# Safety and Inventory


Brenna Collins, Group Meeting, August 24th 2022

# General Safety

- PPE

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- Be aware of your surroundings



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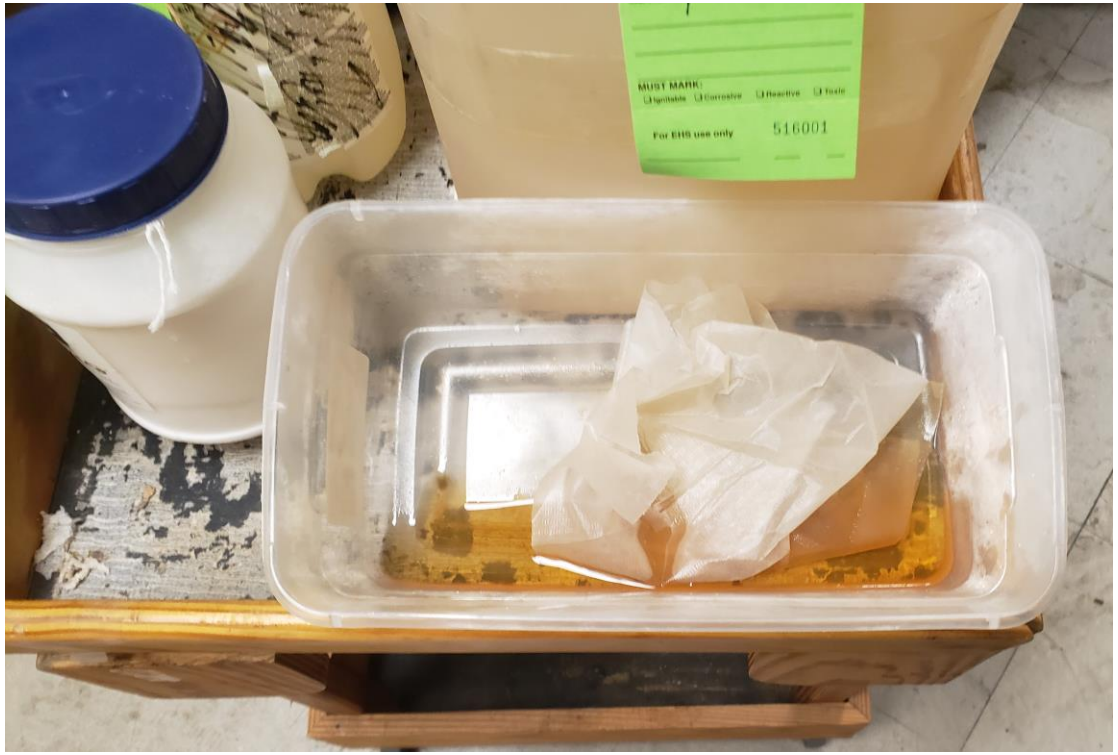
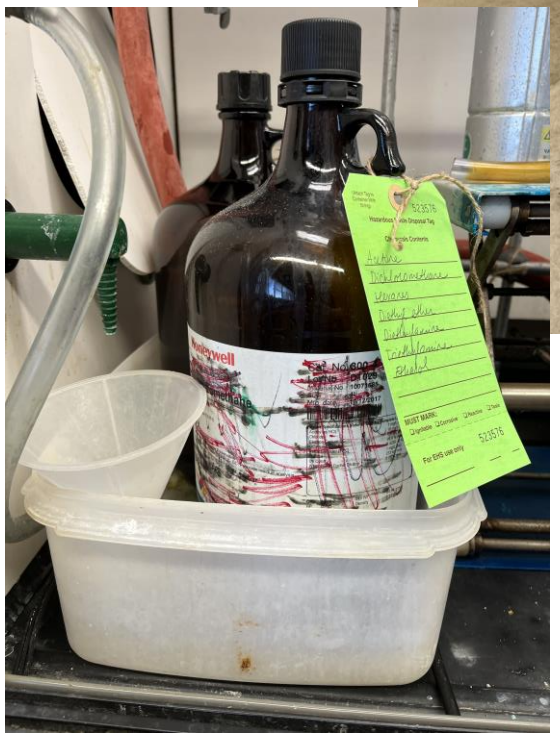
- Be aware of your surroundings
- See something, say something



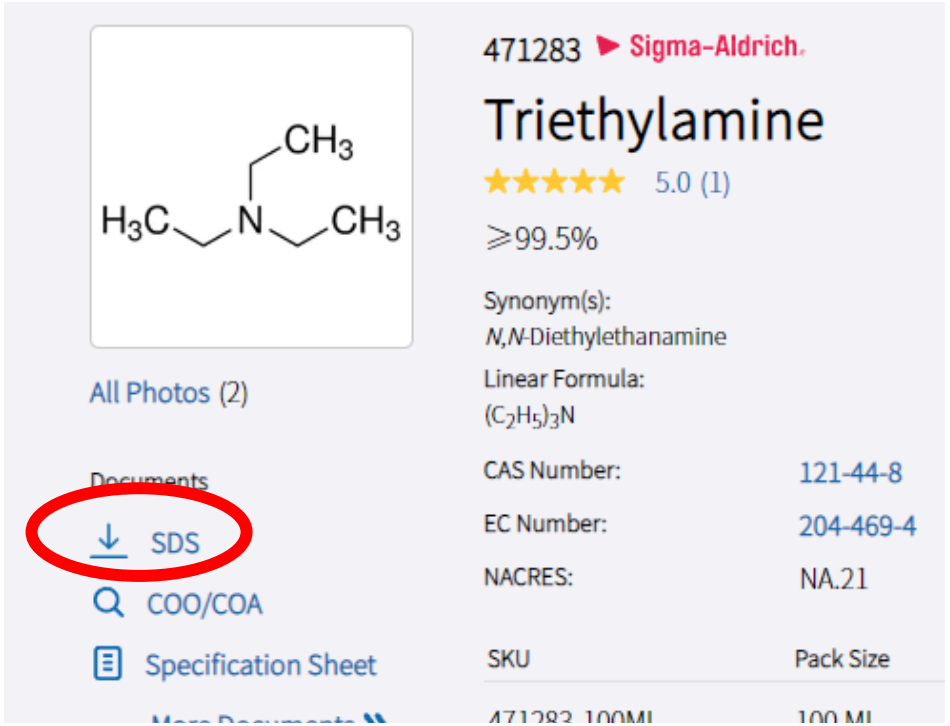
# General Safety

- 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




**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

**Exploding Bomb**
- Explosives
- Self-reactives
- Organic Peroxides

**Corrosion**
- Skin corrosion/burns
- Eye damage
- Corrosive to metals

**Flame Over Circle**
- Oxidizing gases
- Oxidizing liquids
- Oxidizing solids

**Gas Cylinder**
- Gases under pressure

**Enviroment**
- Aquatic toxicity

**Skull & Crossbones**
- Acute toxicity (fatal or toxic)

**Exclamation Mark**
- Irritant (eye & skin)
- Skin sensitizer
- Acute toxicity
- Narcotic effects
- Respiratory tract irritant
- Hazardous to ozone layer (non-mandatory)

**Health Hazard**
- Carcinogen
- Mutagenicity
- Reprodcutive toxicity
- Respiratory sensitizer
- Target organ toxicity
- Aspiration toxicity

**Flame**
- Flammables
- Pyrophorics
- Self-heating
- Emits flammable gas
- Self-reactives
- Organic peroxides

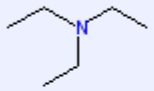
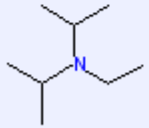
# Inventory


TECHNISCHE UNIVERSITÄT KAISERSLAUTERN
open inventory
chemical database - © 2015 Felix Rudolphi, Lukas Gooßen
FACHBEREICH CHEMIE
emolecules.com
Chemie.de
SDBS
CMR report
Borrowed chemicals
My orders
Confirm orders
Search for
Advanced
advanced search
NEW
search criterion
Name, CAS-No., sum form.
all words
in (select all)
own database
Search
Selected items only
ALL
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
edit mode
list mode
100 Results per page
Show column
sender
recipients
issued
subject
do until
completion status
Results from own database
Stock-Room, Inventory
Welcome to the list of chemicals of the .
unread

# Inventory

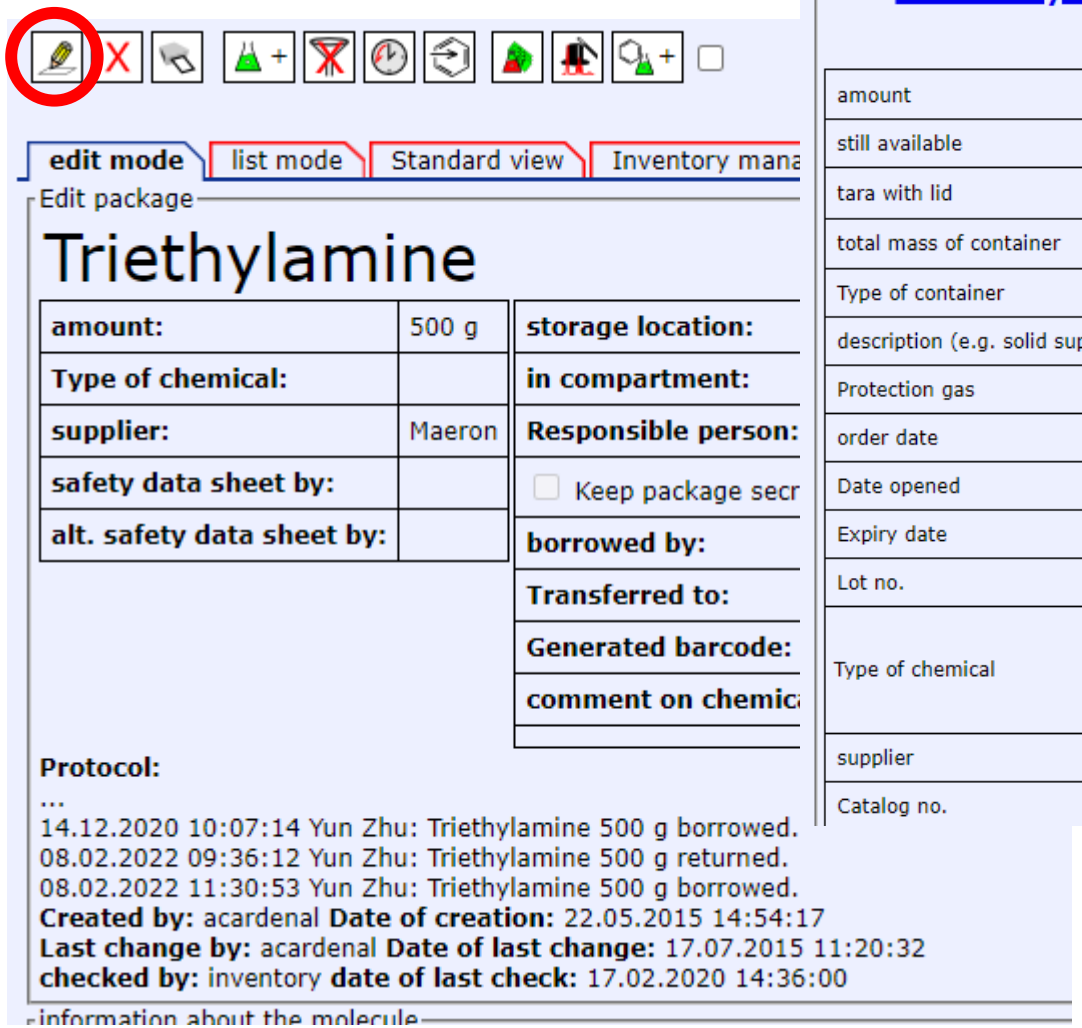
- Search for “triethylamine”

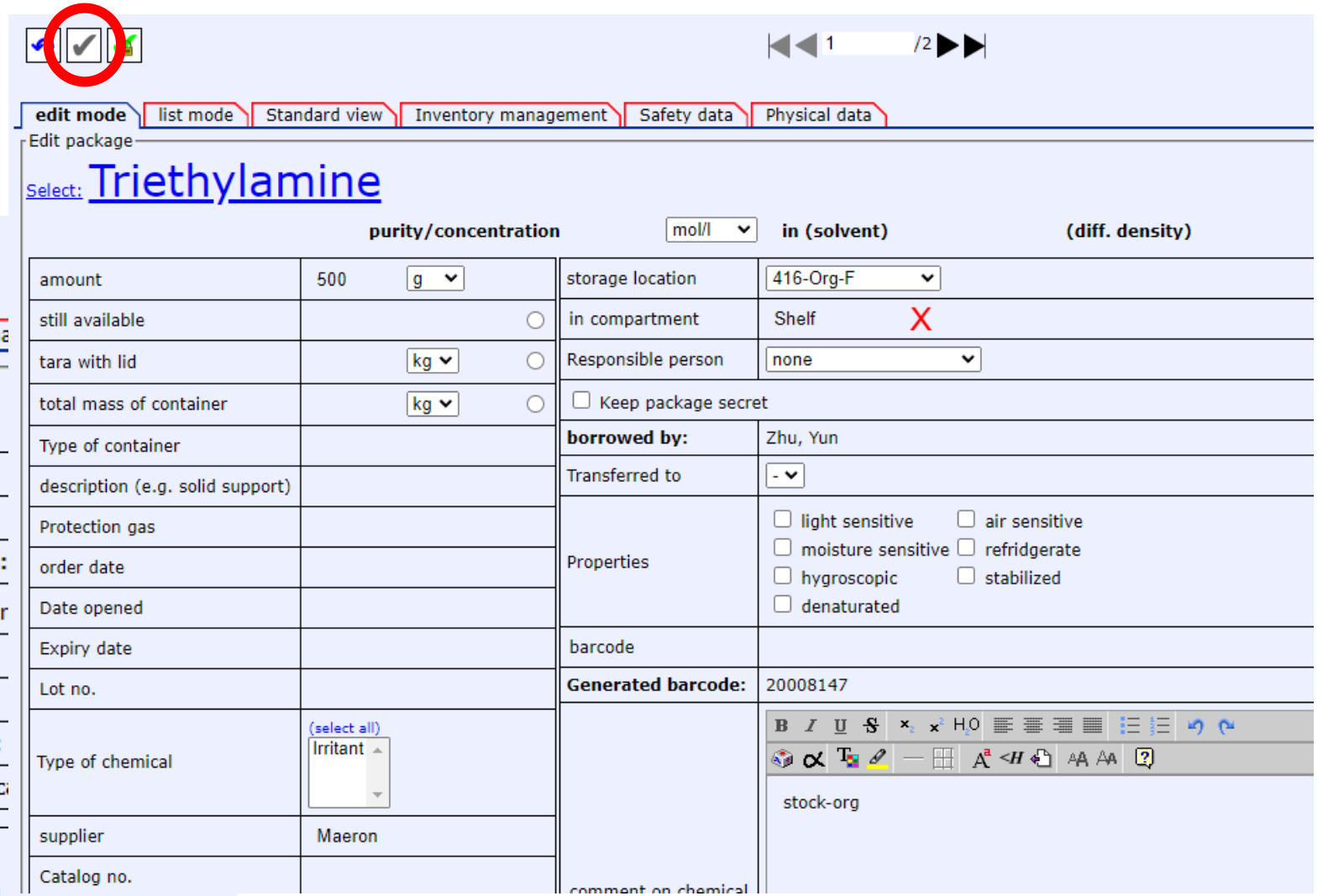
edit mode | **Standard view** | Inventory management | Safety data | Physical data | 100 Results per page | Show column

| structure | name | CAS number | haz. cod. | amount | barcode | storage | |
|---|---|---|---|---|---|---|---|
| **Results from own database** | | | | | | | |
|  | **Triethylamine**; Ethanamine, N,N-diethyl-; (C2H5)3N; (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 |
|  | **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 | 1 + |

# Inventory

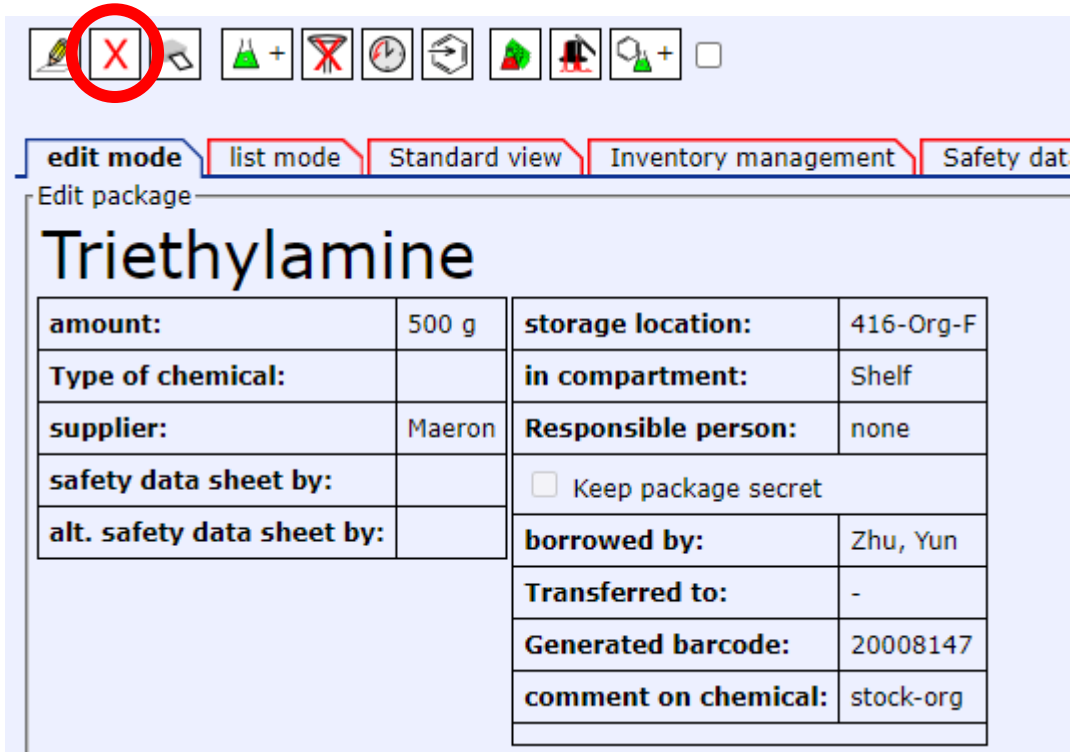
- Edit “triethylamine”

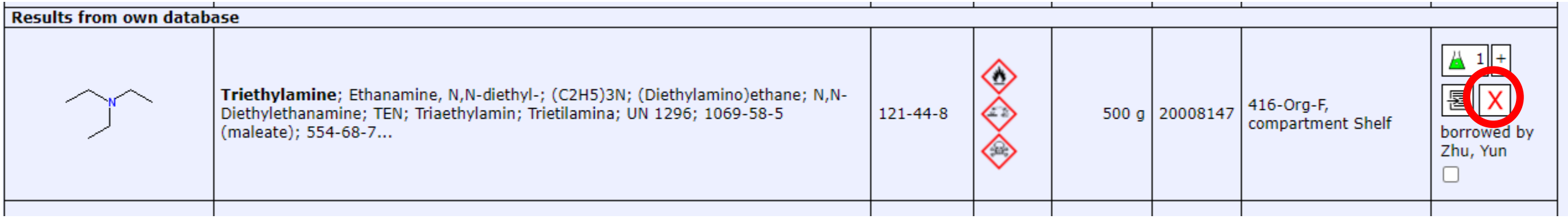


# Inventory

- 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



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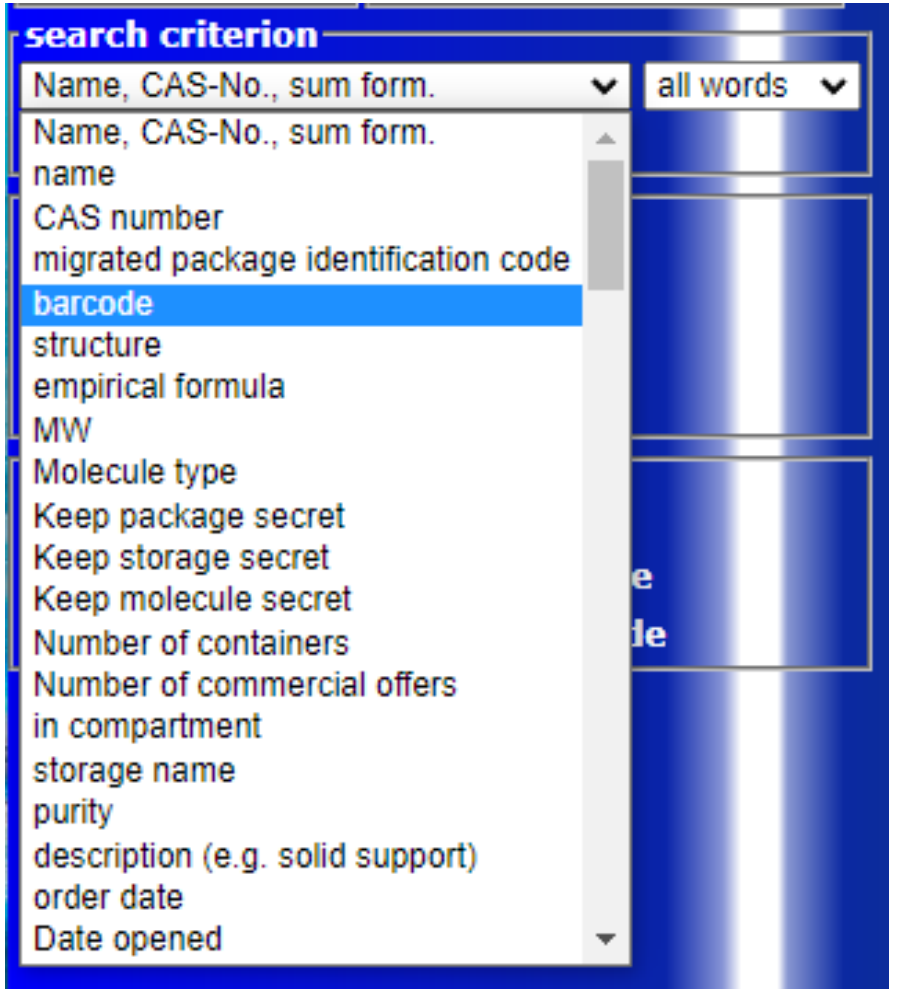


# Inventory

- 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

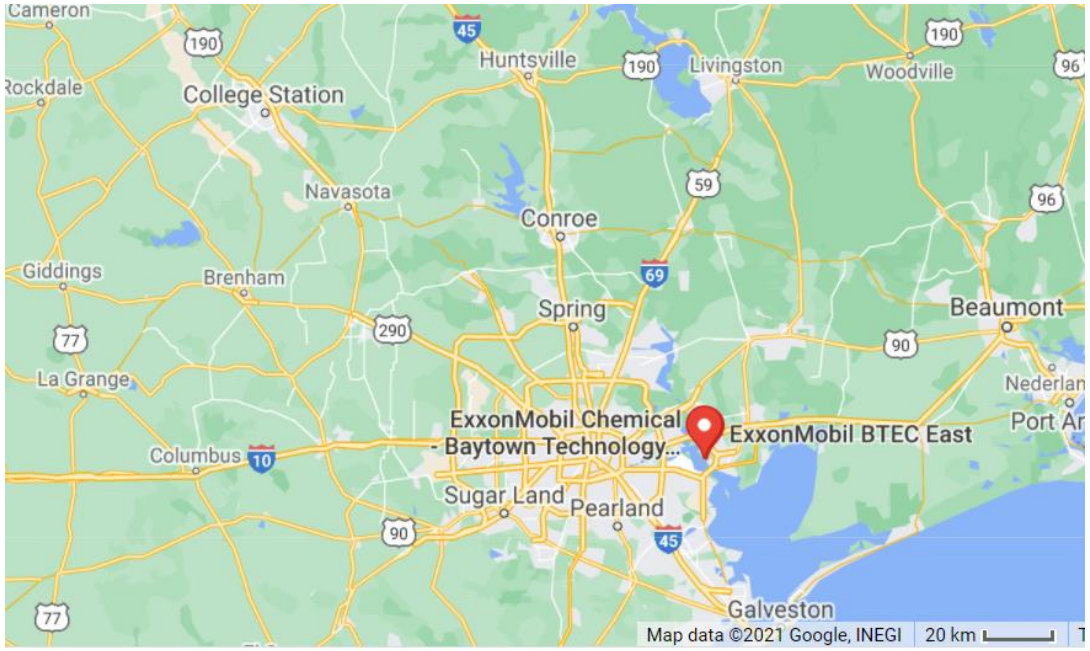
- Old System:
  - Chemical comes in
  - Brenna prints barcode
  - Chemical stays in box until Brenna puts barcode on chemical
- New System:
  - Chemical comes in
  - Every group member is responsible for putting the barcode on their chemical before they take it to their hood

# 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

Texas A&M University 1876

UH

UF University of Florida

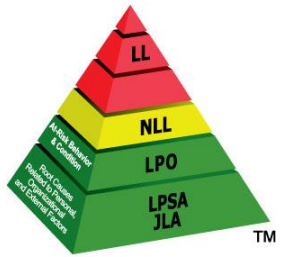
The University of Texas at Austin

Washington University in St. Louis 1853

## Day 3

Professional development

- LPS presentation




- Communication

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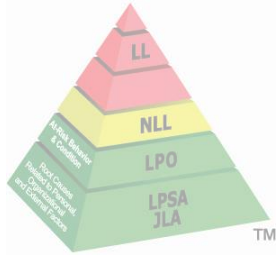
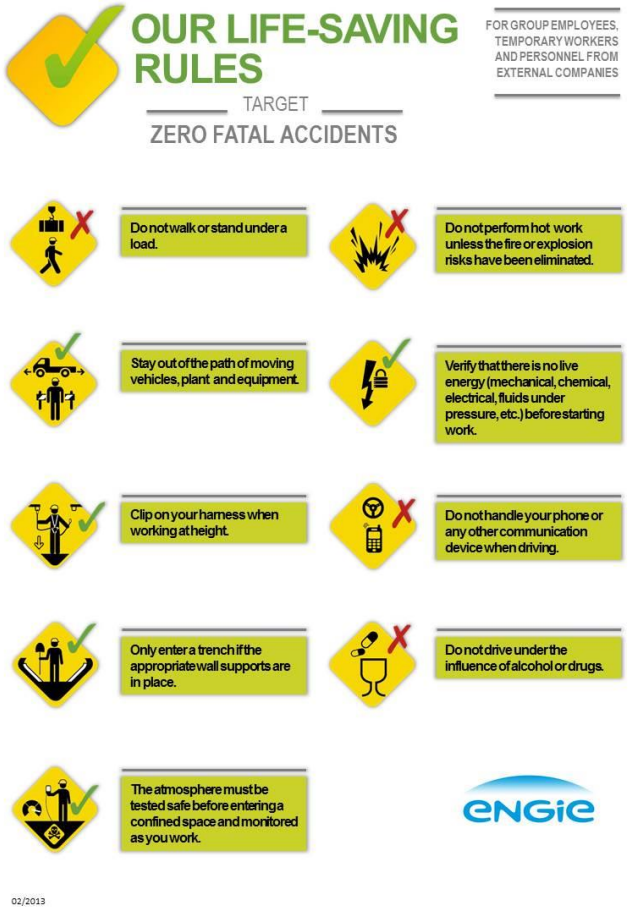



- Communication

# Industry Safety Practices

*Actively cultivating a Safety Culture*





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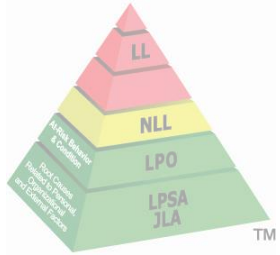



- Communication

# Safety Posters

- Wide range of topics

TEXAS A&M UNIVERSITY Chemistry

Tell us your thoughts!
tx.ag/safety

## 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**

TEXAS A&M UNIVERSITY Chemistry

Tell us your thoughts!
tx.ag/safety

## 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

TEXAS A&M UNIVERSITY Chemistry

Tell us your thoughts!
tx.ag/safety

## 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

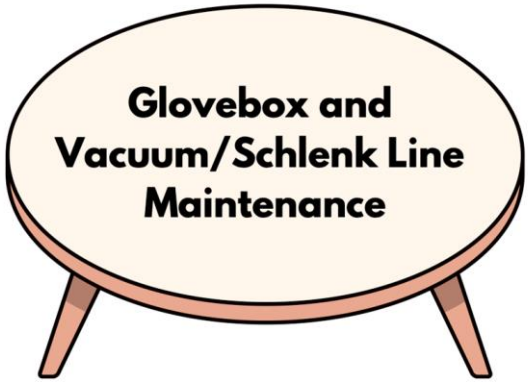
TEXAS A&M UNIVERSITY Chemistry

Chemistry Student Safety Committee

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,


TEXAS A&M UNIVERSITY Chemistry

Chemistry Student Safety Committee

Tell us your thoughts!
tx.ag/safety

## Round Table Discussion

*Hosted by Chemistry Student Safety Committee*

**Chemical Storage and Waste**
**&**
**Handling Gas Cylinders**

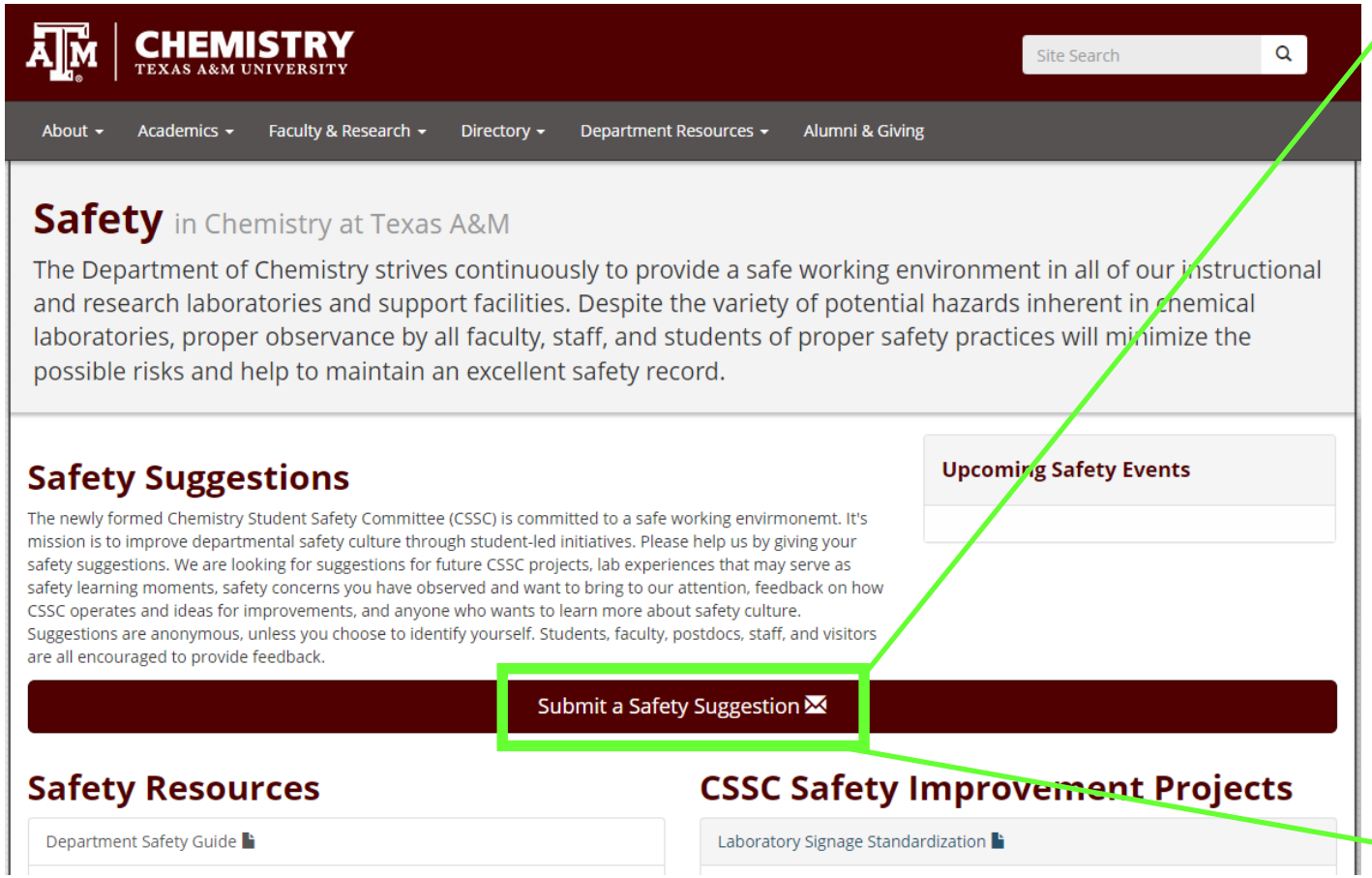
June 10th 10-11am in CHEM 255

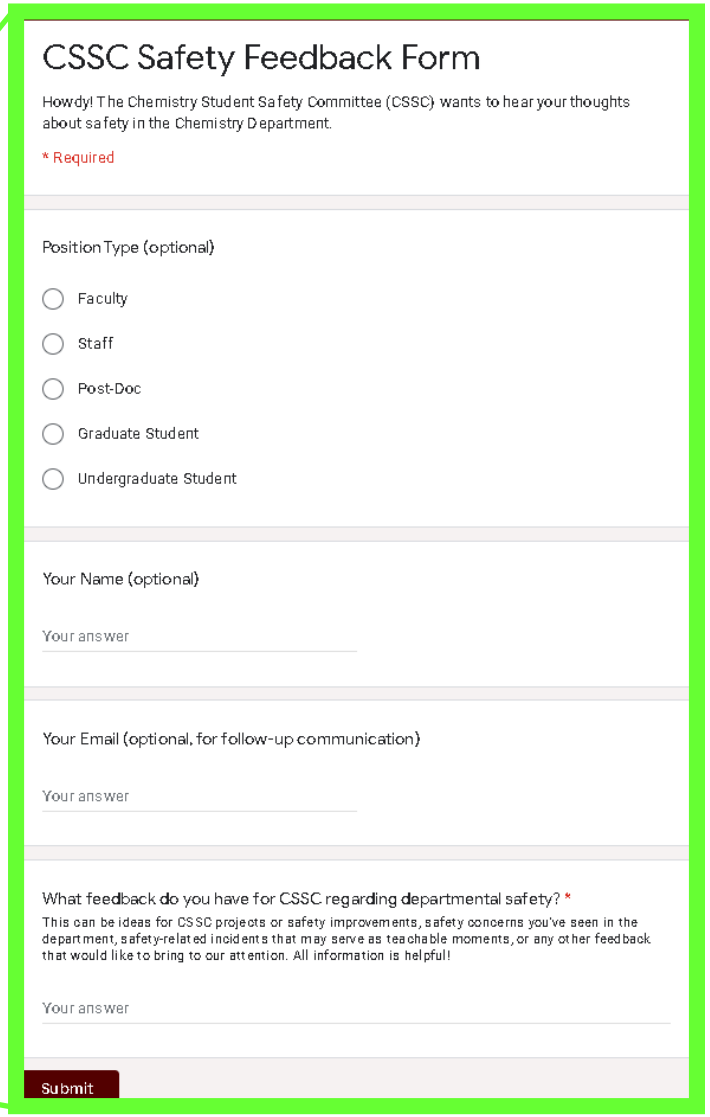
Coffee and pastries will be provided

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

# Departmental Safety Website

## CSSC Safety Feedback Form



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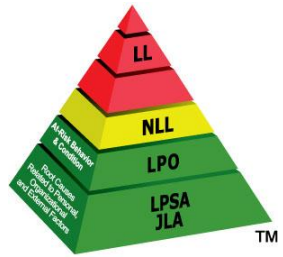
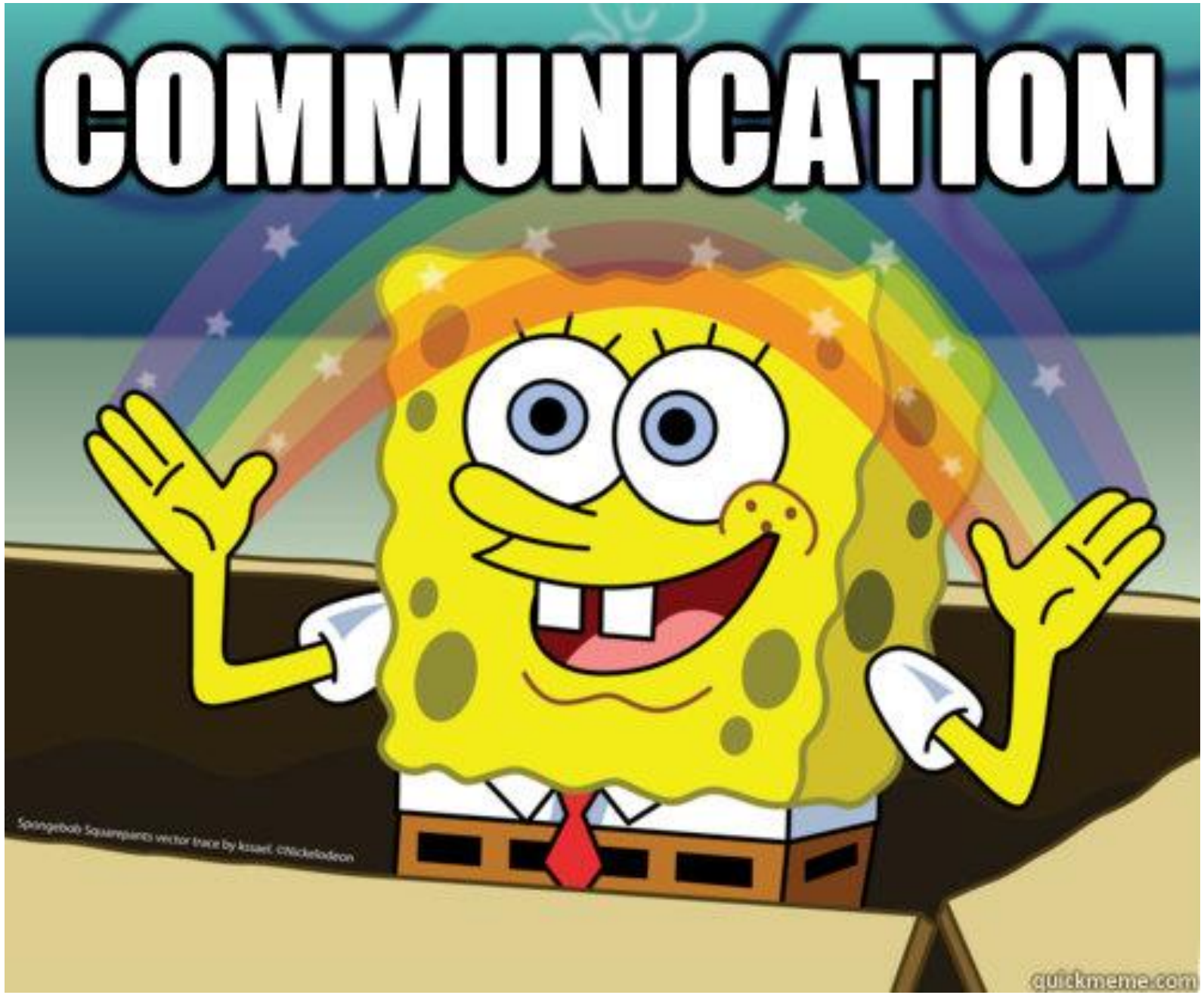


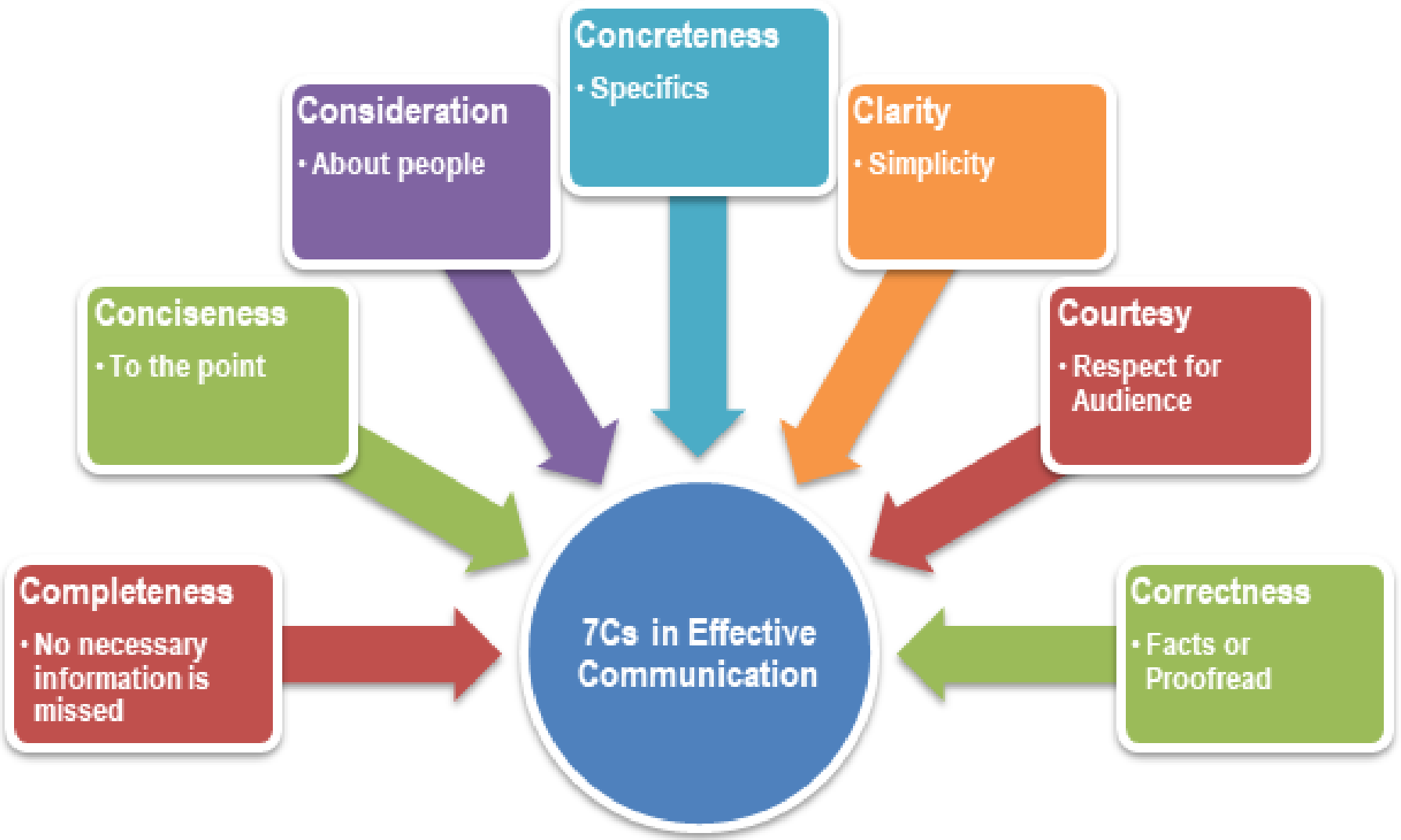

- Communication


COMMUNICATION
quickmeme.com

# 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/indicent
  - 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

# 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


# 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!