

Safety and Inventory



Brenna Collins, Group Meeting, August 24th 2022

General Safety

- PPE



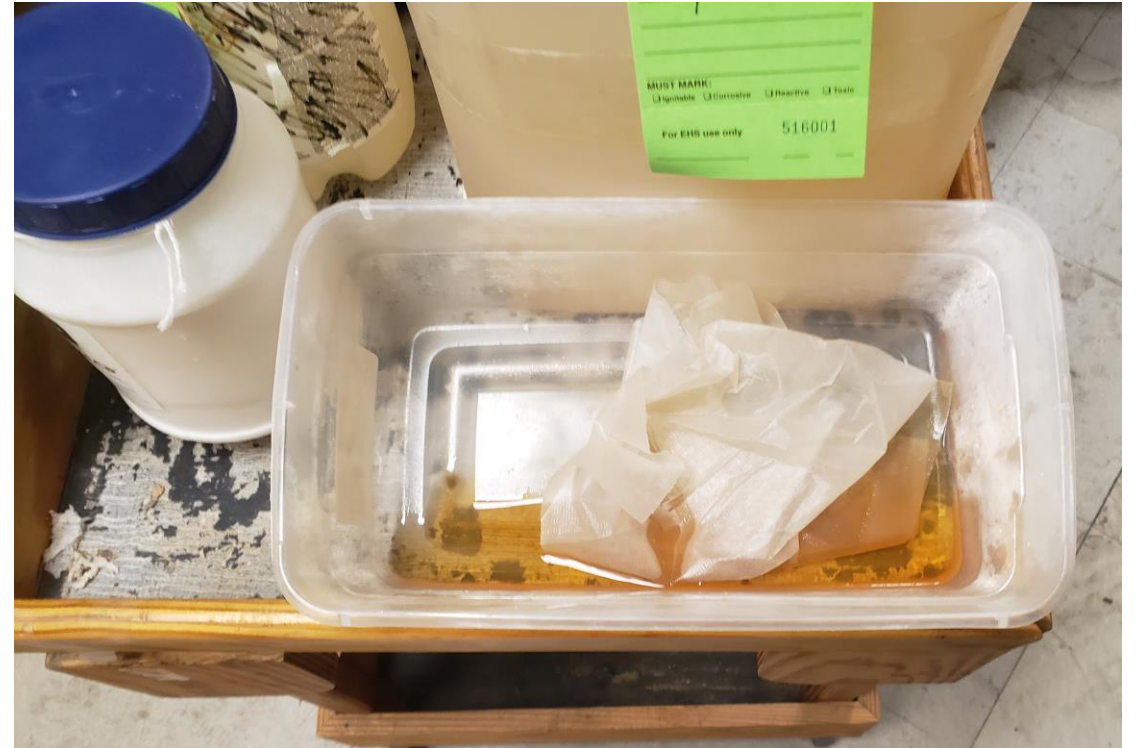
General Safety

- PPE
- Be aware of your surroundings



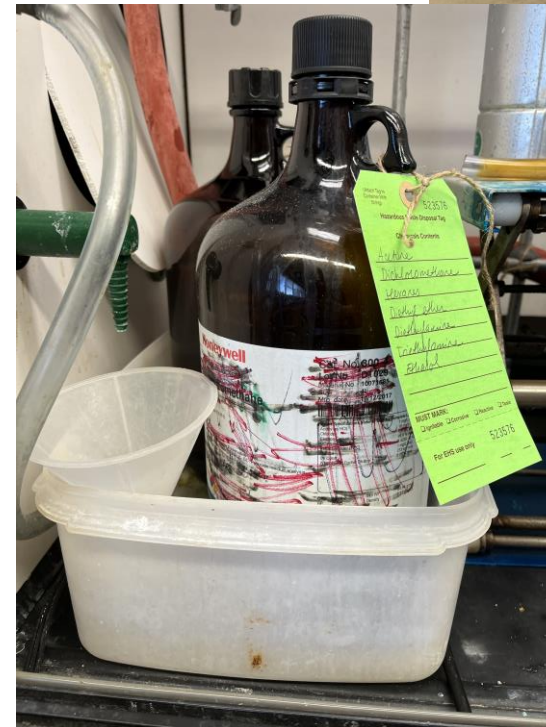
General Safety

- PPE
- Be aware of your surroundings
- See something, say something



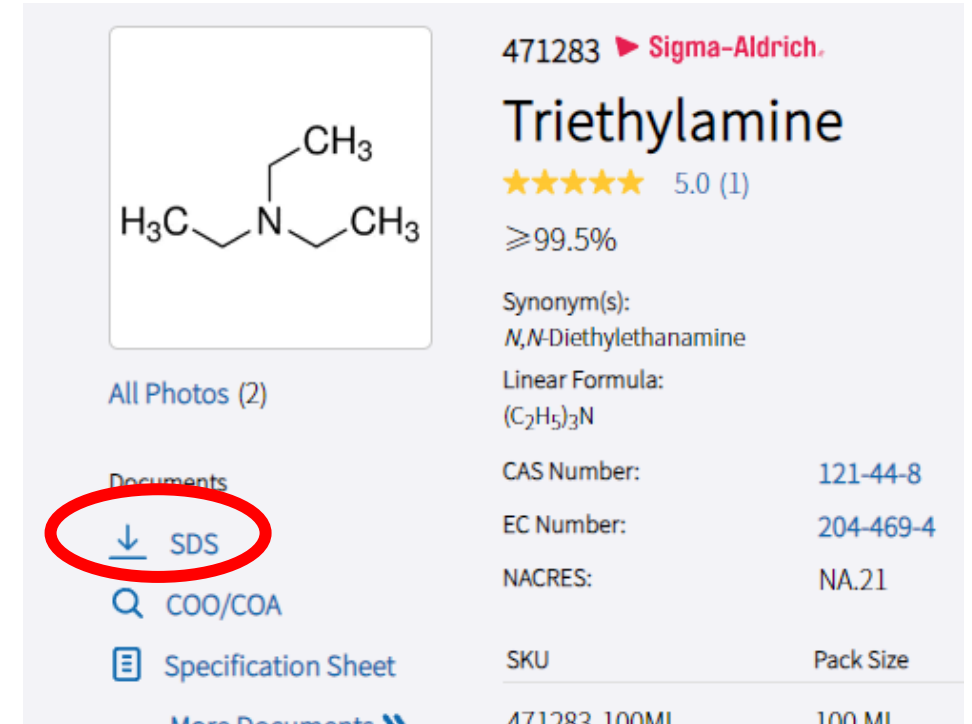
General Safety

- PPE
- Be aware of your surroundings
- See something, say something
- Keep the labs clean



General Safety

- PPE
- Be aware of your surroundings
- See something, say something
- Keep the labs clean
- Chemical and risk assessment
 - Ordering a new chemical
 - Working with a new chemical



471283 ▶ Sigma-Aldrich.

Triethylamine

★★★★★ 5.0 (1)

≥99.5%

Synonym(s):
N,N-Diethylethanamine

Linear Formula:
(C₂H₅)₃N

CAS Number: 121-44-8

EC Number: 204-469-4

NACRES: NA.21

SKU Pack Size

471283 100ML 100 ML

All Photos (2)

Documents

↓ SDS

COO/COA

Specification Sheet

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture





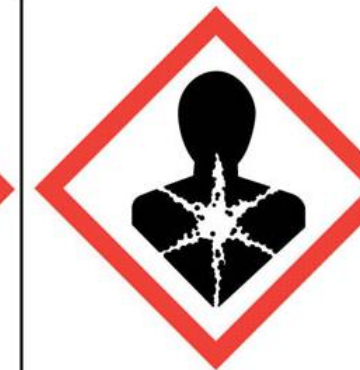
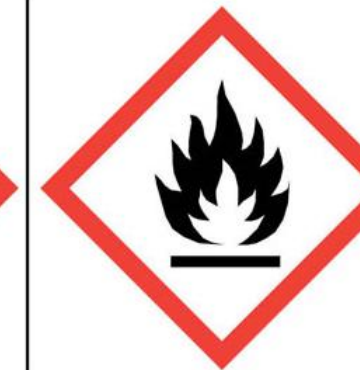



GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Short-term (acute) aquatic hazard (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements




Hazard Pictograms and Related Hazard Classes

					
<p>Explosing Bomb</p> <ul style="list-style-type: none"> • Explosives • Self-reactives • Organic Peroxides 	<p>Corrosion</p> <ul style="list-style-type: none"> • Skin corrosion/burns • Eye damage • Corrosive to metals 	<p>Flame Over Circle</p> <ul style="list-style-type: none"> • Oxidizing gases • Oxidizing liquids • Oxidizing solids 	<p>Exclamation Mark</p> <ul style="list-style-type: none"> • Irritant (eye & skin) • Skin sensitizer • Acute toxicity • Narcotic effects • Respiratory tract irritant • Hazardous to ozone layer (non-mandatory) 	<p>Health Hazard</p> <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive toxicity • Respiratory sensitizer • Target organ toxicity • Aspiration toxicity 	<p>Flame</p> <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-heating • Emits flammable gas • Self-reactives • Organic peroxides
					
<p>Gas Cylinder</p> <ul style="list-style-type: none"> • Gases under pressure 	<p>Environment</p> <ul style="list-style-type: none"> • Aquatic toxicity 	<p>Skull & Crossbones</p> <ul style="list-style-type: none"> • Acute toxicity (fatal or toxic) 			

Inventory

- emolecules.com
- Chemie.de
- SDBS
- CMR report
- Borrowed chemicals
- My orders
- Confirm orders

Search for **Advanced**

search criterion

Name, CAS-No., sum form. all words

in (select all)

own database

Search

Selected items only

list mode

edit mode

sciformation ELN
is even better

or support this project with a donation?



Search Change to lab journal Settings Logout

You are logged in as inventory on localhost/gladysz. Order system selected: 5

Databases: None

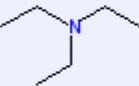

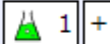

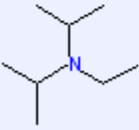

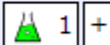

 1  0   +  

edit mode list mode 100 Results per page Show column

sender ▲▼	recipients ☰	issued ▲▼ ☰	subject ▲▼ ☰	do until ▲▼ ☰	completion status	<input type="checkbox"/>
Results from own database						
	Stock-Room, Inventory		Welcome to the list of chemicals of the .		unread ▼	  <input type="checkbox"/>

Inventory

- Search for “triethylamine”

edit mode	Standard view	Inventory management	Safety data	Physical data	100 Results per page	Show column				
structure	name	CAS number	haz. cod.	amount	barcode	storage				
Results from own database										
	Triethylamine ; Ethanamine, N,N-diethyl-; (C ₂ H ₅) ₃ N; (Diethylamino)ethane; N,N-Diethylethanamine; TEN; Triethylamin; Trietilamina; UN 1296; 1069-58-5 (maleate); 554-68-7...	121-44-8		500 g	20008147	416-Org-F, compartment Shelf			borrowed by Zhu, Yun	<input type="checkbox"/>
	N,N-Diisopropylethylamine ; Diisopropylethylamine; 2-Propanamine, N-ethyl-N-(1-methylethyl)-; Triethylamine, 1,1'-dimethyl-; Ethyldiisopropylamine;...	7087-68-5		100 ml / 100 ml	20020064	416-Org-F, compartment D-F				<input type="checkbox"/>

Inventory

- Edit “triethylamine”



edit mode | list mode | Standard view | Inventory management

Edit package

Triethylamine

amount:	500 g	storage location:	
Type of chemical:		in compartment:	
supplier:	Maeron	Responsible person:	
safety data sheet by:		<input type="checkbox"/> Keep package secret	
alt. safety data sheet by:		borrowed by:	
		Transferred to:	
		Generated barcode:	
		comment on chemical:	

Protocol:
...
14.12.2020 10:07:14 Yun Zhu: Triethylamine 500 g borrowed.
08.02.2022 09:36:12 Yun Zhu: Triethylamine 500 g returned.
08.02.2022 11:30:53 Yun Zhu: Triethylamine 500 g borrowed.
Created by: acardenal **Date of creation:** 22.05.2015 14:54:17
Last change by: acardenal **Date of last change:** 17.07.2015 11:20:32
checked by: inventory **date of last check:** 17.02.2020 14:36:00

information about the molecule

1 / 2

edit mode | list mode | Standard view | Inventory management | Safety data | Physical data

Edit package

Select: Triethylamine

purity/concentration mol/l | **in (solvent)** | **(diff. density)**

amount	500 g	storage location	416-Org-F
still available	<input type="radio"/>	in compartment	Shelf X
tara with lid	kg <input type="radio"/>	Responsible person	none
total mass of container	kg <input type="radio"/>	<input type="checkbox"/> Keep package secret	
Type of container		borrowed by:	Zhu, Yun
description (e.g. solid support)		Transferred to	-
Protection gas		Properties	<input type="checkbox"/> light sensitive <input type="checkbox"/> air sensitive <input type="checkbox"/> moisture sensitive <input type="checkbox"/> refrigerate <input type="checkbox"/> hygroscopic <input type="checkbox"/> stabilized <input type="checkbox"/> denaturated
order date		barcode	
Date opened		Generated barcode:	20008147
Expiry date			
Lot no.			
Type of chemical	(select all) Irritant		
supplier	Maeron		
Catalog no.			

comment on chemical

Inventory

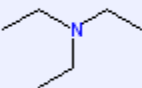





- Deleting chemicals
 - 2 options
 - Or just give me the bottle
 - DO NOT throw it out without deleting it from the inventory system
 - Be mindful of the barcode when deleting

edit mode | list mode | Standard view | Inventory management | Safety data

Edit package

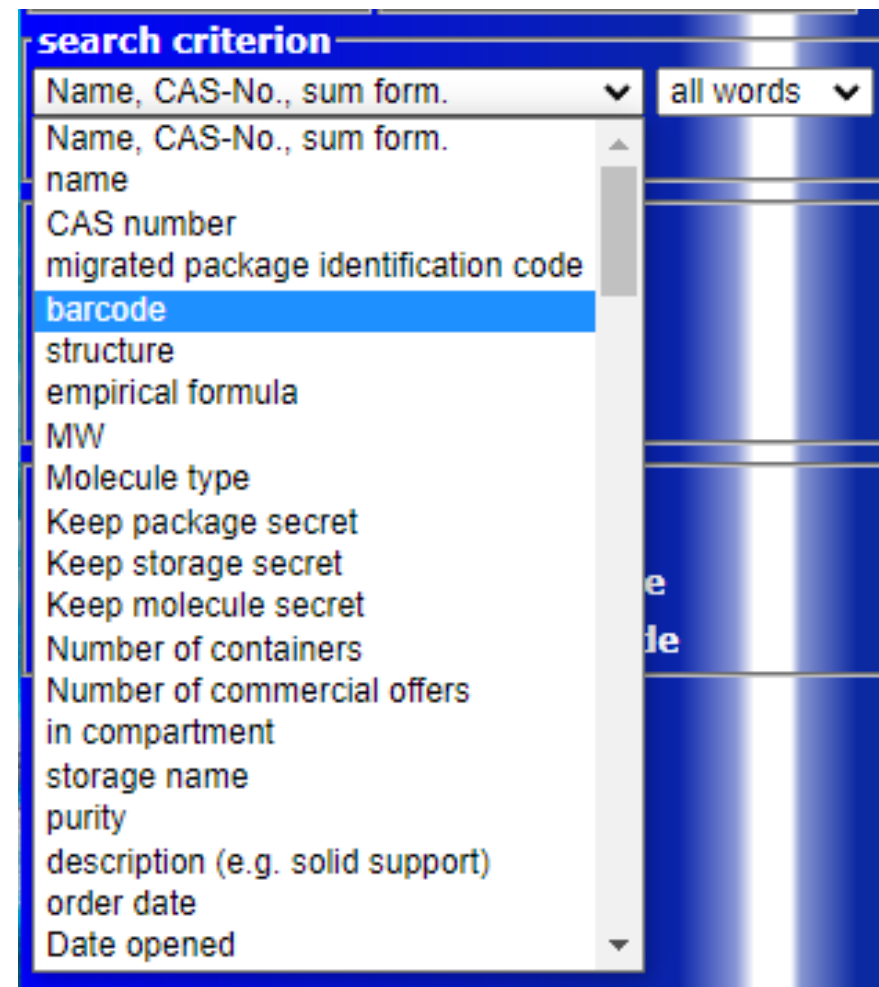
Triethylamine

amount:	500 g	storage location:	416-Org-F
Type of chemical:		in compartment:	Shelf
supplier:	Maeron	Responsible person:	none
safety data sheet by:		<input type="checkbox"/> Keep package secret	
alt. safety data sheet by:		borrowed by:	Zhu, Yun
		Transferred to:	-
		Generated barcode:	20008147
		comment on chemical:	stock-org

Results from own database							
	Triethylamine ; Ethanamine, N,N-diethyl-; (C ₂ H ₅) ₃ N; (Diethylamino)ethane; N,N-Diethylethanamine; TEN; Triaethylamin; Trietilamina; UN 1296; 1069-58-5 (maleate); 554-68-7...	121-44-8	  	500 g	20008147	416-Org-F, compartment Shelf	 1 +  borrowed by Zhu, Yun <input type="checkbox"/>

Inventory

- Deleting chemicals
 - 2 options
 - Or just give me the bottle
 - DO NOT throw it out without deleting it from the inventory system
 - Be mindful of the barcode when deleting



Inventory

- Old System:
 - Chemical comes in
 - Connor prints barcode
 - Chemical stays in box until Connor puts barcode on chemical
- New System:
 - Chemical comes in
 - Every group member is responsible for putting the barcode on their chemical before they take it to their hood



Inventory

- Old System:

- Chemical comes in
- Brenna prints barcode
- Chemical stays in box until Brenna puts barcode on chemical

- New System:

- Chemical comes in
- Every group member is responsible for putting the barcode on their chemical before they take it to their hood



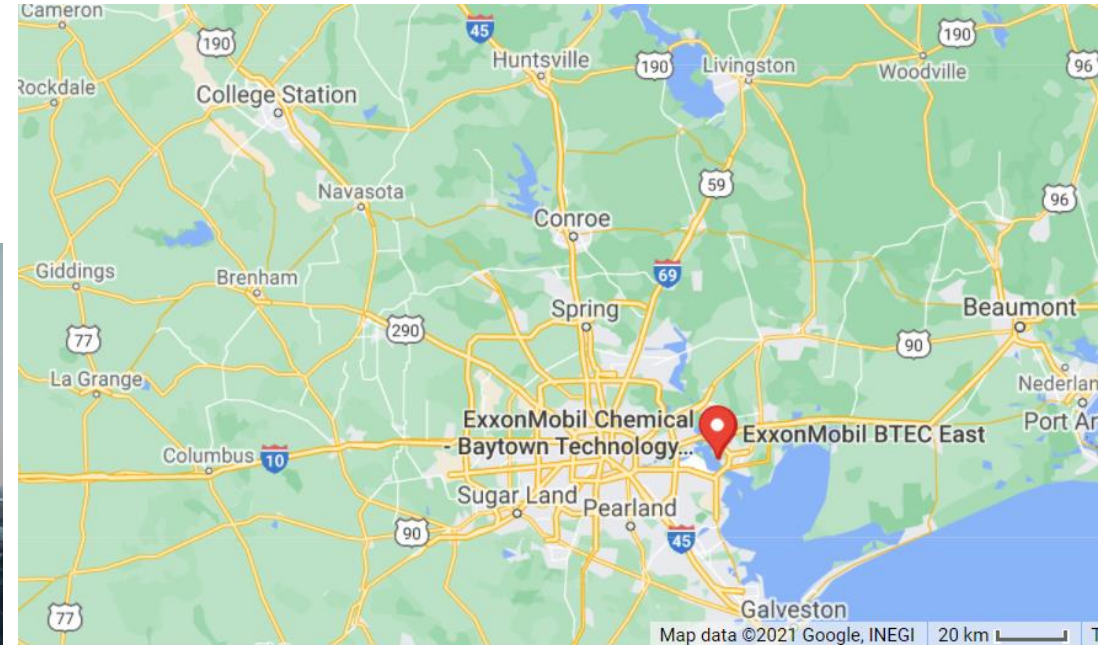
Fridge/Freezer Stir plates

- Stir plate has been removed from the freezer
- Stir plate in fridge was in use
 - Needs to be removed
- Need to order how many stir plates?



PALS Workshop

ExxonMobil



PALS Workshop

Day 1

Intro presentations

Lab tours

ExxonMobil



Day 2



Day 3

Professional development

- LPS presentation



- Communication



PALS Workshop

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Day 2



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Industry Safety Practices

Actively cultivating a Safety Culture

OUR LIFE-SAVING RULES

TARGET
ZERO FATAL ACCIDENTS

FOR GROUP EMPLOYEES, TEMPORARY WORKERS AND PERSONNEL FROM EXTERNAL COMPANIES

- Do not walk or stand under a load.
- Do not perform hot work unless the fire or explosion risks have been eliminated.
- Stay out of the path of moving vehicles, plant and equipment.
- Verify that there is no live energy (mechanical, chemical, electrical, fluids under pressure, etc.) before starting work.
- Clip on your harness when working at height.
- Do not handle your phone or any other communication device when driving.
- Only enter a trench if the appropriate wall supports are in place.
- Do not drive under the influence of alcohol or drugs.
- The atmosphere must be tested safe before entering a confined space and monitored as you work.




Our Life-Saving Rules



Golden Principle:
Stop work if conditions or behaviors are unsafe.

- Work with a valid work permit when required
- Use fall protection when working at height
- Obtain a permit for entry into a confined space
- Make sure moving machinery is guarded
- Check equipment is isolated before work begins
- Obtain authorization before disabling safety equipment
- Wear a seatbelt in motor vehicles when provided
- Do not use alcohol or drugs at work



STOP if not clear how to do the work

LIFE SAVING RULES

Failure to follow one of these Life Saving Rules can result in serious injury or death

- Isolate** energized systems (LOTO) before working on them
- Protect** yourself against a fall when working at heights and climbing ladders
- Maintain** visibility of key hazards and make sure others see you

Always use Job Safety Analysis where applicable

Failure to follow any of these rules will result in immediate suspension of the work activity

Lubricants Global Business Unit | **Actively Caring** | ExxonMobil

PALS Workshop

Day 1

Intro presentations

Lab tours

ExxonMobil



Day 2



Day 3

Professional development

- LPS presentation



- Communication



Safety Posters

- Wide range of topics



Glove Etiquette

Easy steps to follow for proper glove usage

- Selection**
 - For concentrated acids and alkalis and organic solvents, nitrile, natural rubber, or neoprene gloves are recommended.
 - Use gloves made of heat-resistant materials (leather, Nomex) to handle hot objects. NEVER use rubber or plastic gloves.
 - Insulated gloves should be worn when handling liquid nitrogen or dry ice.
- Inspection**
 - Be sure to check glove integrity prior to use.
 - Look for elasticity, discoloration, punctures, and tears.
- Cleaning**
 - Reusable gloves should be washed thoroughly with either tap or soap and water before removal.
 - After removal, reusable gloves should be dried and properly stored.
- Removal**
 - Always remove gloves before entering elevators, hallways, or other public areas to avoid contamination of door knobs, light switches, etc.
 - When removing gloves, pull the cuff over the hand to minimize potential contamination.

Information courtesy of UC Santa Cruz Environmental Health & Safety

Email cssc@chem.tamu.edu for "Gloves Off" stickers to place around your lab



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

We stole this from the ACS: <https://www.acs.org/content/acs/en/chemical-safety/basics/incompatible-chemicals.html>



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



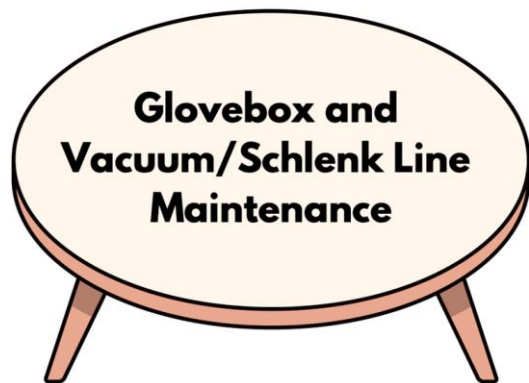
Instructional Round Table



Tell us your thoughts!
tx.ag/safety

Round Table Discussion

Hosted by Chemistry Student Safety Committee



April 28th 4-5 pm in CHEM 255

Snacks will be provided

WOULD YOU LIKE TO DISCUSS OTHER TOPICS? EMAIL US TOPIC SUGGESTIONS, QUESTIONS, OR CONCERNS AT CSSC@CHEM.TAMU.EDU



Tell us your thoughts!
tx.ag/safety

Round Table Discussion

Hosted by Chemistry Student Safety Committee



June 10th 10-11am in CHEM 255

Coffee and pastries will be provided

WOULD YOU LIKE TO DISCUSS OTHER TOPICS? EMAIL US TOPIC SUGGESTIONS, QUESTIONS, OR CONCERNS AT CSSC@CHEM.TAMU.EDU

Departmental Safety Website

CSSC Safety Feedback Form

The screenshot shows the Chemistry Departmental Safety Website. At the top left is the Texas A&M University logo and the word "CHEMISTRY". To the right is a "Site Search" box. Below the header is a navigation menu with items: About, Academics, Faculty & Research, Directory, Department Resources, and Alumni & Giving. The main content area has a heading "Safety in Chemistry at Texas A&M" followed by a paragraph about the department's commitment to safety. Below this is a "Safety Suggestions" section with a paragraph explaining the CSSC's mission and a "Submit a Safety Suggestion" button highlighted with a red box. To the right of the suggestions is an "Upcoming Safety Events" section. At the bottom, there are "Safety Resources" and "CSSC Safety Improvement Projects" sections with links to "Department Safety Guide" and "Laboratory Signage Standardization".

CSSC Safety Feedback Form

Howdy! The Chemistry Student Safety Committee (CSSC) wants to hear your thoughts about safety in the Chemistry Department.

* Required

Position Type (optional)

Faculty

Staff

Post-Doc

Graduate Student

Undergraduate Student

Your Name (optional)

Your answer _____

Your Email (optional, for follow-up communication)

Your answer _____

What feedback do you have for CSSC regarding departmental safety? *

This can be ideas for CSSC projects or safety improvements, safety concerns you've seen in the department, safety-related incidents that may serve as teachable moments, or any other feedback that would like to bring to our attention. All information is helpful!

Your answer _____

Submit

PALS Workshop

Day 1

Intro presentations

Lab tours

ExxonMobil



Day 2



Day 3

Professional development

- LPS presentation



- Communication



COMMUNICATION

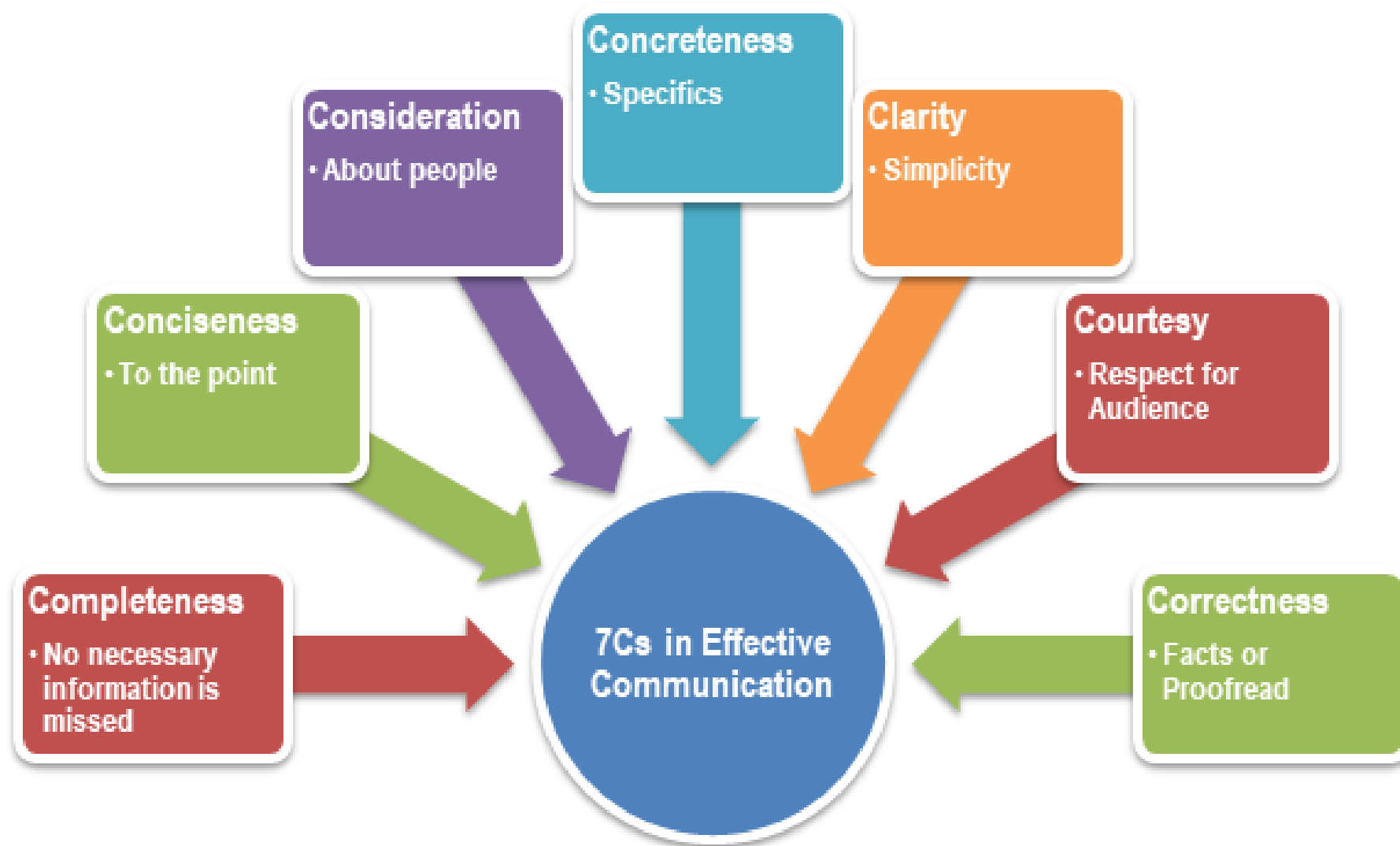


Communication

- Who thinks they are a good communicator?
- We are really bad at talking to each other
- We need to talk to each other more
 - When something runs out
 - When there's an accident/incident
 - Any kind of safety issue
 - Any kind of general lab issue



Communication



Communication

- Find the right person to help with the problem
 - Me for safety issues, Sam for glovebox, etc.
- If you can't find them, text or send an email promptly
- Be direct
- Be specific
- Follow through on the issue
- Take responsibility



Taking Responsibility

- Too often something goes wrong and no one says anything, then leaves the problem alone for someone else to clean up
- Owning up to mistakes, not blaming others, being proactive on group duties and tasks around the lab
- No one will be mad over a mistake
- We need to fix it so the lab can continue to function



“The trouble with this company is nobody wants to accept responsibility for anything. But don't tell anyone I said that!”

Taking Responsibility

- If you notice a chemical has run out
 - Order it yourself
 - Tell me or Sam and we will order it/show you how
- If you notice there is a spill/mess somewhere:
 - Find whoever made the mess, tell them to/help clean it up
 - If you don't know, then clean it up yourself
- Chemical risk assessment
 - You not only put yourself at risk, but your coworkers as well



Approaching Others



Communication

- Our group will be safer
- We will trust each other more
- We will work together better
- We will all be more efficient and productive





THANK YOU!