RTK)
- RTK is the Georgia State Equivalent of the Federal Hazard Communication Standard which does not apply on State property/to State employees

Hopefully this presentation will help you to be:

- More aware of lab hazards
- Less likely to have an accident
- More able to assist someone who has had an accident
- Know what to do in the case of an accident in the lab

WHAT WE WILL TALK ABOUT

- Definition of a “hazardous” chemical
- Labeling
- Health and Hygiene
- PPE
- Safety Equipment
- Spills and Incidents
- Evacuation Plan
- Commonly Seen Mistakes
- Fume Hoods
- Gas Cylinders
- Electrical Safety
- Chemical Waste



WHAT IS A HAZARDOUS CHEMICAL?

- The Occupational Safety and Health Administration defines a hazardous chemical as “any chemical which is a physical or a health hazard”
- OSHA is aligned with how GHS classifies and labels hazardous chemicals. Both standards use Physical & Chemical definitions along with pictograms to further classify & define hazardous chemicals.



CONTAINER LABELING

* ONLY ONE RULE REGARDING LABELING: LABEL EVERYTHING!

- **Immediate use containers:**
 - Only Last 1 shift
 - Never **leave** your control
 - Secondary** Containers (beakers, flasks)
- **Name of the chemical & Your name** (may be written on the container with a marker)
- **Extended Use Containers:**
 - Last more than one shift:
 - Reagent bottles, Squirt bottles, spray bottles
- **Label must have name of chemical and hazard information** (s/a NFPA diamond)



NFPA Diamond

National Fire Protection Association 704: Fire Diamond

System developed for indicating health, flammability, reactivity, and special hazards chemicals

How to Read an NFPA Label

The NFPA diamond label is used to warn firefighters and other emergency responders of the hazards they would be exposed to in a fire or chemical spill situation.

Flammability Hazard

- 0 = Will not burn.
- 1 = Must be considerably pre-heated to ignite.
- 2 = Must be moderately heated or exposed to high ambient temperatures to ignite.
- 3 = Capable of igniting under most ambient conditions.
- 4 = Easily ignites, or ignites spontaneously in air.

Health Hazard

- 0 = Materials that offer no hazard beyond that of ordinary combustible materials.
- 1 = Materials that can cause significant irritation.
- 2 = Materials that can cause temporary incapacitation or residual injury.
- 3 = Materials that can cause serious or permanent injury.
- 4 = Materials that can be lethal.

Colors indicate the type of hazard
Numbers indicate the degree of hazard




If you need assistance in understanding the meaning of these labels, contact your supervisor or ES&H Team.

Instability Hazard

- 0 = Normally stable even under fire conditions.
- 1 = Normally stable materials that can become unstable at elevated temperatures and pressures.
- 2 = Materials that readily undergo violent chemical change at elevated temperatures and pressures.
- 3 = Materials capable of detonation, or explosive decomposition, or explosive reaction, but that require a strong initiating source, or that must be heated under confinement before initiation.
- 4 = Materials readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures.

Other Hazards

- W = water reactive
 - OX = oxidizer
 - COR = corrosive
 - ACID = acidic
 - ALK = alkaline or caustic
 -  = radioactive
- These are examples; other symbols may be present.



Physical Hazards and Pictograms



1. Flammable



2. Oxidizer

3. Explosive

4. Compressed Gas

5. Corrosive



Physical Hazard Pictograms

Flame Pictogram

- Flammables
- Pyrophorics
- Self-Heating
- Emits Flammable Gas
- Self-Reactives
- Organic Peroxides



Flame Over Circle Pictogram

- Oxidizers



Physical Hazard Pictograms

Corrosion Pictogram

- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals



Gas Cylinder Pictogram

- Gas Under Pressure



Exploding Bomb Pictogram

- Explosives
- Self-Reactives
- Organic Peroxides



Health Hazards and Pictograms

1.



2.



3.



1. Acute Toxicity
2. Skin Corrosion
3. Irritant/Sensitizer/Narcotic Effects/
4. Health Hazard (Carcinogen, Mutagen, Reproductive Toxicity, Respiratory sensitizer, Target Organ Toxic)
5. Acute hazards to aquatic environment

4.



5.



Health Hazard Pictograms

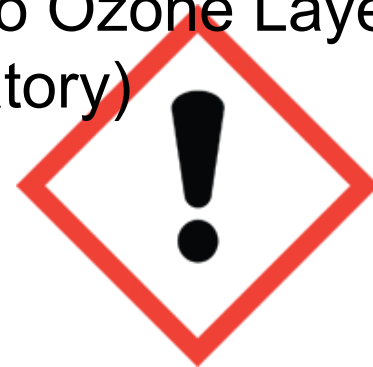
Health Hazard Pictogram

- Carcinogen
- Mutagen
- Reproductive Toxicity
- Respiratory Sensitizer
- Target Organ Toxicity
- Aspiration Toxicity



Exclamation Mark Pictogram

- Acute Toxicity (any route of exposure)
- Irritant (Skin or Eyes)
- Skin Sensitizer
- Acute Toxicity (harmful)
- Narcotic Effects
- Respiratory Track Irritant
- Hazardous to Ozone Layer (Non-Mandatory)



Health Hazard Pictograms

Skull and Crossbones Pictogram

- Acute Toxicity (Fatal or Toxic)



Corrosion Pictogram

- Skin Corrosion/Burns
- Eye Damage
- Corrosive to Metals



Environmental Hazard Pictogram

Classified as hazardous to aquatic environments

- Acute aquatic toxicity



**THE FIRST AND BEST PROTECTION
AGAINST UNWANTED CHEMICAL
EXPOSURES IS:**

Hygiene

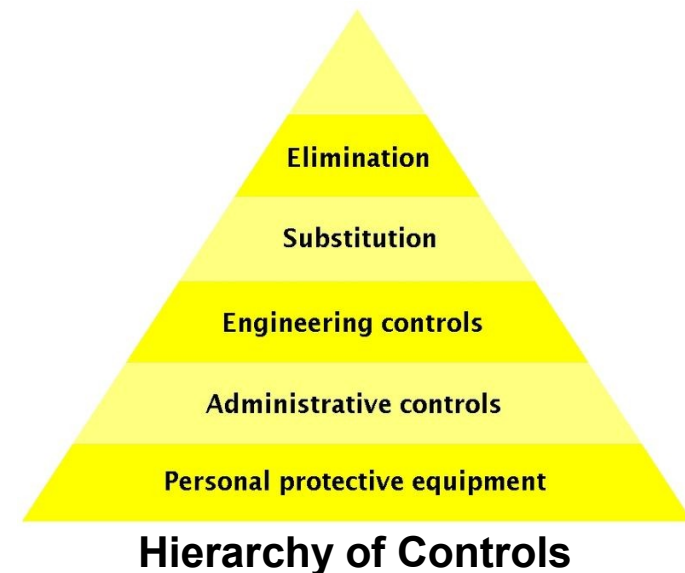


FEW BASIC RULES TO LIVE BY...

- ❖ No eating, drinking, smoking, applying cosmetics, lip balm, touching your eyes, or face while working in the laboratory.
- ❖ After removing PPE, before leaving the lab, wash your hands.
- ❖ No food or drink in the laboratory refrigerators.
- ❖ No lab samples in food refrigerators.
- ❖ No washing food dishes in lab sinks
- ❖ No lab coats in break rooms or



- Elimination is the most effective hazard control
- Substitution of less hazardous materials
- Engineering Controls
 - Fume Hoods
 - BSCs
 - Blast Protectors
- Administrative Controls
 - Safe Handling Procedures
 - Employee training



AFTER HYGIENE WE USE:

- Engineering Controls
 - Fume Hoods
 - BSCs
 - Blast Protectors
- Substitution of less hazardous materials
- Administrative Controls
 - Safe Handling Procedures

AND, OF COURSE WE ALSO USE

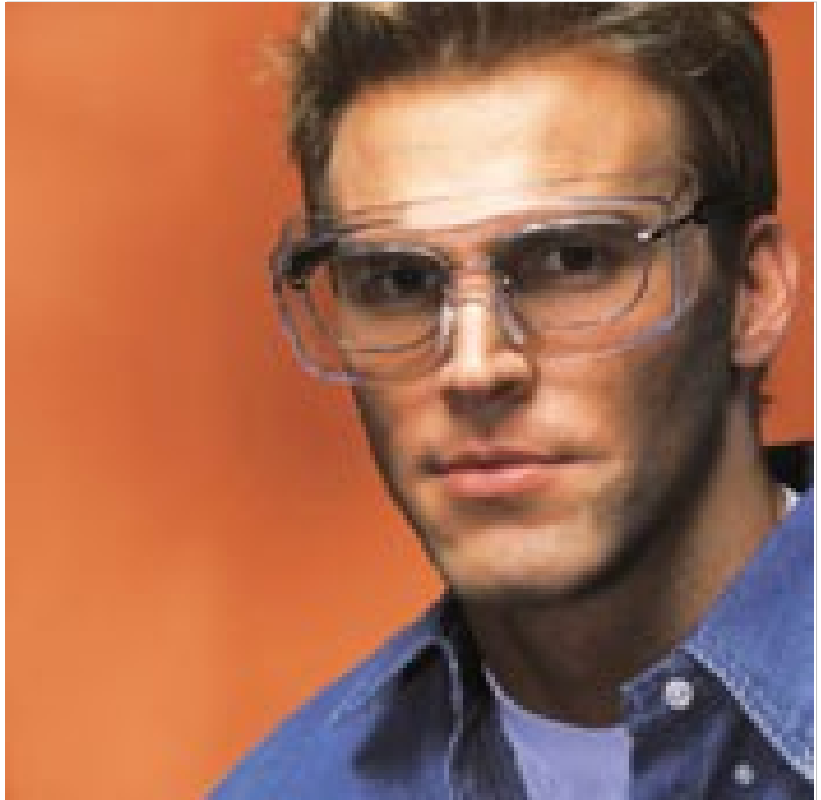
- Personal Protective Equipment (PPE)
 - Safety Glasses or Goggles
 - Face Shield
 - Lab Coat
 - Appropriate Attire
 - Gloves
 - Respirators



HD101 - Black , Clear

APPROPRIATE EYE AND FACE PROTECTION

- Safety Glasses must be donned before entering ANY wet bench lab (cell culture labs included)
- Safety Glasses must meet ANSI Z87.1 and have side shields for splash protection
- Safety Glasses must be worn over prescription glasses (OTG)

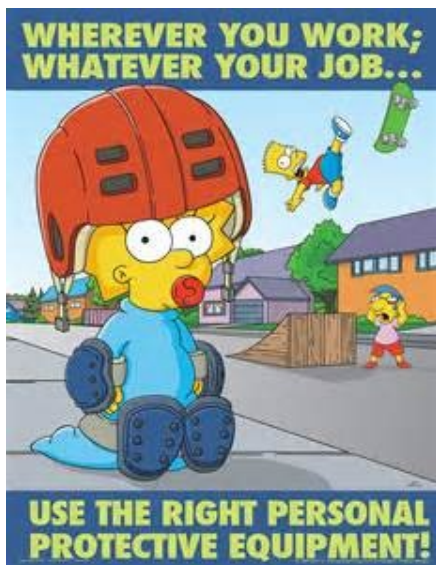


- Safety Glasses or goggles are required in all areas where soldering or machining occurs.
- Safety glasses PLUS a face shield are required around high pressure reactors, high pressure air lines, machining operations, and some cryogenic procedures.



- Lab coat are required when handling chemicals, biologicals or radiologicals
- Lab coat must cover the wearer to the knees
- Lab Coat must be 100% cotton in labs where open flames are present (natural fibers are naturally fire resistant).
- Special requirements for working with pyrophoric (ignites spontaneously in air @ or below 55°C).





- Gloves required when handling chemicals, biological or radiologicals
- A very common PPE mistake seen in laboratories at GT is relying on latex gloves to provide chemical protection from organics/solvents.
- Best choice for all purpose use-nitrile
- Contact GT EH&S for help

YOUR SAFETY IN THE LAB STARTS WITH WHAT YOU WEAR TO WORK TODAY

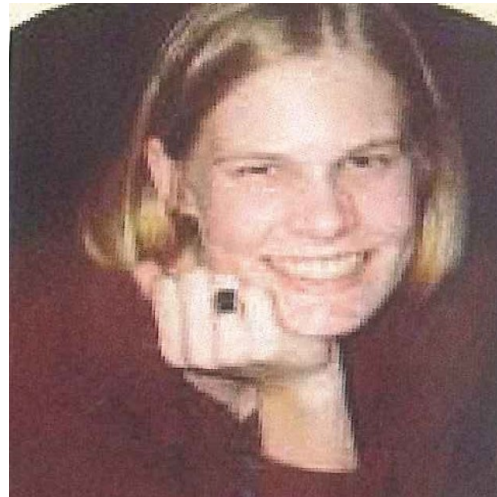
- Long pants that cover to the ankle (Shorts and skirts not allowed)
- Natural fibers (recommended) because they are fire resistant
- Nylons (aka pantyhose) not recommended
- No canvas, open front or back, or open weave shoes
 - (The best shoes for lab work completely enclose the foot and can be wiped clean.)
- Also- no ear buds in labs- you must be able to hear what is going on around you

- Inappropriately dressed persons are not allowed in laboratories and will be required to leave and go change clothes before being allowed back in the lab
- Persons who are not wearing appropriate PPE will be required to put it on before being allowed to continue their work
- Lab groups whose members repeatedly fail to follow GT safety rules will be reported to their Chair, their Dean and the Institute Council for Environmental health and Safety

IF YOU THINK THAT BEING ASKED TO WEAR PPE IS UNREASONABLE - CONSIDER THIS



Shari Sangi died in 2009 at the age of 23 because she wasn't wearing a lab coat (serious burns working with a pyrophoric)



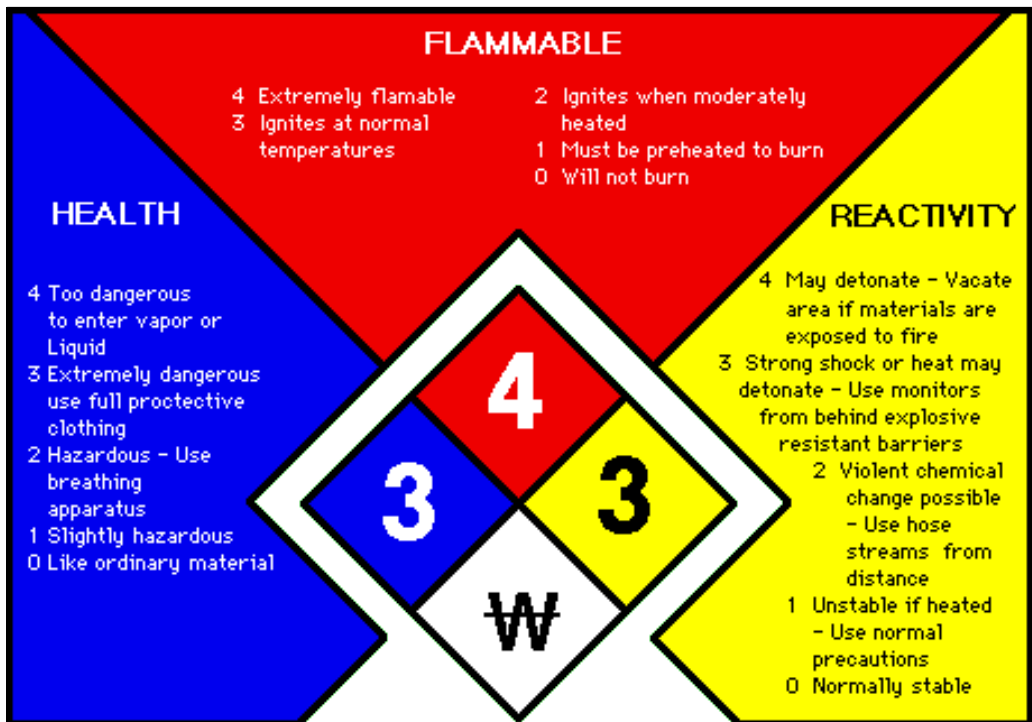
Beth Griffin died in 1997 at the age of 22 because she wasn't wearing safety glasses (contacted B virus working with primates)



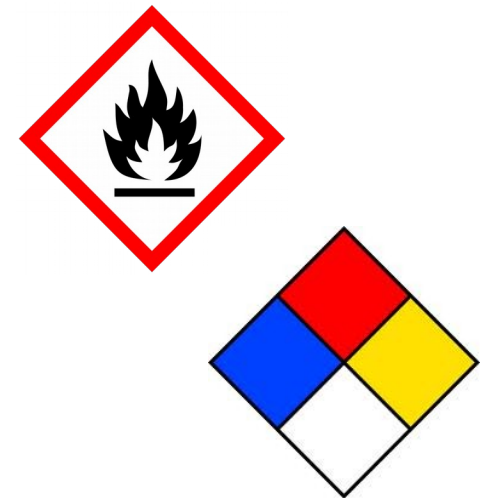
Dr. Karen Wetterhahn died in 1997 at the age of 48 because she wasn't wearing the correct gloves (mercury poisoning)

GENERAL CLASSIFICATIONS OF HAZARDOUS CHEMICALS

- Corrosive
- Irritant
- Asphyxiant
- Toxic
- **Flammable**
- **Reactive**
- **Explosive**



- Flash Point- Temperature at which a liquid gives off sufficient vapor to support combustion if provided with a source of ignition
 - ▶ Flammable (Class 3): FP <140°F (60°C)
 - Flammable (Class 2): FP <73°F BP>95°F
 - ~ NFPA 3
 - Flammable (Class 1): FP <73°F BP<95°F
 - ~ NFPA 4



- The weight of a gas or vapor compared to the weight of an equal volume of air at the same pressure and temperature.
- Air = 1,
- If the VD of a material is <1 , the material is lighter than air and may rise
- If the VD of a material is >1 , the material is heavier than air and may stay low to the ground
- Examples: $H_2 = 0.1$, Gasoline = 3.0 - 4.0



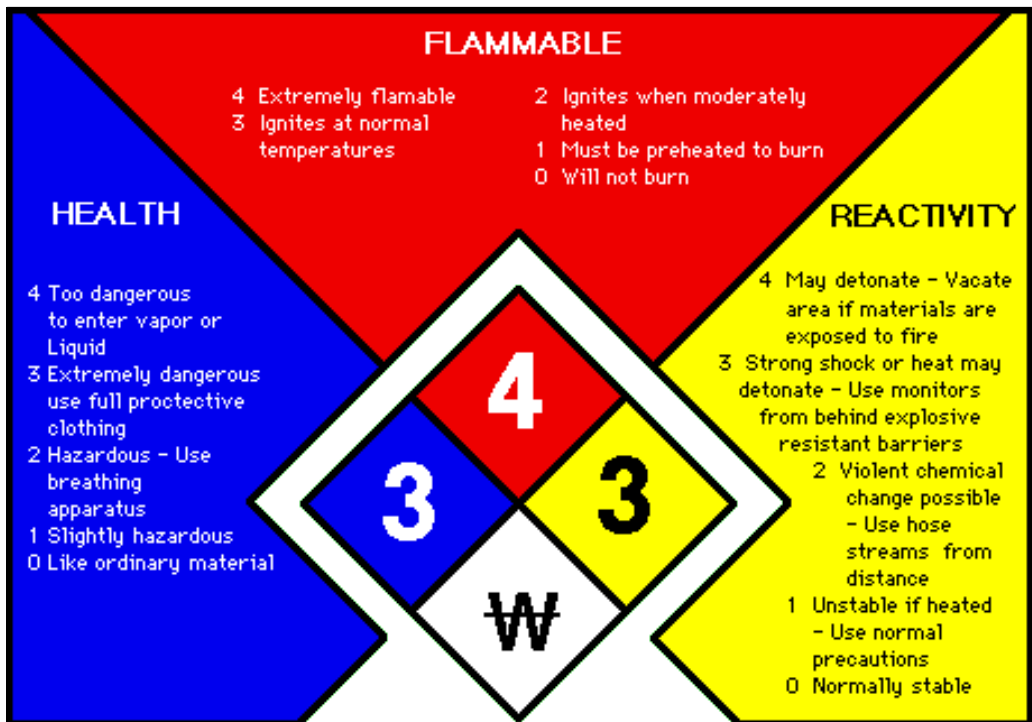
An explosion caused by hydrogen gas destroyed a biochemistry lab in June 2010. Four people were injured. –
Courtesy of University of Missouri



DESTROYED Coleman's lab after the April 8 explosion and fire at Ohio State. – Courtesy of OSU

GENERAL CLASSIFICATIONS OF HAZARDOUS CHEMICALS

- Toxic
- Corrosive
- Irritant
- Asphyxiant
- **Flammable**
- **Reactive**
- **Explosive**

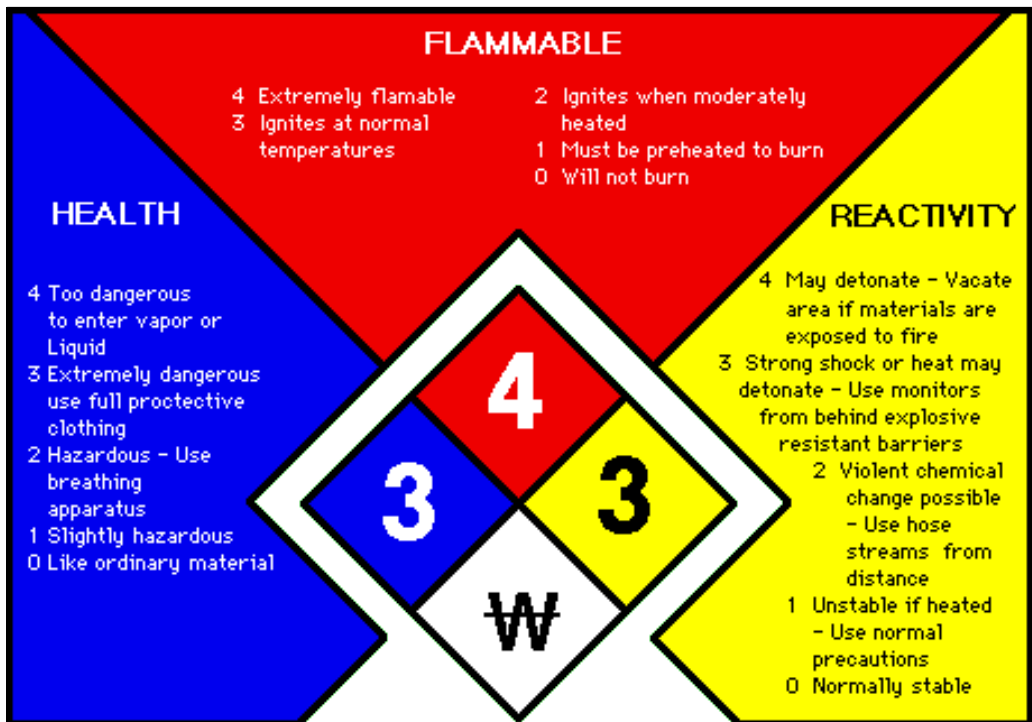


- Highly Reactive Substances-
 - Sodium Metal, Pyrophorics (t-butyl lithium, alkali metals), perchlorates, peroxide formers)
- Peroxide formers (isopropyl ether, diethyl ether, butadiene, THF, etc: Do not open these if crystals or precipitate is present. These crystals are shock, friction, heat, and pressure sensitive.
- Labs are now required to do a pre-start up safety review for handling highly reactive materials and to have a written SOP for handling these materials as soon as possible after start up
- Pyrophorics- purchases must be pre-approved by EHS and the Chemical and Environmental Safety Committee



GENERAL CLASSIFICATIONS OF HAZARDOUS CHEMICALS

- Toxic
- Corrosive
- Irritant
- Asphyxiant
- **Flammable**
- **Reactive**
- **Explosive**



IRRITANTS AND CORROSIVES- DIRECT DAMAGE= DAMAGE WHAT THEY TOUCH*

- **Irritants**

- **Skin:** red, itchy, rashes
- **Eyes:** red, itchy, watery, **corneal burns**, **blindness**
- **Nose & throat:** sore throat, burning, coughing
- **Lungs:** **burning**, **difficulty breathing**, **broncho-spasm**

- **Corrosives**

- **Skin:** red, **burning**, **chemical burns**
- **Eyes:** red, itchy, watery, **corneal burns**, **blindness**
- **Nose & Throat:** sore throat, burning, coughing
- **Lungs:** **burning**, **difficulty breathing**, **broncho-spasm**, **pulmonary edema**
- *HF

- Poisons (Toxics)
 - Often have indirect effects
 - Can injure organ systems all over the body by inhalation, ingestion, or skin exposure
- Target organ effects
 - = what /where the poison has effects such as liver, kidney, CNS, bone marrow
- Sensitizers
 - Cause allergic reactions
 - Some minor (rash)
 - Some life threatening (asthma- like)

ASPXYIANTS

- Simple Asphyxiants= non poisonous gases that can displace air to significant levels in small, unventilated spaces
 - CO₂, Ar, He, N₂
- Never store any gas cylinder or Dewar in an unventilated space



HAZARD RECOGNITION

- A bad idea is not always obvious to the person who has it...
- Know what you are working with (read the SDS)
- Learn to recognize hazards in your lab



WHAT'S THE HAZARD?

- Obstructed eyewash
- In an emergency, there is no time to clear things out of the way...
- After an eye splash, you have approximately 10 seconds to begin rinsing the chemical out of your eye before corneal damage occurs.



IS THIS LAB SAFE?



Same lab as previous slide....

**FUME HOOD FIRE
CAUSED BY BAD
HOUSEKEEPING AND
GENERAL CARELESSNESS**



WHAT DOES THIS TELL YOU ABOUT THE PEOPLE WHO WORK HERE?



SAME LAB AS PREVIOUS SLIDE...
WHAT'S THE HAZARD?



The Long and Short of It

<http://www.uwm.edu>

- Mishandled cylinders may rupture violently, release their hazardous contents or become dangerous projectiles. **If a neck of a pressurized cylinder should be accidentally broken off, the energy released would be sufficient to propel the cylinder to over three-quarters of a mile in height.** A standard 250ft³ cylinder pressurized to 2,500 PSIG can become a rocket attaining a speed of over 30 miles per hour in a fraction of a second after venting from the broken cylinder connection

Hidden Hazard: Flammable Material stored in a regular refrigerator



Vapors from hydrocarbons came in contact with electrical components inside refrigerator. Ignition caused explosion!

Explosion blew the door off and melted the interior of the refrigerator

University of Virginia

SPILLS AND EMERGENCIES:

SPILLS ARE NOT ALWAYS EMERGENCIES

- Minor Spills = Spills you can handle yourself
 - Control the area- don't let people walk through
 - Notify possibly affected personnel
 - Clean it up- (from the outside in)
 - Bag the waste, place in haz waste area **NOT** the regular trash
 - Replenish spill kit supplies
 - Examine what went wrong



- Medical Attention Required
- Spill is bigger than one liter
- Violent on-going reaction or fire
- Floods
- Highly dangerous or unknown material
- Any situation where your own safety is in question- such as do you need a respirator to clean this up safely?



WHAT TO DO

- NOTIFY PERSONNEL IN AREA
- CLOSE FUME HOOD/SHUT OFF EQUIPMENT
- POST WARNING SIGN (if you are only evacuating the lab)
- PULL FIRE ALARM IF NECESSARY (to evacuate the building)

- IF YOU NEED HELP NOW
- **Call** (911) or GT Police (404-894-2500)
- **Tell** the operator that you are on the Georgia Tech Campus
- **KNOW** The Street Address of Where you are:
- REMAIN IN AREA UNTIL RELEASED

Medical Attention

Life threatening:

GT Police : 404-894-2500 (or 911 GT phones ONLY)

Emergencies :

EH&S (24hrs) : 404-216-5237

GT Police : 404-894-2500 (or 911 GT phones ONLY)

Medical attention

Before 5pm

STAMPS (with escort)

After 5pm

Undergraduate students: GRADY

TA: CONCENTRA (up to 8pm) then GRADY



Ambulance Transport to Emergency Room

1. Ask paramedics to assess victim
2. If the victim refuses medical treatment
 - ✓ Get a copy of signed waiver
3. If transported to emergency room:
 - ✓ Make sure victim has cell phone, wallet, purse and ID
 - ✓ Undergraduate students are responsible for any incurred charges
 - ✓ TA, Stockroom workers are covered under workman's compensation



WHEN TO TAKE A SHOWER



- If you are splashed with a chemical in an area of your body which cannot be put under a sink faucet and flooded immediately- you must use an emergency shower
- **Remember water must be body temperature**

- If your clothing is involved- remove it on the way to the shower-
- Shout for help
- Remain in the shower for 15 minutes
- Get someone to call the GT Police
- Do not re-don contaminated clothing
- Print out 4 copies of the SDS
 - One to the victim, one to the paramedics, one to GTPD, one to GT EHS

DON'T FORGET

Emergency showers are a very effective way to put out a person on fire.



Shari Sangi Died in 2009 after catching her clothes on fire in a UCLA lab

HOW TO USE AN EYE WASH



- Shout for help
- Hold your eyelids open with your fingers as you rinse your eyes
- Have your helper watch a clock for you to make sure that you continue to rinse your eyes for a full 15 minutes

- You must seek medical attention immediately afterwards
- GT EH&S recommends you go to Grady Hospital to ensure proper care
- Take a copy of the SDS with you to the hospital

ACCESS TO SAFETY EQUIPMENT MUST BE IMMEDIATE

- After an eye splash, you have approximately 10 seconds to begin rinsing the chemical out of your eye before corneal damage occurs.



EMERGENCY EQUIPMENT

- Eye washes should be flushed once per week
- Take the time to learn how to turn them on today!



YOUR SAFETY DEPENDS ON THE AVAILABILITY OF EMERGENCY EQUIPMENT:

- Emergency exits- don't let people block them
- Fire extinguishers- need to be highly visible and easy to get at
- Showers and eyewashes must be readily accessible



- Turn off any equipment that you can as you exit
- Grab the hard copy of the chemical inventory that you keep posted by the lab door on your way out
- Pull the fire alarm if appropriate

- Respirators- You may NOT use respirators in laboratories at GT without prior permission/certification by EHS (this includes N-95 filtering facepieces)
- Hearing Conservation- A separate training program
- Laser- A separate training program

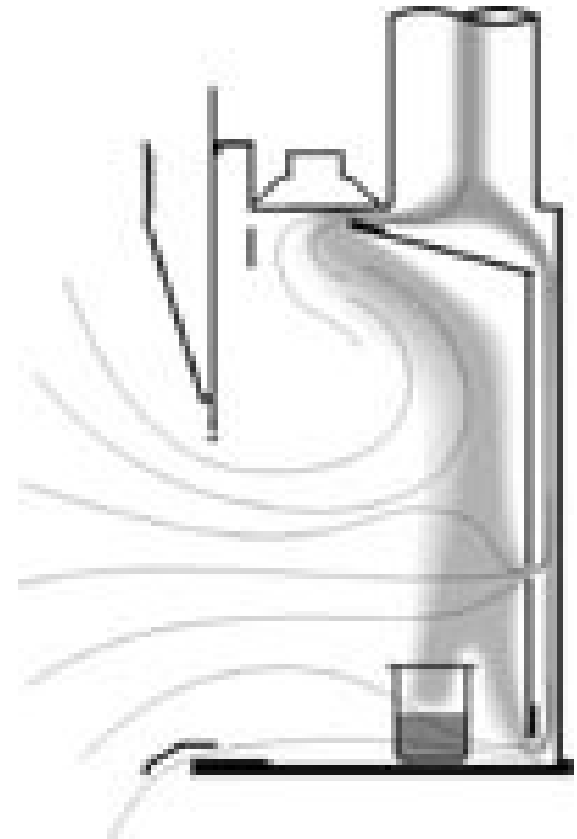


ABOUT FUME HOODS:

- They are ventilated work spaces i.e. “prime real estate
- They are not for storing chemicals or unwanted equipment
- Sashes need to be closed when you are not standing in front of them
- Lab doors need to be closed to achieve proper ventilation (especially in EST, MSE, and BME)
- Many have an emergency setting to increase ventilation in the event of an accident)

FUME HOOD FACTS

- Their function depends on unimpeded air flow
- They should be operated with the sash at 18" and closed when not in use
- Work should go 6" inside the hood



- Flow for most chemicals should be 100 ft/min \pm 20%
- For carcinogens or highly toxic chemicals, flow should be 120 ft/min \pm 10%
- Call GT EHS to have fume hood speed adjusted
- Hoods should have a visible indicator that they are working. This could be as simple as a kim wipe taped to the sash or as sophisticated as:



- Gas Cylinders must be restrained with a chain or strap between the “waist” and “shoulder”.
- Remove regulators and cap cylinders before moving.
- Cap unused cylinders
- Never use grease or Teflon tape on cylinder fittings



Good- 1 cylinder per bracket

Bad- multiple cylinders on one strap

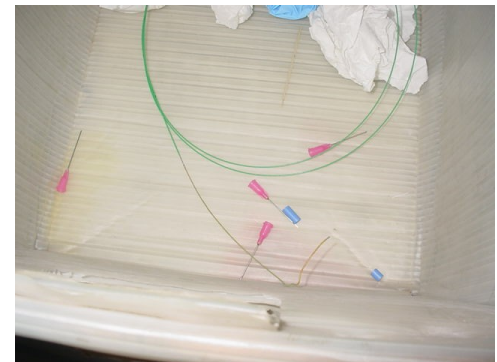
- Fittings vary between gas types: toxic, corrosive, inert, flammable, oxidizing.
- Never force a fitting- you are probably using the wrong type.
- Cylinder (not the cap) must be labeled as to contents. Do not rely on cylinder color to identify- they vary between manufacturers.
- Always use non sparking tools around flammable and oxidizers

ELECTRICAL SAFETY

- All equipment should be grounded (third prong on the plug or one prong wider than the other)
- All equipment should be in good working condition- look for frayed wires, open access panels, etc
- Permanent equipment (>6 months) must have permanent wiring (no extension cords)
- If the equipment is located within 6 feet of a sink, there must be a GFI plug.

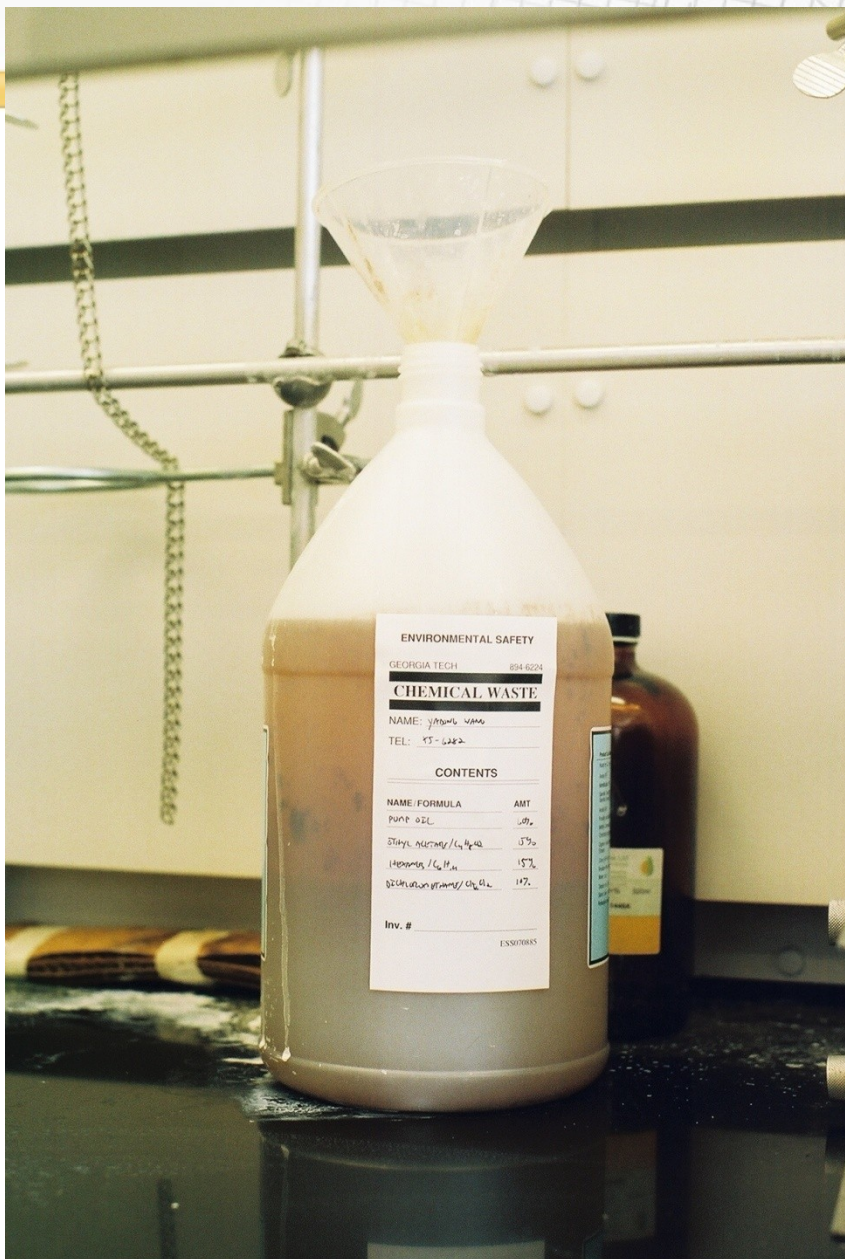
SHARPS

- Needles, razor blades, broken glass, broken wafers
- **MUST** go into an appropriate disposal container- not the trash!



WASTE ORGANIC SOLVENTS-

- Bottle it! Use Chematix or call 4-6224 for a waste pick up
- Unless you are physically standing in front of the waste bottle, adding waste, the bottle must be capped.
- Discard bottle by allowing the residue to evaporate off in the hood then deface and discard into glass trash (lid off)
- Glass trash boxes must be taken to the dumpster by you



- Bottle it!
- Bottle must be triple rinsed
- Rinsate may go down the drain
- Deface the bottle
- Discard (uncapped) into glass trash

- Bottle it!
- Empty stock container is hazardous- treat as hazardous solid waste and call for pick up
- Check www.ehs.gatech.edu for the “highly hazardous” list to see what qualifies
 - Acrolein, carbon disulfide + 259 others

- Label must be on the bottle before you start adding the waste
 - Chematix label or:
 - Your label with:
 - Name and phone number of responsible individual
 - Contents: Chemical Name(s) and approximate percentages.
 - Other pertinent information

WHY YOU WANT TO LABEL YOUR WASTE CLEARLY



- GT MaRC 2002 - incompatible waste explosion closes lab for 1 day to clean up chemicals sprayed over lab by explosion
- GT EST 2003 - failure to remove original alcohol label from a waste bottle resulted in HF waste exposure to worker who thought she was using alcohol
- GT EST 2008 - incompatible waste reaction resulted in acid burns to face of student worker
- GT IBB 2009 - exposure to vapors from incompatible waste reaction sent 2 people to the hospital

U of Kentucky- waste explosion

SHIPPING CHEMICAL AND BIOLOGICAL MATERIALS

- From GT to another location
- From another location (such as field samples) to GT
- Involves more than just a box and a stamp
- Could involve hefty penalties and jail time
- NO exemption for small quantities
- Be smart- learn what you need to know now:
<http://www.ehs.gatech.edu/chemical/#Shipping>

- Must take on line training
- Must Pass Test
- Must take “hands on” training in packaging biological or chemical samples

- GEORGIA TECH LAB SAFETY MANUAL
- PRUDENT PRACTICES FOR HANDLING
- CHEMICALS IN LABORATORIES
- SAFETY DATA SHEETS
- GEORGIA TECH EHS WEBSITE

Georgia Tech EH&S Department Contact Information:

Department Front Office.....4-4636

Spills/Waste:

Ed Pozniak.....4-6224

Bio-Hazard:

Meagan Fitzpatrick.....4-6120

General Safety:

Jerel Harris.....5-0263

(Electrical Safety, Ergonomics, Lock-out-tagout)

Fire Marshal:

Larry Labbe.....4-2990

Lab and Chemical-Hazard:

Laura Scholer-Bland.....5-1392

Morgan Wright.....5-0821

(Also Noise, Indoor Air Quality Assessment, etc.)

Radiation Safety:

Gary Spichiger.....4-8847

<http://www.ehs.gatech.edu/>

QUESTION 1: What kind of information must be labeled on immediate use containers?

- A. Nothing. Only long-term use containers require labels.
 - B. The name of the person responsible for the container.
 - C. The name of the chemical within the container.
 - D. Both B and C.
-
- ANSWER: D

QUESTION 2: What kind of information must be labeled on long-term use containers?

- A. The name of the person responsible for the container
 - B. The date the container was made.
 - C. The date the material will be used next.
 - D. The name and hazard information for the chemical within the container.
-
- ANSWER: D

QUESTION 3: Which of the following is an industry standard hazard labeling system:

- A. The NFPA diamond
 - B. The Red Card System.
 - C. The Hazardous Materials Identification System (HMIS).
 - D. Both A and C.
-
- ANSWER: D

QUESTION 4: Which of the following statements about chemical storage is NOT true:

- A. Chemical storage equipment should only be used as designed
 - B. Common consumer refrigerators can be used for storing flammable materials if no other storage location is available.
 - C. Gas canisters should be secured individually, with brackets between the waist and the neck of each canister.
 - D. Many lab emergencies result from improperly stored or labeled materials.
-
- ANSWER: B

QUESTION 5: You can find hazard information for any substance by consulting its:

- A. Material Safety Data Sheet (MSDS) through chematix.gatech.edu
 - B. Safety White Paper (SWP) on cheminfo.com
 - C. Creators.
 - D. All of the above
-
- ANSWER: A

QUESTION 6: If you splash a chemical in your eyes, you should rinse in the eye wash for:

- A. 15 minutes
 - B. 15 seconds
 - C. 5 minutes
 - D. 1 hour
-
- ANSWER: A

QUESTION 7: Which of the following housekeeping practices puts yourself and your team at risk?

- A. Not ironing your lab coat
- B. Using the fume hood for storage
- C. Allowing clutter to block emergency equipment, like eye washes
- D. Both B and C
- E. All of the Above

- ANSWER: D

QUESTION 8: Which of the following facts might help you to safely address a flammable material?

- A. Vapor Density
 - B. NFPA Flammability Class
 - C. Flash Point
 - D. All of the Above
-
- ANSWER: D

QUESTION 9: What steps can you take to reduce your risk of personal injury in the lab?

- A. Never wear shorts or sandals in the lab
 - B. Never eat or drink in the lab
 - C. Never bite your nails or pen in the lab
 - D. All of the Above
-
- ANSWER: D

QUESTION 10: Which of the following statements is true?

- A. In most cases, prescription glasses can be safely worn in place of safety glasses or goggles.
 - B. Hazardous chemical waste must be disposed of by EH&S with pickups requested through Chematix.
 - C. Most lab mistakes only impact the individual who makes the mistake.
 - D. All of the Above
-
- ANSWER: B