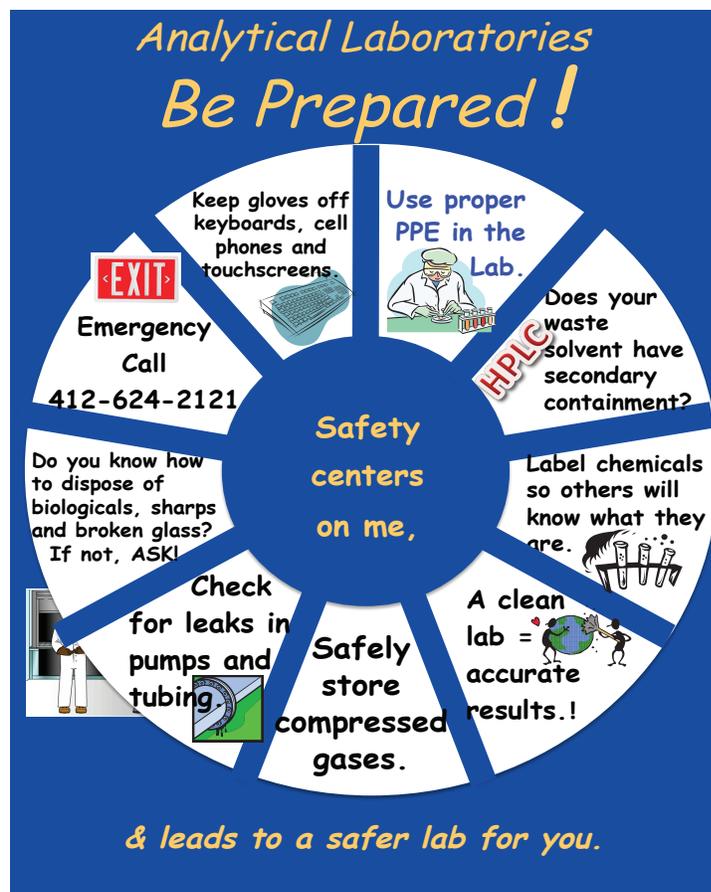
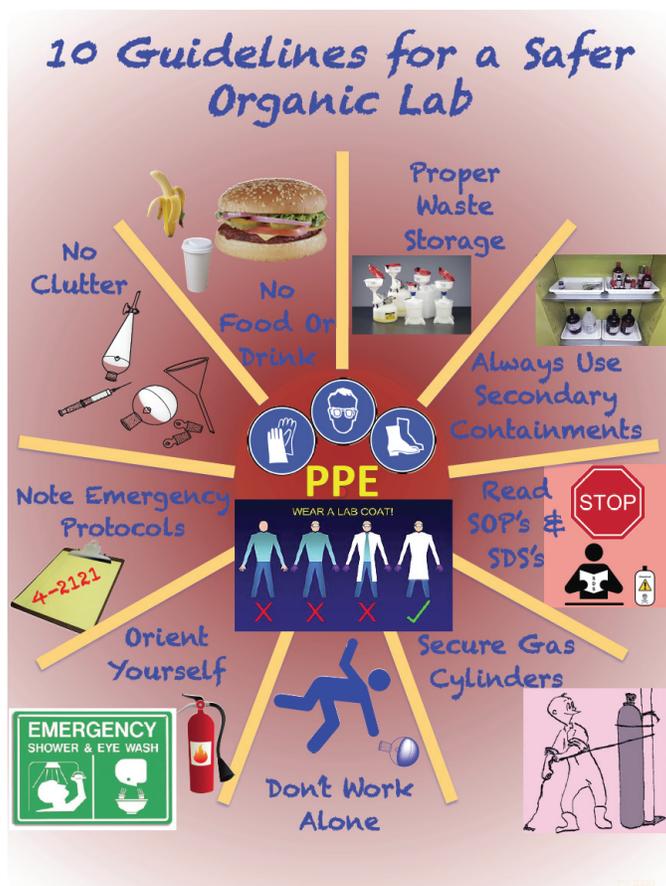




CSSC Initiative: Resource Posters for Safety Awareness

The Issue: Common areas, like hallways or classrooms, typically lack informative and interesting resources on relevant safety topics

Our Solution: Safety-themed posters placed at various areas of the building are educational and also serve to promote awareness of safety-focused chemistry in research or teaching.





Tell us your thoughts!
tx.ag/safety

Wet Lab Personal Protective Equipment (PPE)

WRONG

RISKS

Not wearing proper eye protection can result in eye injury including blindness from hazardous materials and flying objects.

RISKS

Not wearing a lab coat can cause damage and holes in clothing. It can also result in skin burns, disfigurement, and skin contamination to areas like the wrist. Once outside the lab, you can contaminate your home, lunch areas, etc.

RISKS

Not wearing gloves runs the risk of burns, scars, contamination, and the absorption of hazardous materials.

RISKS

Lack of proper leg coverage can result in burns, scars, contamination, and absorption of hazardous materials.

RISKS

Lack of proper footwear can result in broken bones, burns, scars, contamination, and absorption of hazardous materials.

RIGHT

EYE PROTECTION

Safety glasses protect you from impact such as exploding glassware or eye contamination via droplet exposure. Goggles protect against splashes. Face shields can protect against skin burns (e.g. cryo).

LAB COAT

Lab coats protect your skin from hazardous materials (e.g. chemicals, biologicals, radiologicals). You can remove the contaminated layer post-spill, isolating contamination to the lab area. The extra layer can also minimize public body exposure should clothing need to be removed due to a splash.

GLOVES

Frequent change of lab gloves when contaminated can prevent burns and toxic side-effects.

COVERED LEGS

Covered legs provide a layer of protection against hazardous materials.

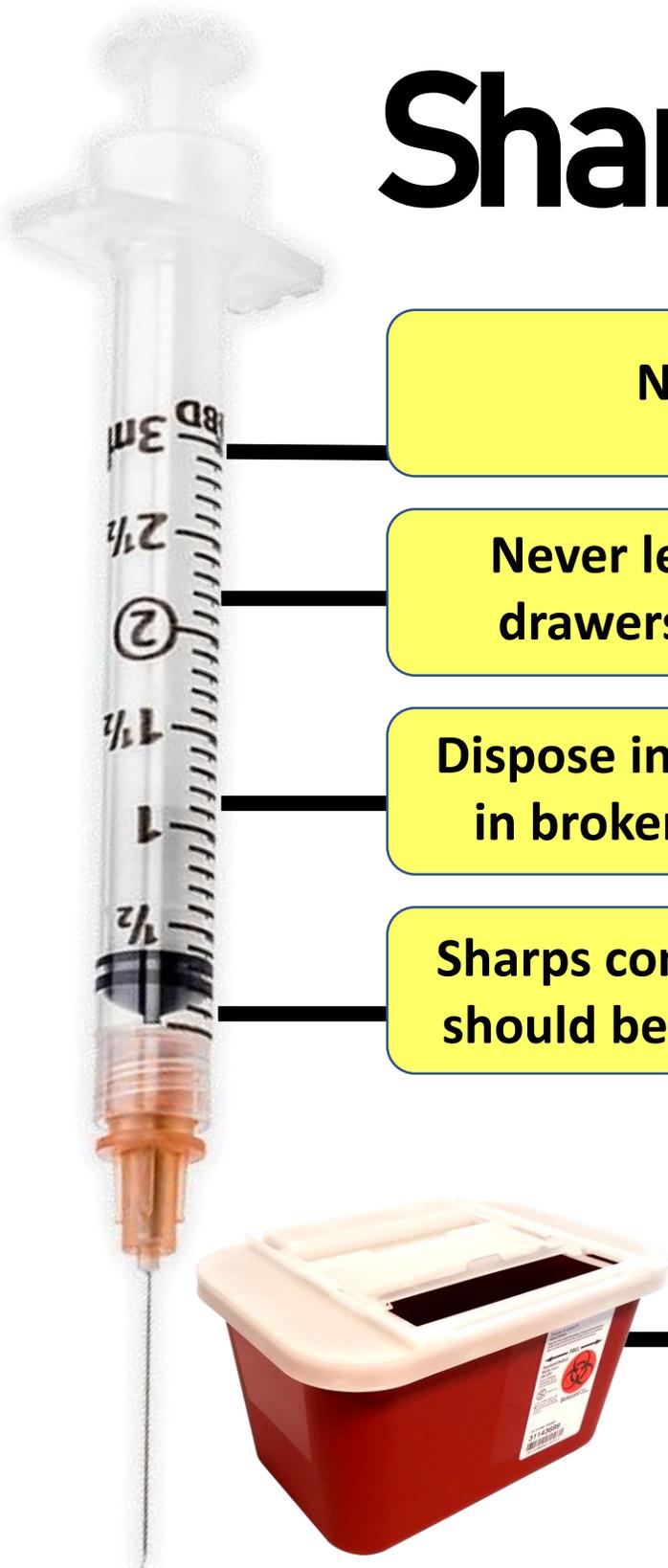
CLOSED-TOE SHOES

Closed-toe shoes protect against physical hazards and hazardous materials.

Tell us your thoughts! tx.ag/safety



Sharps Safety



Never recap needles

Never leave uncapped needles in drawers or out in the workspace

Dispose into a sharps container, never in broken glass waste or trash cans

Sharps contaminated with biohazards should be autoclaved before disposal

When disposable needle boxes are full, completely cover with Plaster of Paris and place in the dumpster.



Tell us your thoughts!
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Incompatible Chemicals

Never add your waste to someone else's waste bottle without prior discussion

While this list is a good starting point, it is not all encompassing! Check the SDS first and ask others if you are unsure.

Find copies of this flyer and our others in the chemistry mailroom to post in your lab!

Chemical	Incompatible with
Acetic acid	Nitric acid, peroxides, permanganates
Acetic anhydride	Ethylene glycol, hydroxyl-group-containing compounds
Acetone	Hydrogen peroxide
Ammonium nitrate	Acids, flammable liquids, powdered metals, finely divided organic or combustible materials
Chlorate salts, such as sodium or potassium chlorate	Acids, ammonium salts, finely divided organic or combustible materials
Chlorine	Ammonia, butane, hydrogen, turpentine, finely divided metal
Copper	Hydrogen peroxide
Hydrocarbons	Bromine, chlorine, peroxides
Hydrogen peroxide	Combustible materials, copper, iron, most metals and their salts, any flammable liquid
Iodine	Ammonia
Nitric acid, concentrated	Acetic acid, acetone, alcohol, flammable substances such as organic chemicals Note: There have been many explosions from inappropriate or inadvertent mixing of nitric acid with organic chemicals in waste containers.
Oxalic acid	Silver, mercury
Oxygen	Flammable materials, hydrogen, oils
Phosphorus, white	Air, oxygen
Potassium permanganate	Ethylene glycol, glycerol, sulfuric acid
Sodium (alkali metals: lithium, sodium, and potassium)	Carbon dioxide, water, alcohols
Sodium nitrate	Ammonium salts
Sulfuric acid	Chlorates, perchlorates, permanganates

FITS LIKE A GLOVE

Choosing the Right Glove for the Job



What part of your body is most exposed to chemicals in lab work and demos?

Your hands, of course!

Protecting them with gloves is quick and easy, if you know which type to use.



POLYETHYLENE

Advantages:

- Excellent protection from common acids and bases
- Inexpensive

Disadvantages:

- Limited tear resistance

Good protection from:

- Acids
- Detergents
- Common dilute lab reagents

Poor protection from:

- Concentrated reagents and solvents



NEOPRENE

Advantages:

- High density
- Tear resistant

Disadvantages:

- Impaired dexterity

Good protection from:

- Peroxides
- Fuels
- Alcohols
- Organic acids and bases

Poor protection from:

- Halogenated compounds
- Aromatic compounds



NITRILE

Advantages:

- Flexible
- Sturdy
- Easy to see punctures

Disadvantages:

- Limited chemical protection

Good protection from:

- Oils and greases
- Acids, caustics
- Alcohols
- Chlorinated solvents

Poor protection from:

- Strong oxidizing agents
- Aromatic solvents
- Ketones
- Acetates



BUTYL

Advantages:

- Sturdy
- Reusable

Disadvantages:

- Limited sizes
- Impaired dexterity

Good protection from:

- Peroxides
- Strong acids and bases
- Alcohols
- Aldehydes
- Ketones
- Esters
- Nitro compounds

Poor protection from:

- Hydrocarbons (aliphatic, aromatic)
- Halogenated solvents

Individual brands vary. Always check glove compatibility against the manufacturer's recommendations.

Special thanks to the ACS Committee on Chemical Safety.

References

www.osha.gov/Publications/osh3151.html

www.ehs.berkeley.edu/workplace-safety/glove-selection-guide



LAMINATE FILM

Advantages:

- Protection from a wide variety of chemicals
- Can be a liner under other gloves
- Good dexterity
- Good for hazmat work

Disadvantages:

- Not puncture-resistant

Good protection from:

- Alcohols
- Hydrocarbons (aliphatic, aromatic)
- Chlorines
- Ketones
- Esters

Poor protection from:

- Check manufacturer information

Find copies of this flyer and our others in the chemistry mailroom to post in your lab!

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TEXAS A&M UNIVERSITY

Chemistry



Tell us your thoughts!
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Glovebox Round Table:

From black box back to glovebox

July 16th 2019
4:00 PM
CHEM 255
Food provided!

Topics:

Typical use
Bad Practices
Maintenance
Regeneration
Troubleshooting



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PGStraining.com

Nationally Accredited
safety training for users of
compressed & cryogenic gases

Know Your Cylinder

Hand Wheel or Key operated
marked open/close



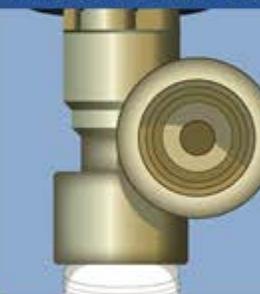
Cylinder Top
Cylinders must be capped when not in use.
DO NOT apply oil to loosen.



Test Rings
For use by supplier, shows when cylinder due next statutory test



Valve Outlet
Ensure free from dirt, PTFE tapes, oil and grease



Shoulder Colour
Shows generic hazard only. Should not be used to identify specific gas type.

 Inert	 Oxygen
 Flammable	 Toxic
 Oxidant	 Mixed Hazard

Storage
Cylinders should be stored upright, secure & have the correct signage for the gas in use



Tape
Specialist grade tape applied by cylinder supplier only. PTFE tape must not be applied to outlets or regulator bullnose



Cylinder Walls
4mm or 8mm thick, made of a single billet of molybdenum steel

Cylinder Label
must be attached at all times

Important information on a Cylinder Label

- Product name
- Pressure & cylinder size
- Physical hazard symbol
- Transport hazard symbol
- Manufacturer & address
- Emergency number
- Hazard & precaution statement

Special Gases

Have a recipe label, identified with a unique number. This number may appear etched on the cylinder or as a additional cylinder label. If the recipe number & the cylinder numbers are not the same then quarantine the cylinder. Some special gases degrade over time, look for a 'use by date'.



Tell us your thoughts!
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Base and Acid Bath Safety

Base and acid baths are extremely corrosive and can cause burns!

Some General Notes

- Baths can **vary greatly in concentration** –Label with date created, chemical names, and concentrations
- Establish Lab Rules for Use – Ex. Always wear neoprene gloves when removing objects and/or use tongs in addition to your normal PPE
- **Pre-wash** soiled glassware
- Don't leave glassware sitting in the bath for a long time – 1-2 days is usually sufficient!

Think Twice Before Adding:

- Volumetric glassware
- Glass frits/filters
- Rubber items
- IR or UV cells
- Anything with mercury, sodium, or potassium metal

