

# Lab Safety

Zeyi Wang, Long Chen, Jijian Xu

- 1. existing problems
- 2. chemical use in our lab
- 3. lab cleaning arrangement

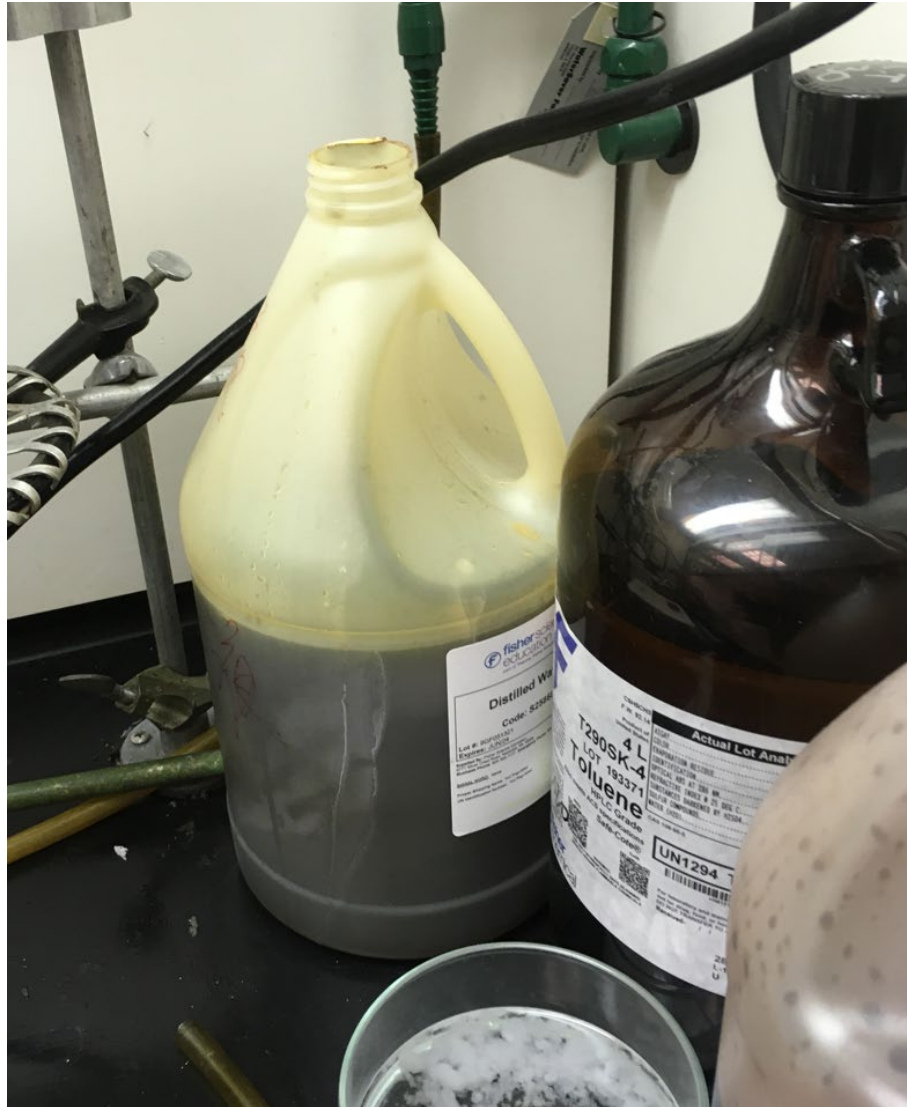
- 1.existing problems

# 1. Fume hood



Crowded, wastes, unknown liquid

- Fume hood is for operation, not for storage!



No waste  
(Except special chemical)

pull into Public chemical recycling bottles(3237C)



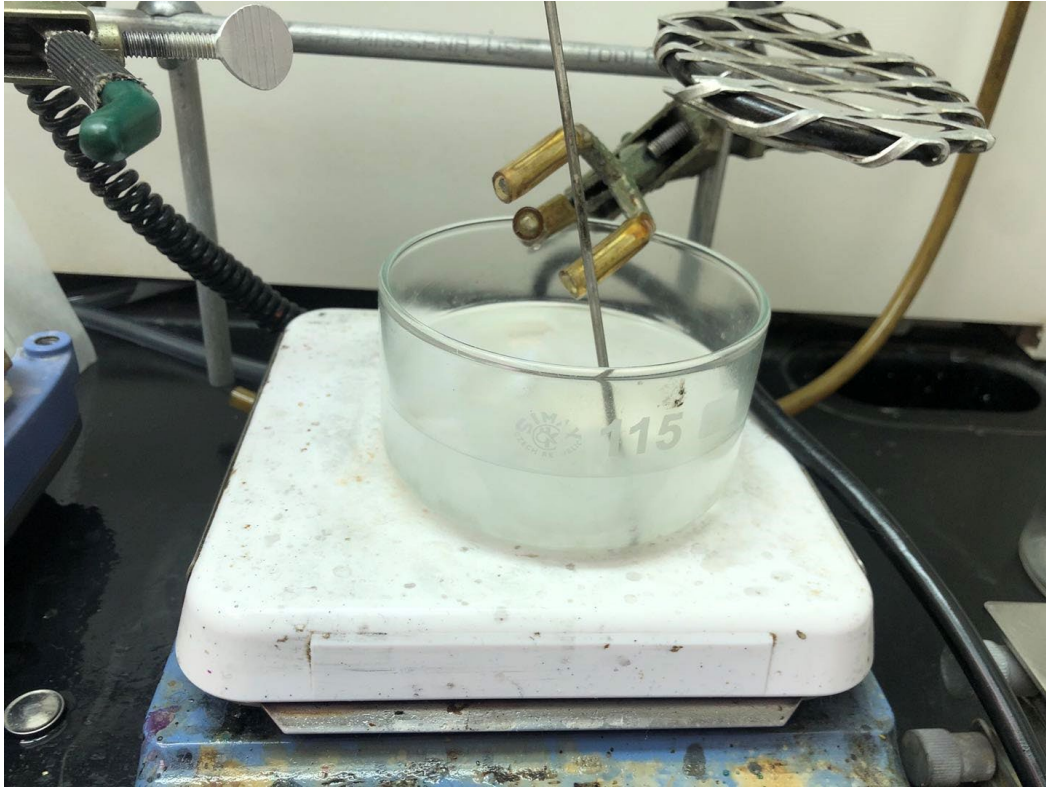
- Fume hood is for operation, not for storage!



no unlabeled container

Label with:  
1. User's Name  
2. Full English Name of  
Liquid

- Fume hood is for operation, not for storage!



Should label user's name and reaction!

- Fume hood is for operation, not for storage!

no useless container





# 1. Fume hood

- No waste, no unlabeled glass, no unlabeled reaction, no useless devices or container.
- Suggested procedure for using fume hood:
  - 1. Before Use: clean surroundings
  - 2. In use: label for each glass and reaction
  - 3. After Use: deal with chemical waste immediately.

## 2. Cylinders

Flammable gas && Oxygen!!!



## 2. Cylinders

Gas Tube cannot use  
for flammable gas.

Use Iron tube



Hydrogen Safety, please consult  
Longsheng Cao

## 2. Cylinders



Tie the cylinders



Fix only one cylinder at each position.

## 2. Cylinders



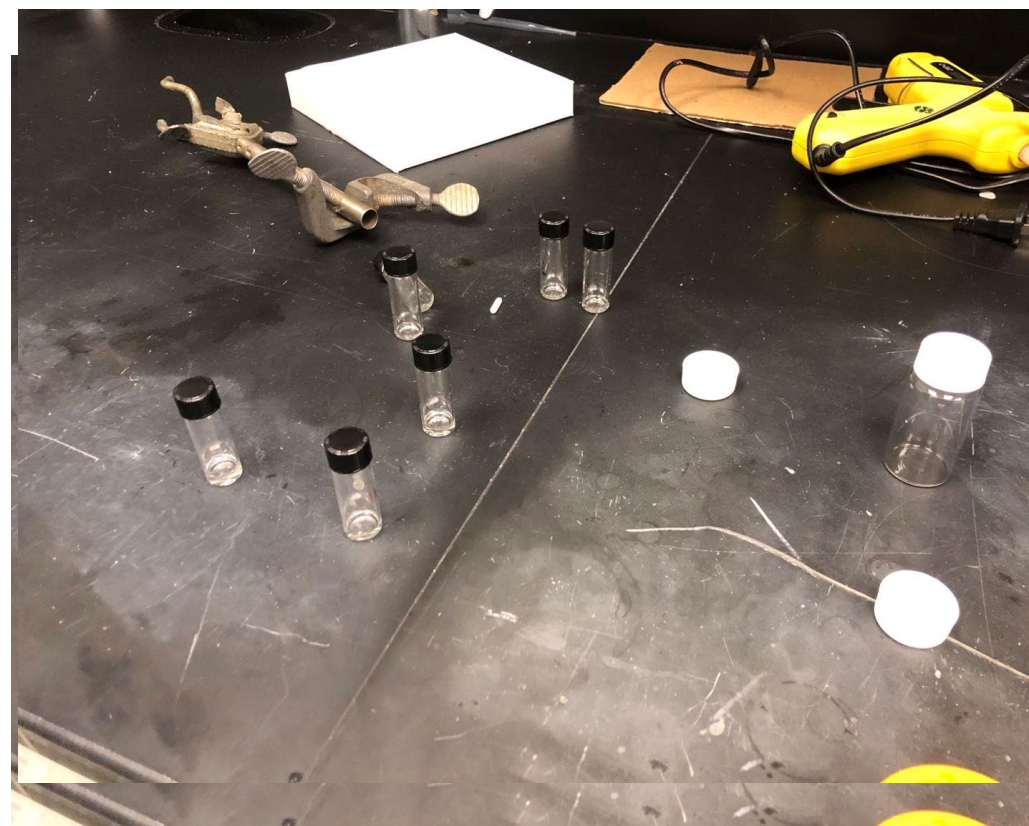
Cap

# 3. Table

Keep Clean, in order

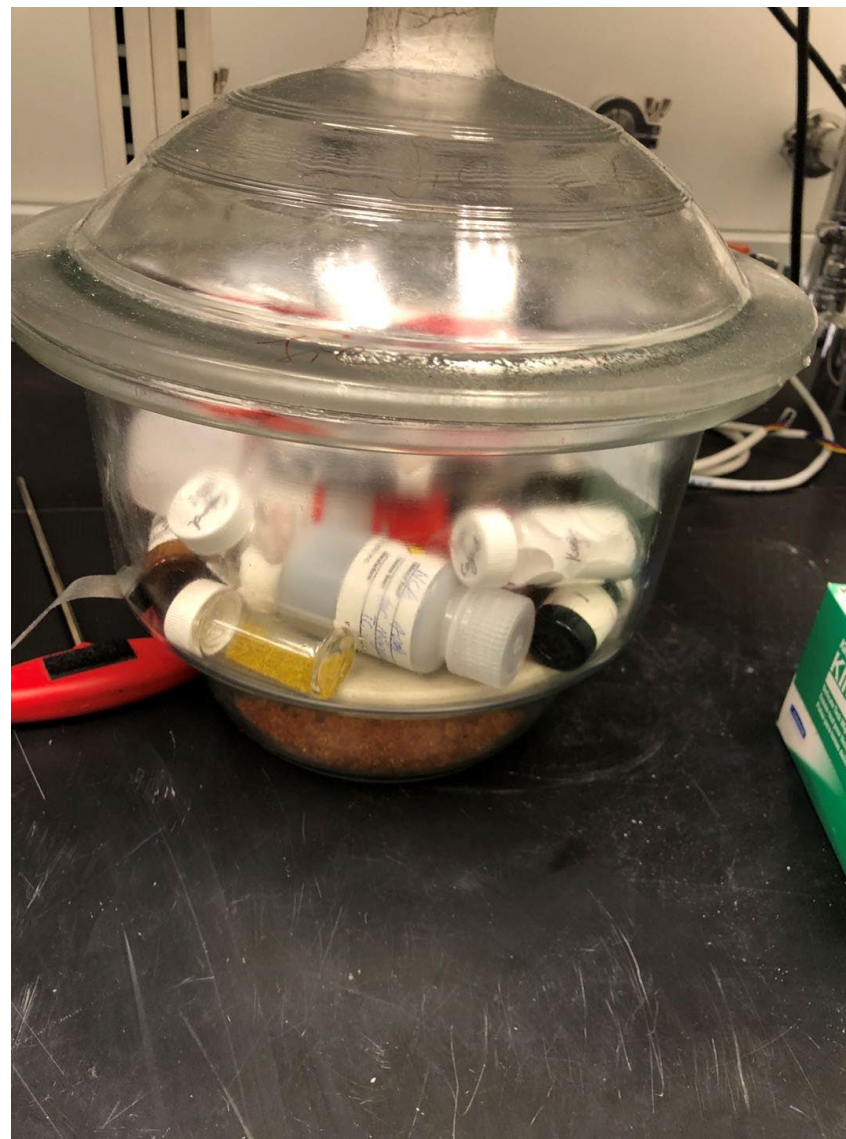
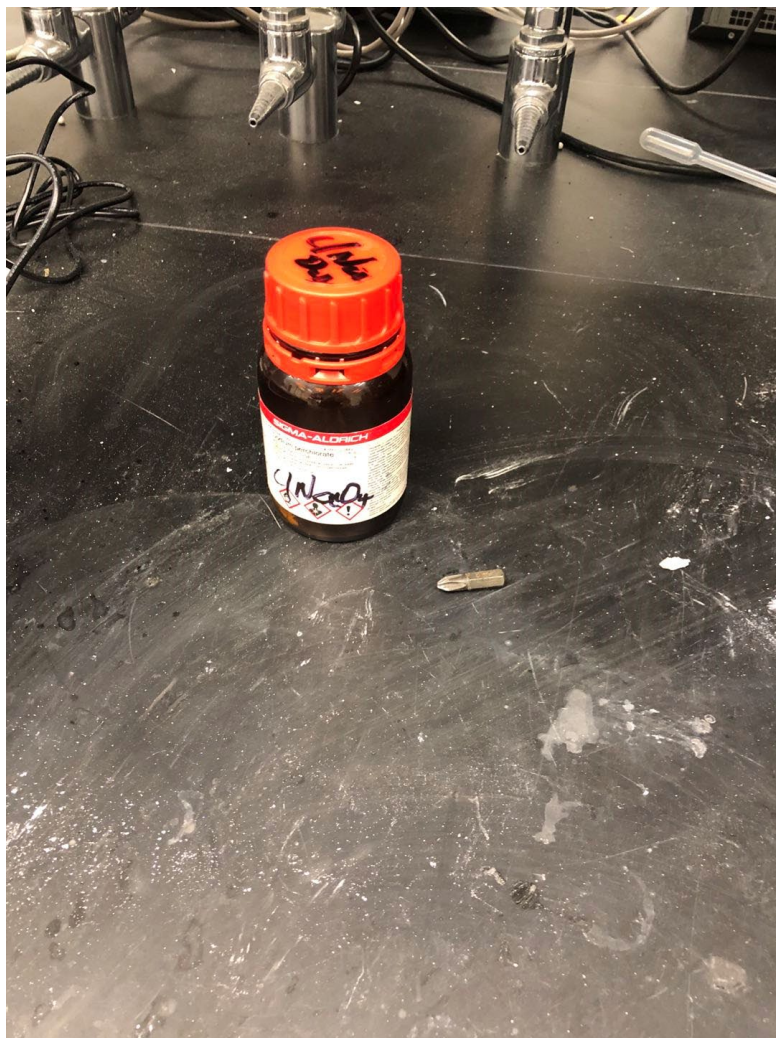


No Waste paper



No unlabeled chemicals

### 3. Table



# 3. Table





# 3. Table

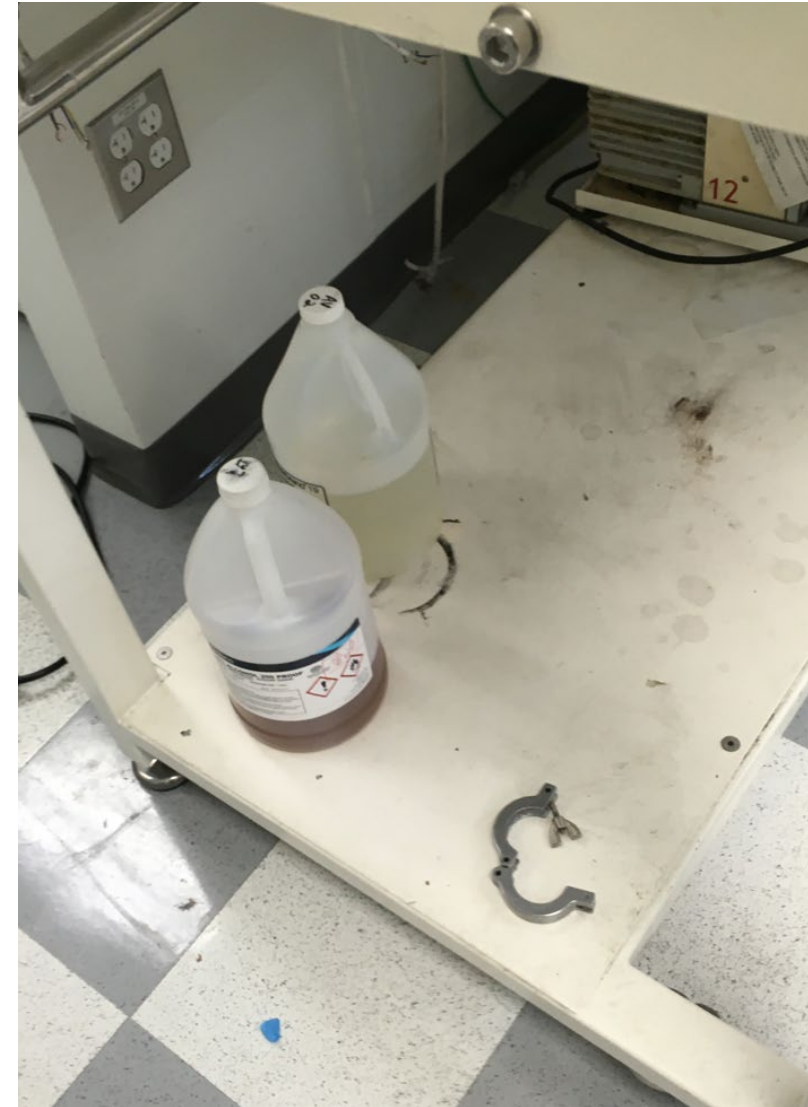
No whole bottle of water or ethanol



Cabinet below sink

# 4. Glovebox

- (1). Keep surroundings safe.





# 4. Glovebox

- (3). trash:
- solid waste;



Li-metal:

# 4. Glovebox

- (3). trash:
- Liquid: Do not put in fume hood.

Aqueous Acid

Aqueous Base/Neutral

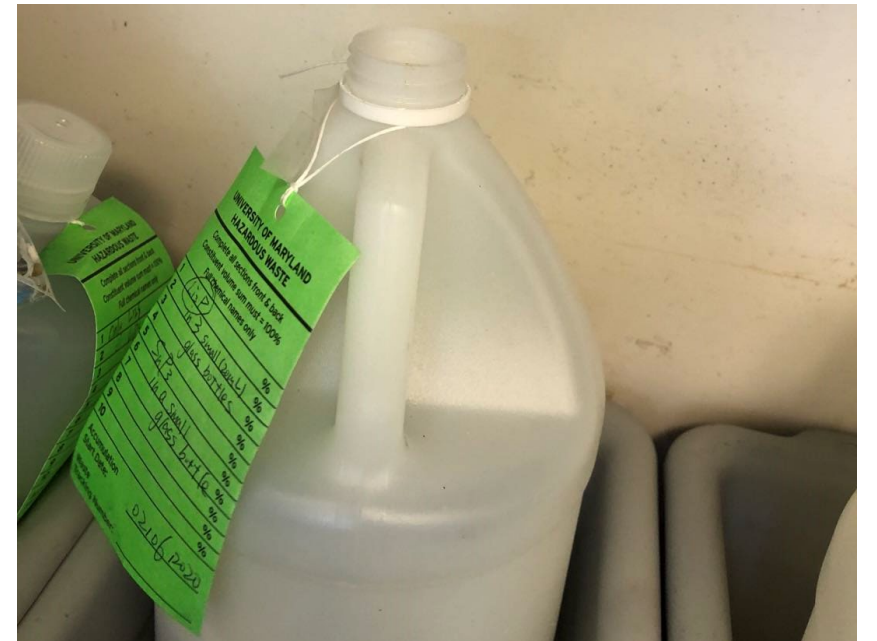
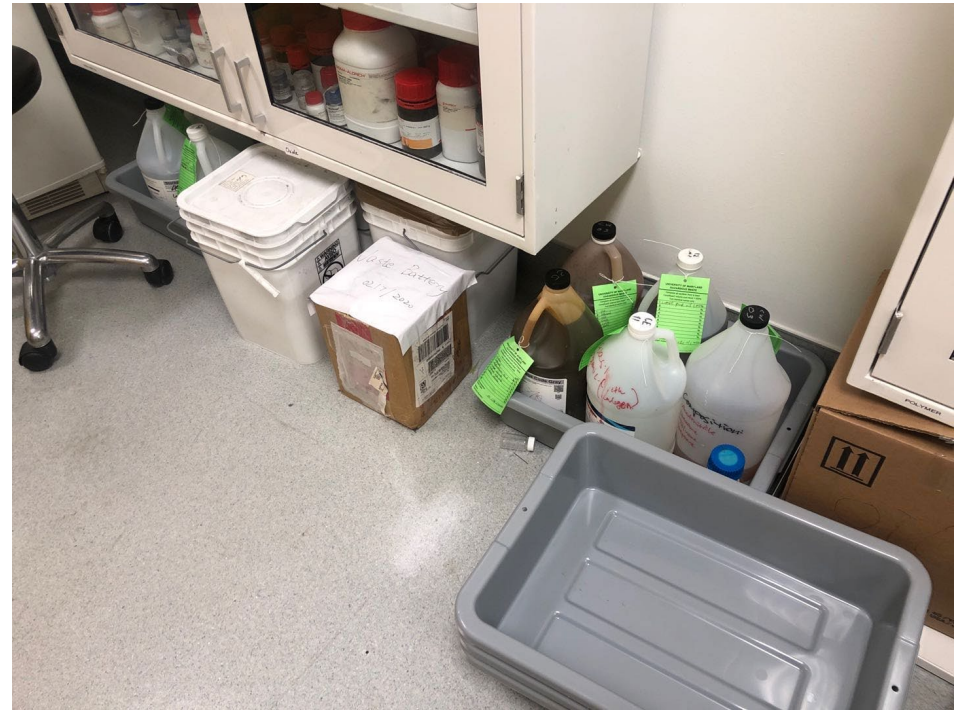
Organic

Organic (halogen)

Pump Oil

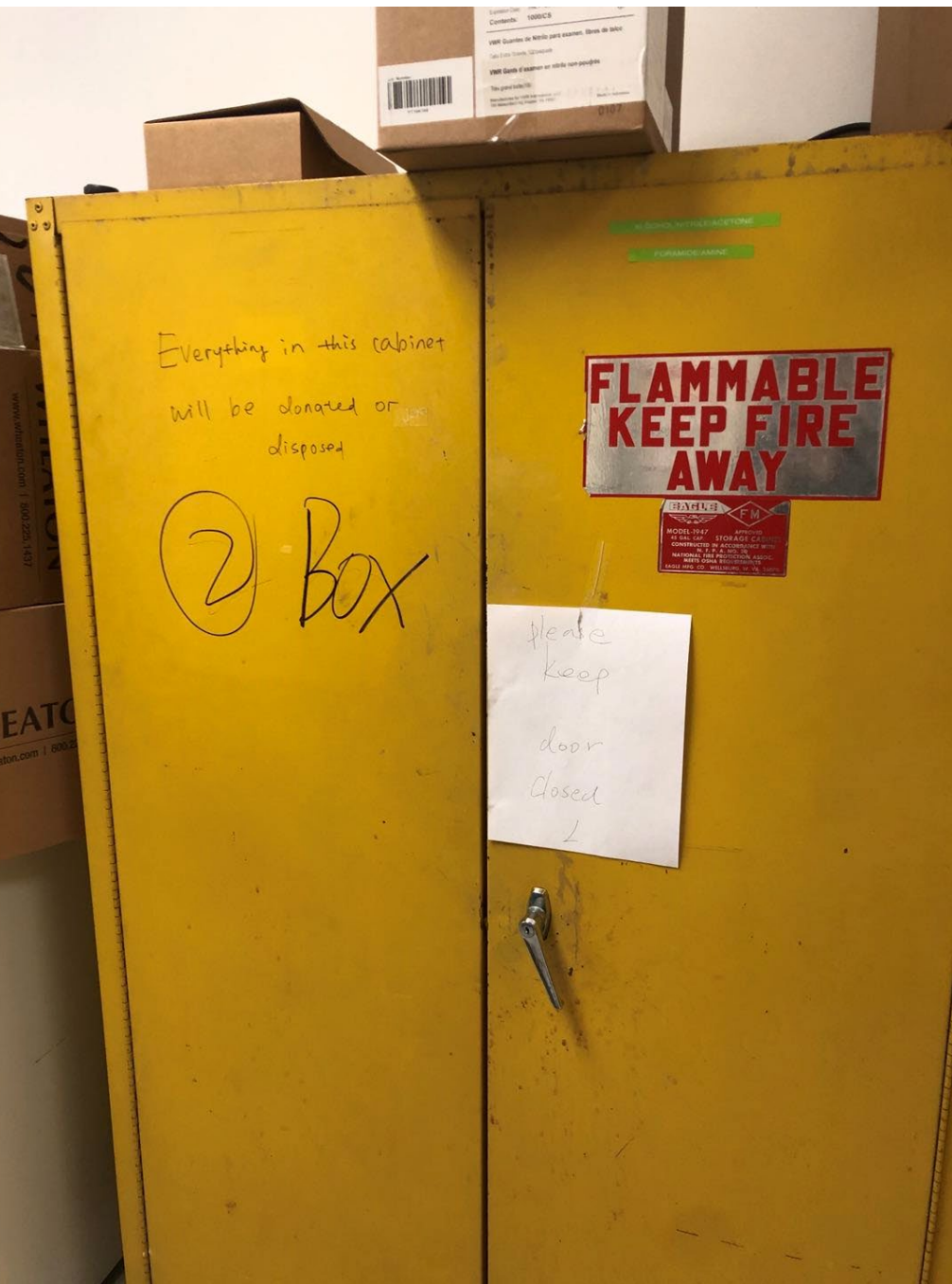
Add when needed

1. Cap
2. Label using green paper
3. Secondary container

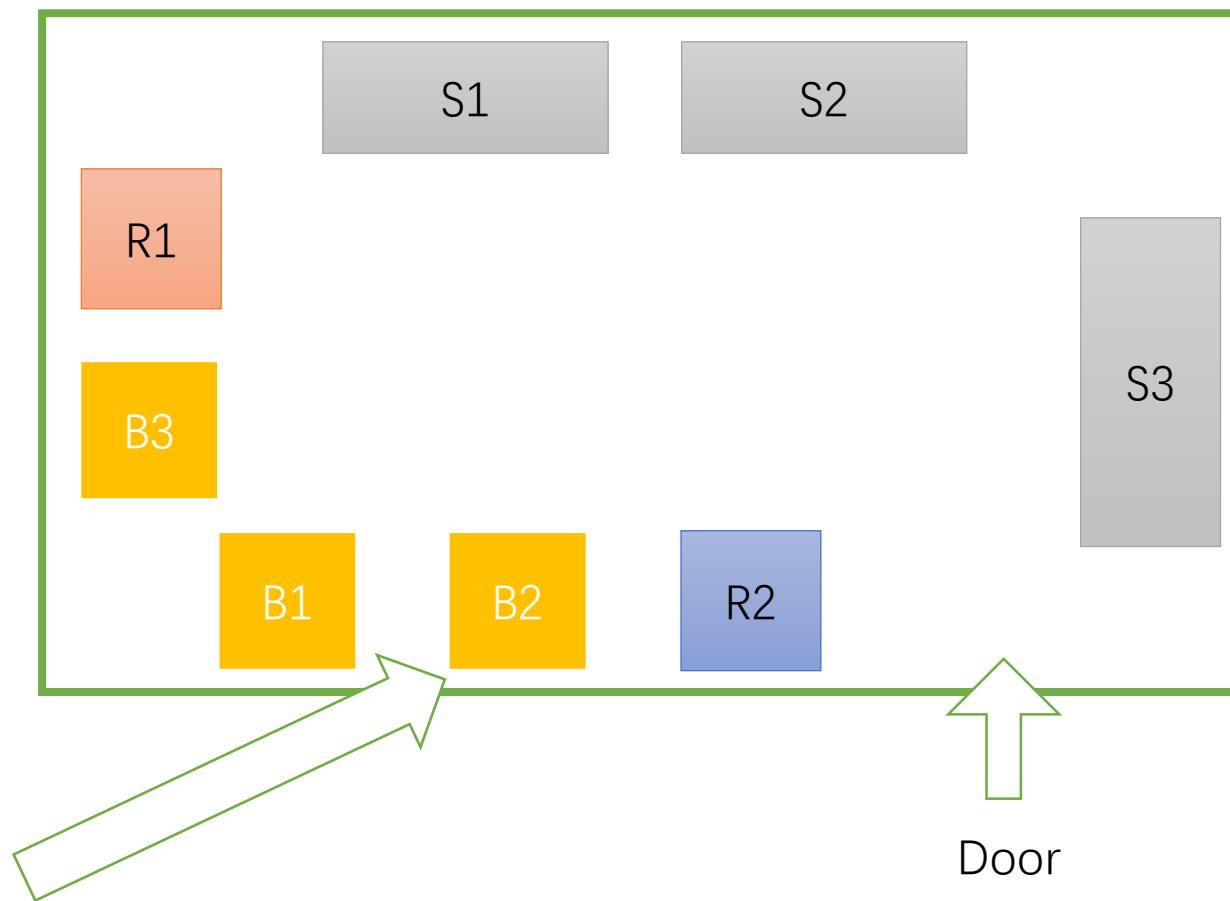


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- 2. chemical use in our lab

- Nonflammable/Nontoxic:
  - Halide
  - Oxide/Hydroxide
  - Oxidants (Nitrate, peroxide, perchlorate, persulfate)
  - Sulfate, phosphate, carbonate
  - Sulfide, carbide, phosphide
  - Organic solid
  - Polymer solid
  - Commercial product for battery.
- Flammable:
  - Liquid: Alcohol, nitrile, carbonate
  - Liquid: Alkaline, ether
  - Solid: metal powder
- Toxic:



Liquid: Alcohol, nitrile, carbonate

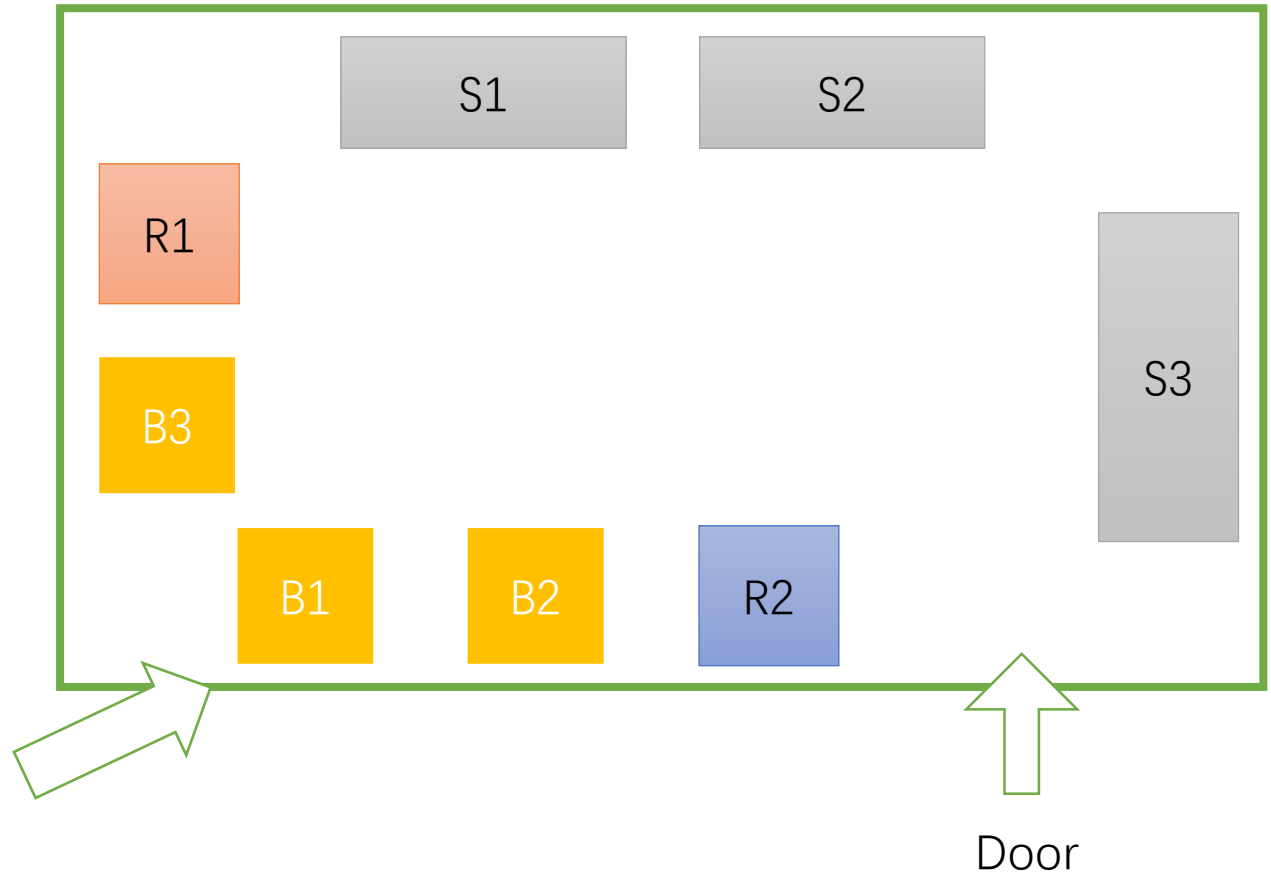






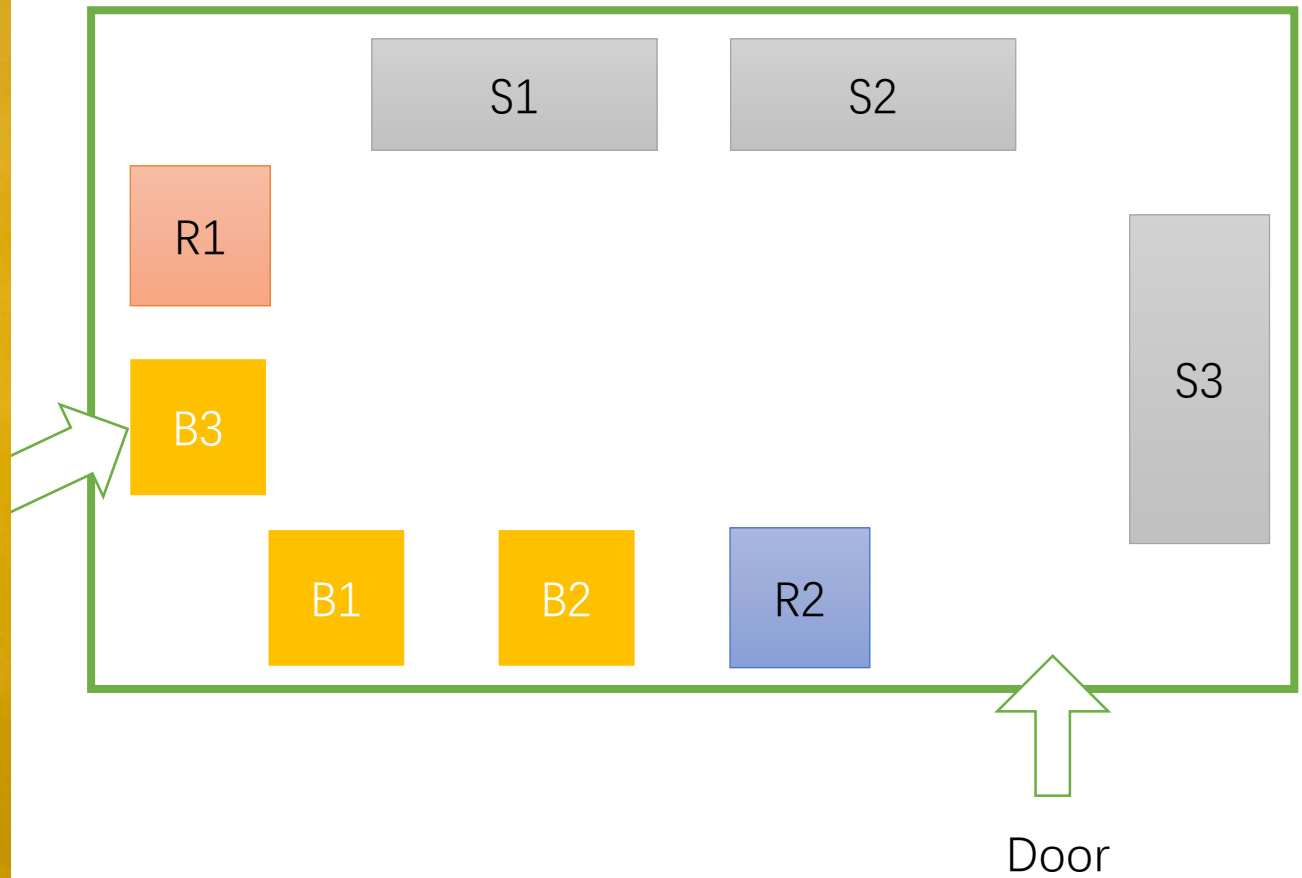


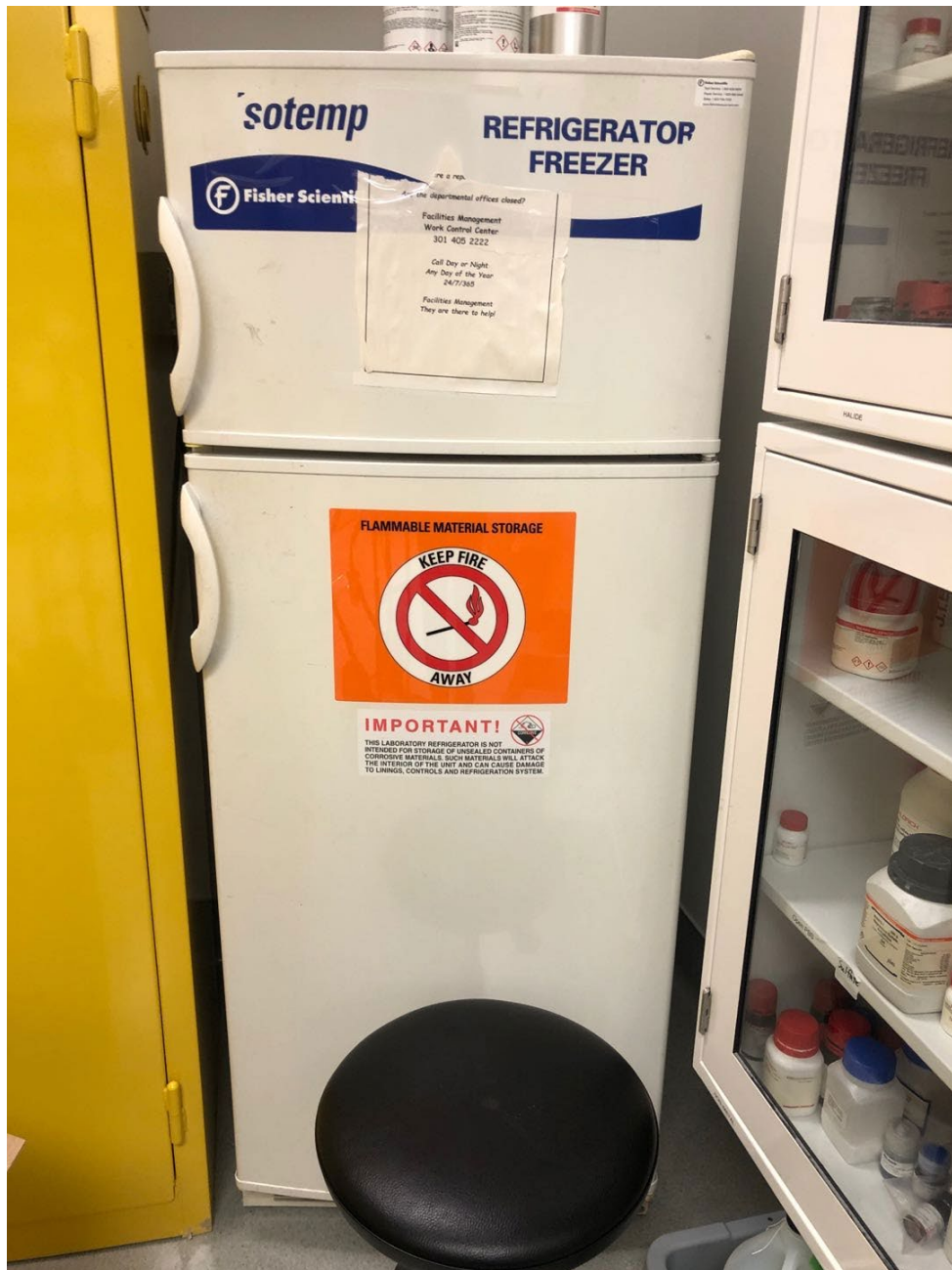
Liquid: Alkaline, ether



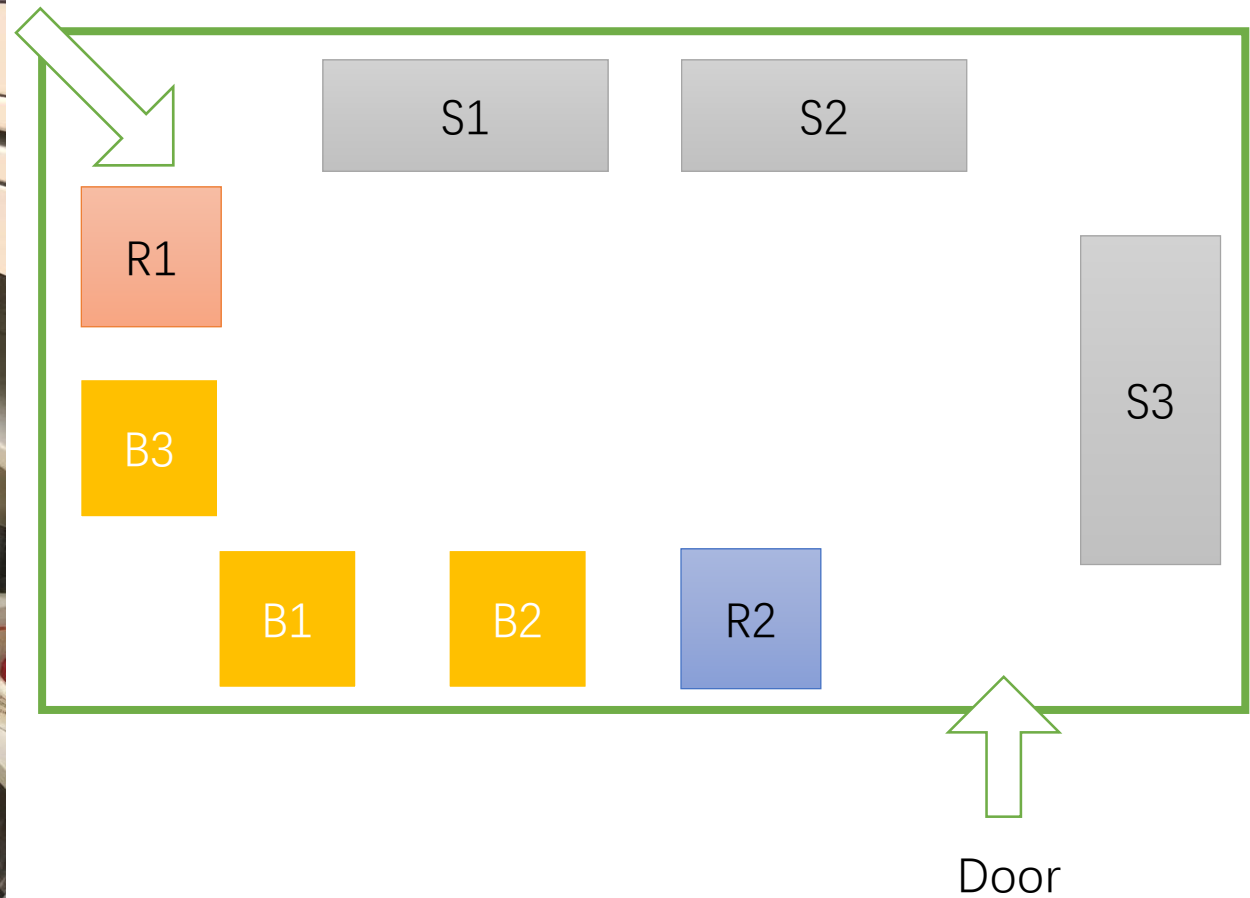


Solid: metal power

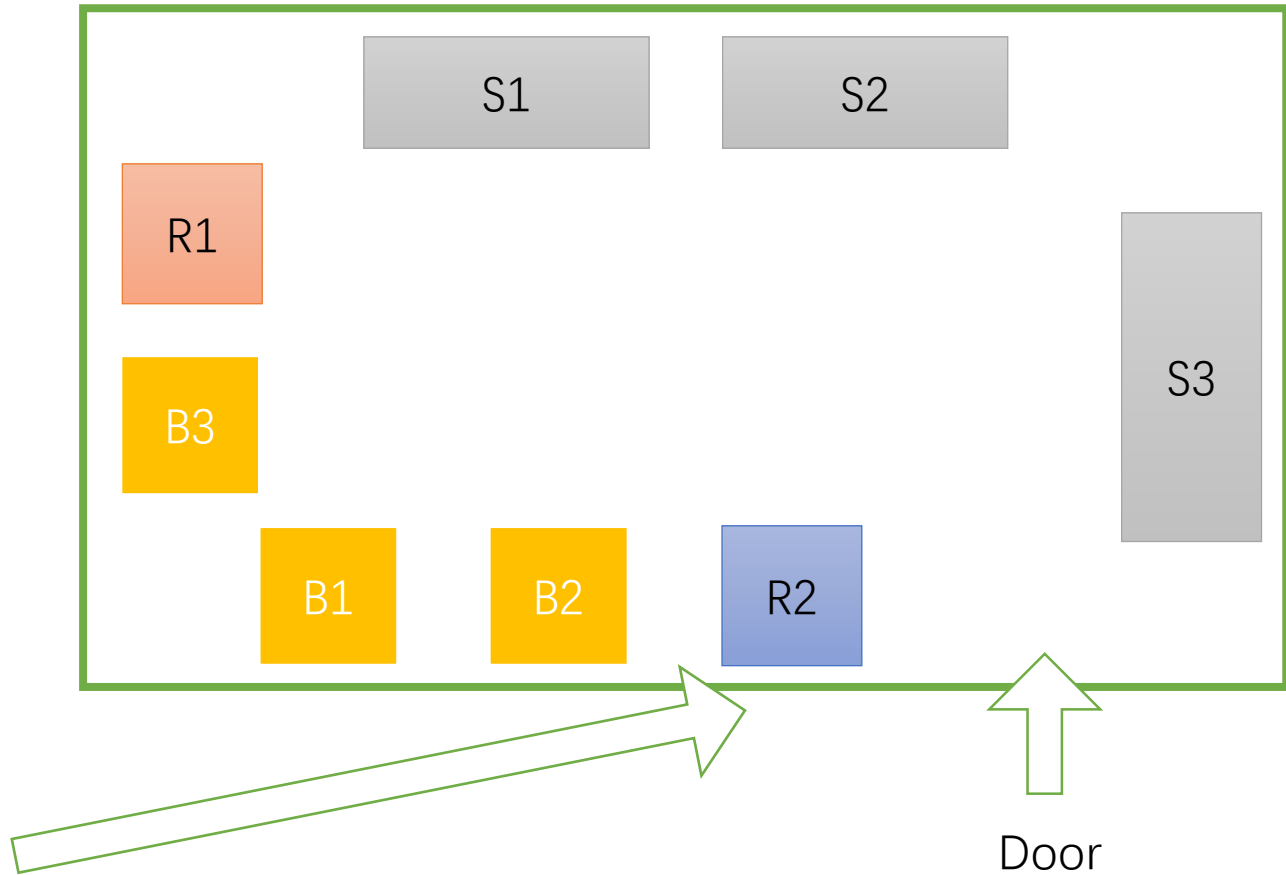
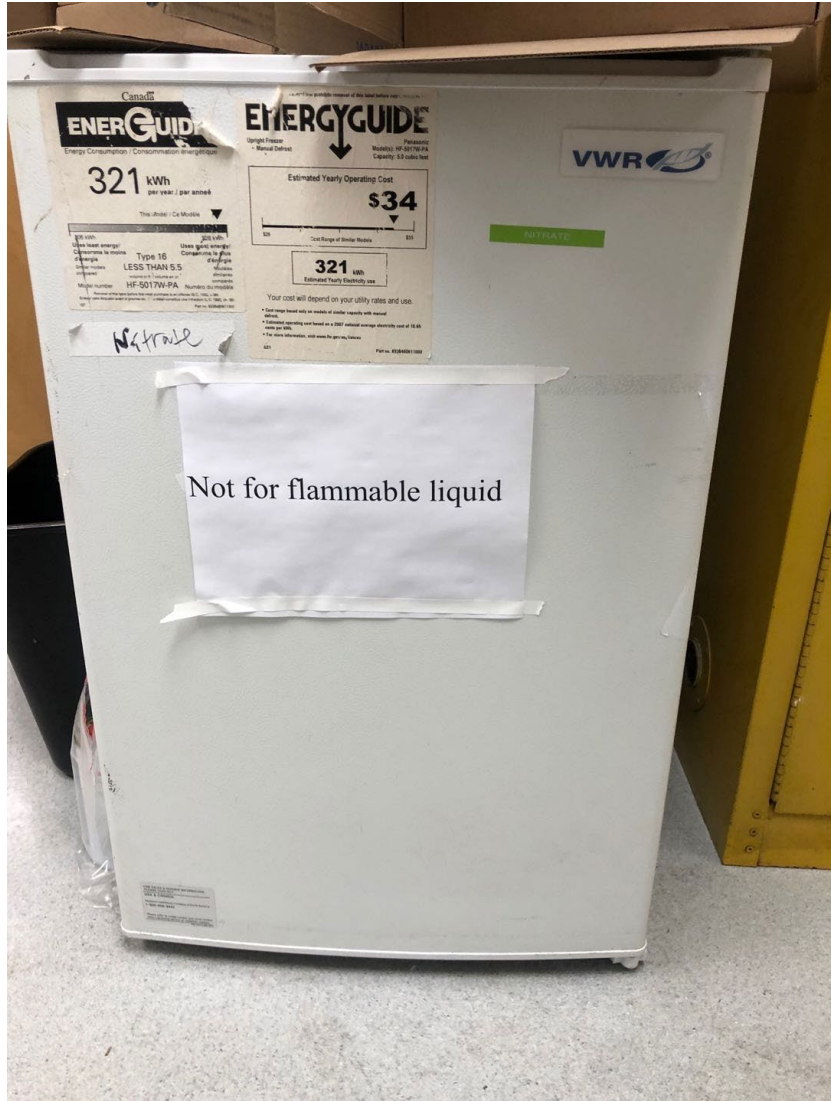




## Flammable Liquid



# Oxidants (Nitrate, perangate, perclorirate, persulfate)



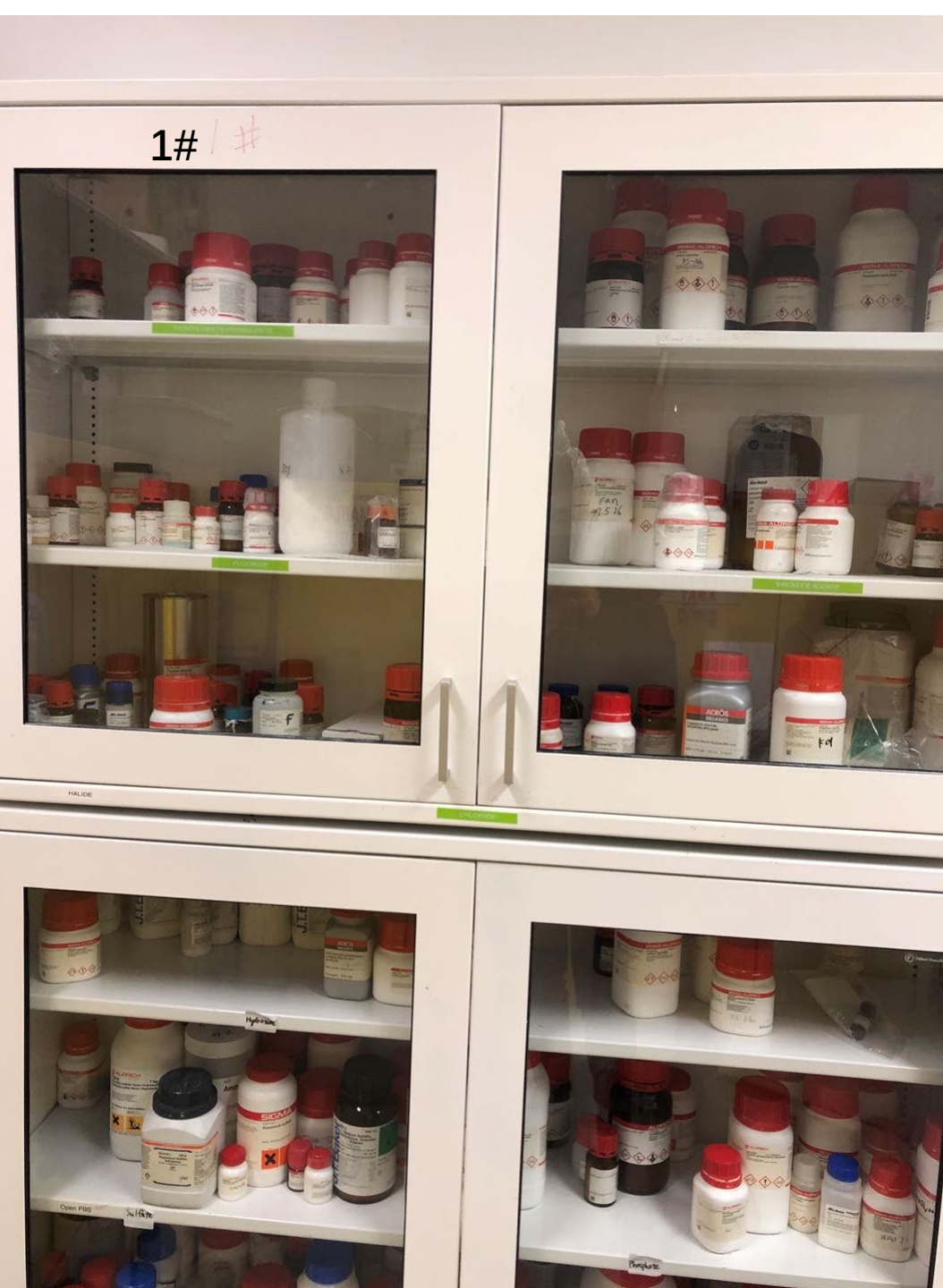


H<sub>2</sub>O<sub>2</sub>

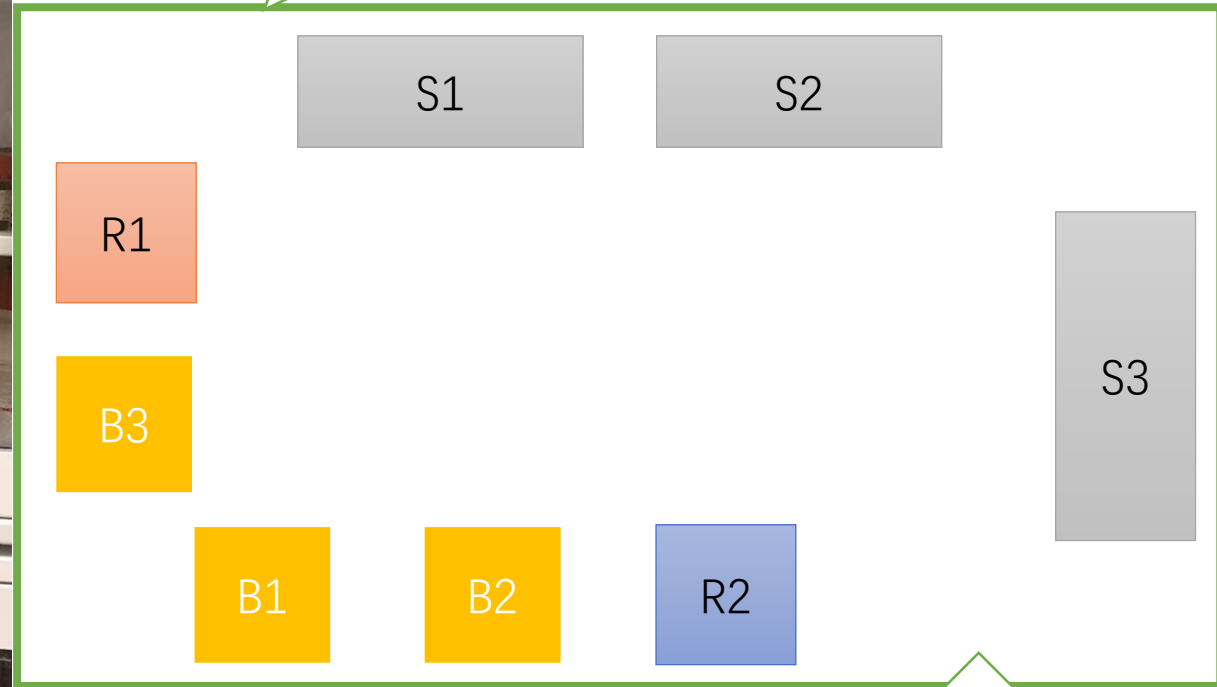


Ethanol





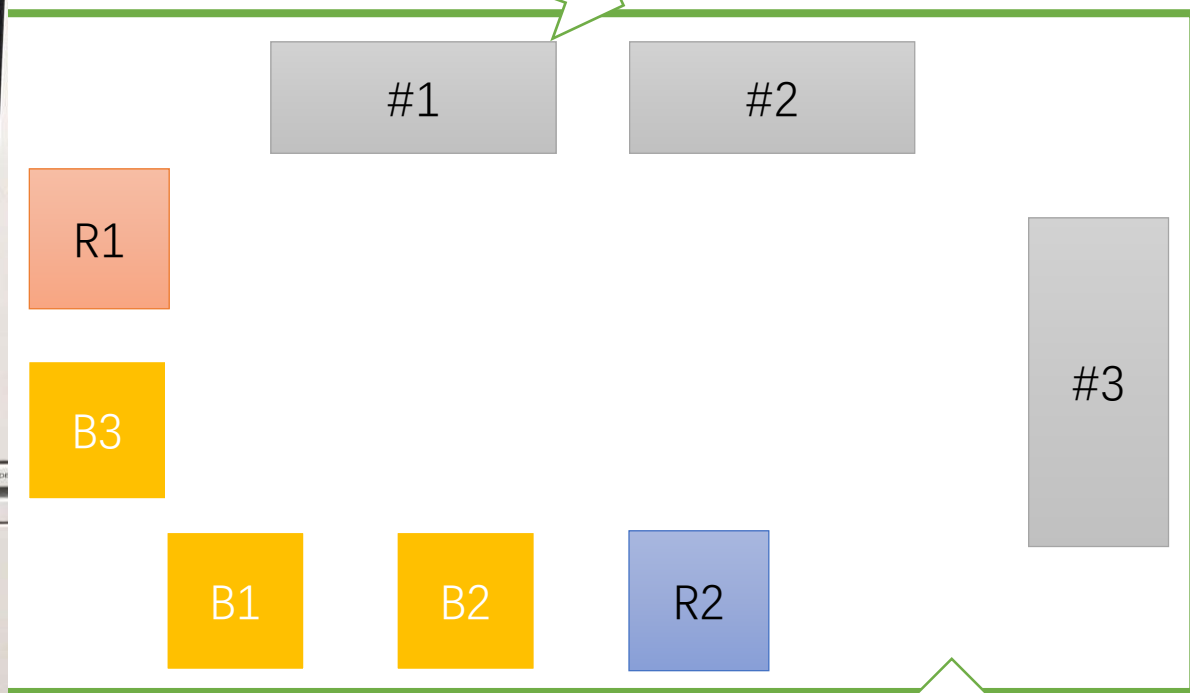
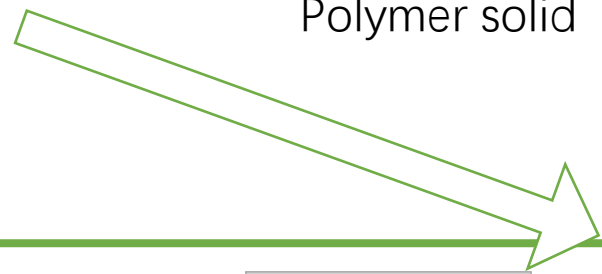
Halide  
Oxide/Hydroxide  
Sulfate, phosphate, carbonate



Door



Organic solid  
Polymer solid

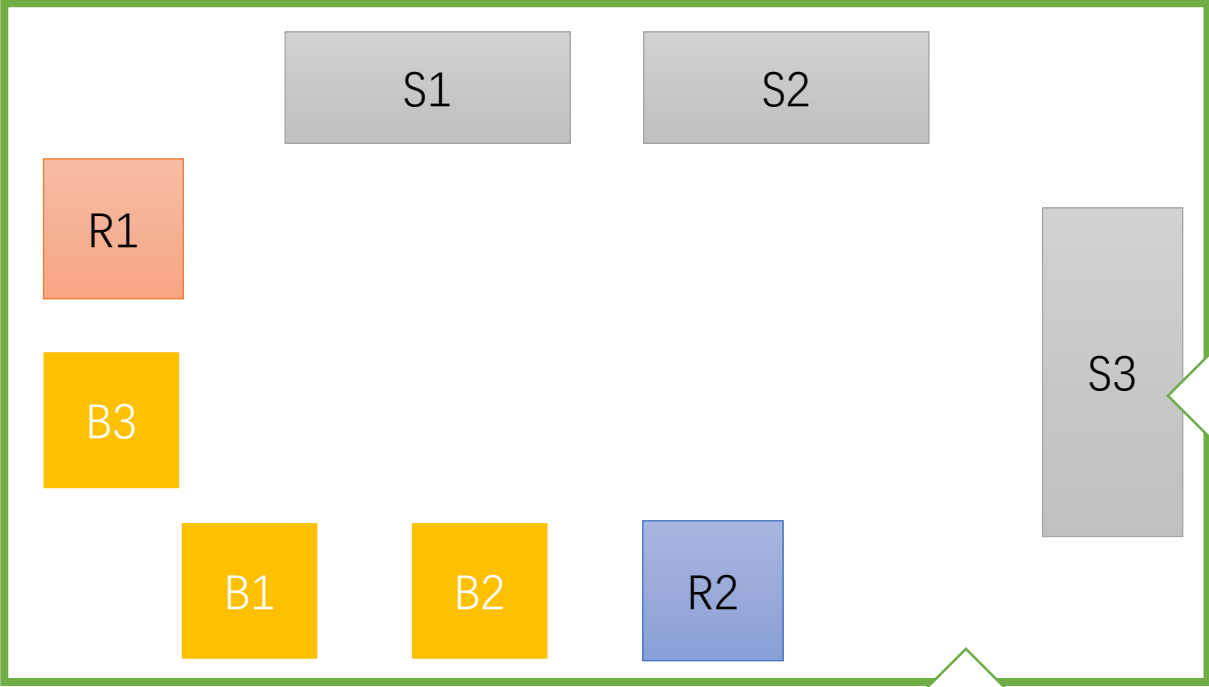


Door



Commercial product for battery.

Sulfide, carbide, phosphide



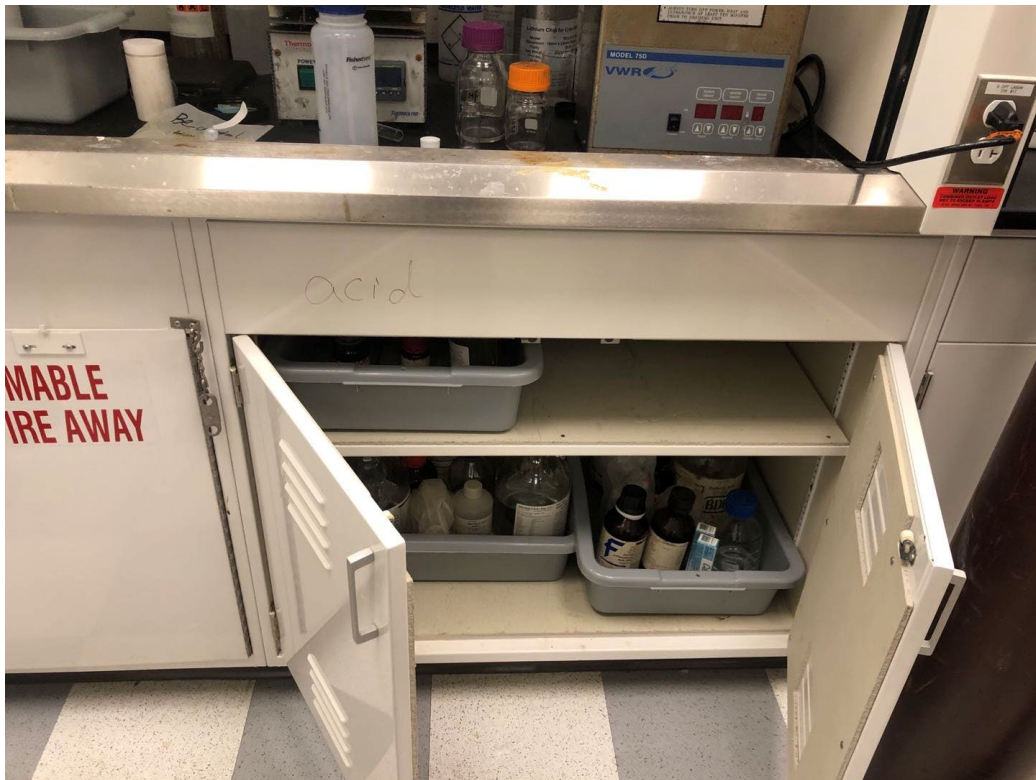
Door



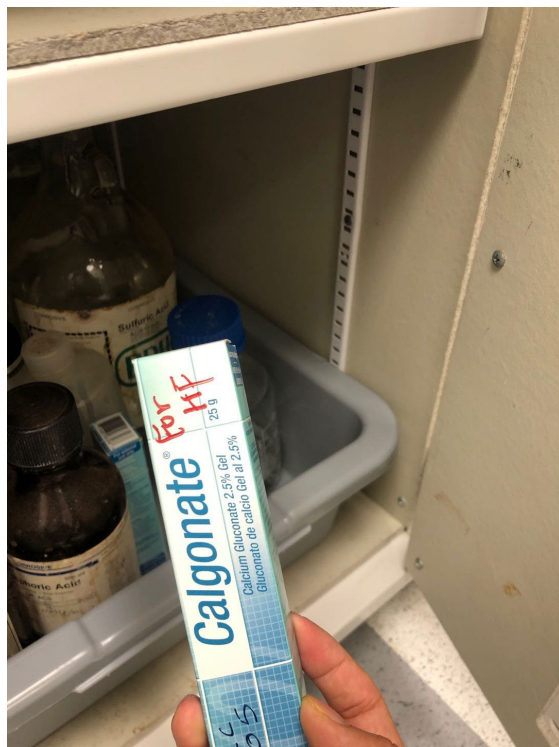
Toxic.

- Alkaline and base

Below fume hood 4,5



- Potential Risk and self-protection:



Calgonate



Eyewash



fire extinguisher

# Chemical Waste

- Solid waste:
- Liquid waste: Do not put in fume hood.
- 

Aqueous Acid

Aqueous Base/Neutral

Organic

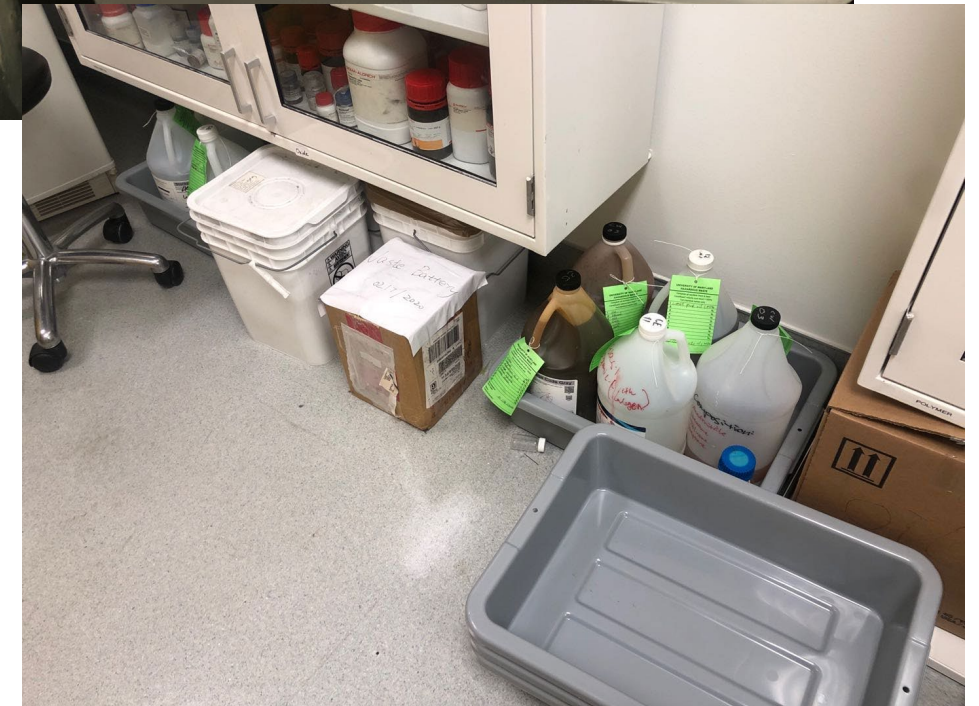
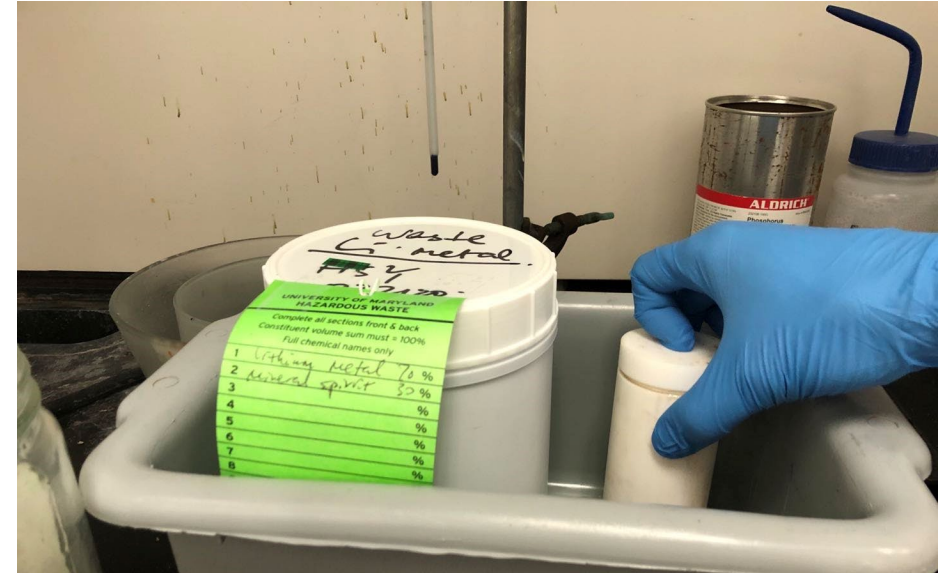
Organic (halogen)

Pump Oil

Add when needed

Li-metal:

1. Cover
2. Label using green paper
3. Secondary container



- 
- 
- 3. lab cleaning arrangement

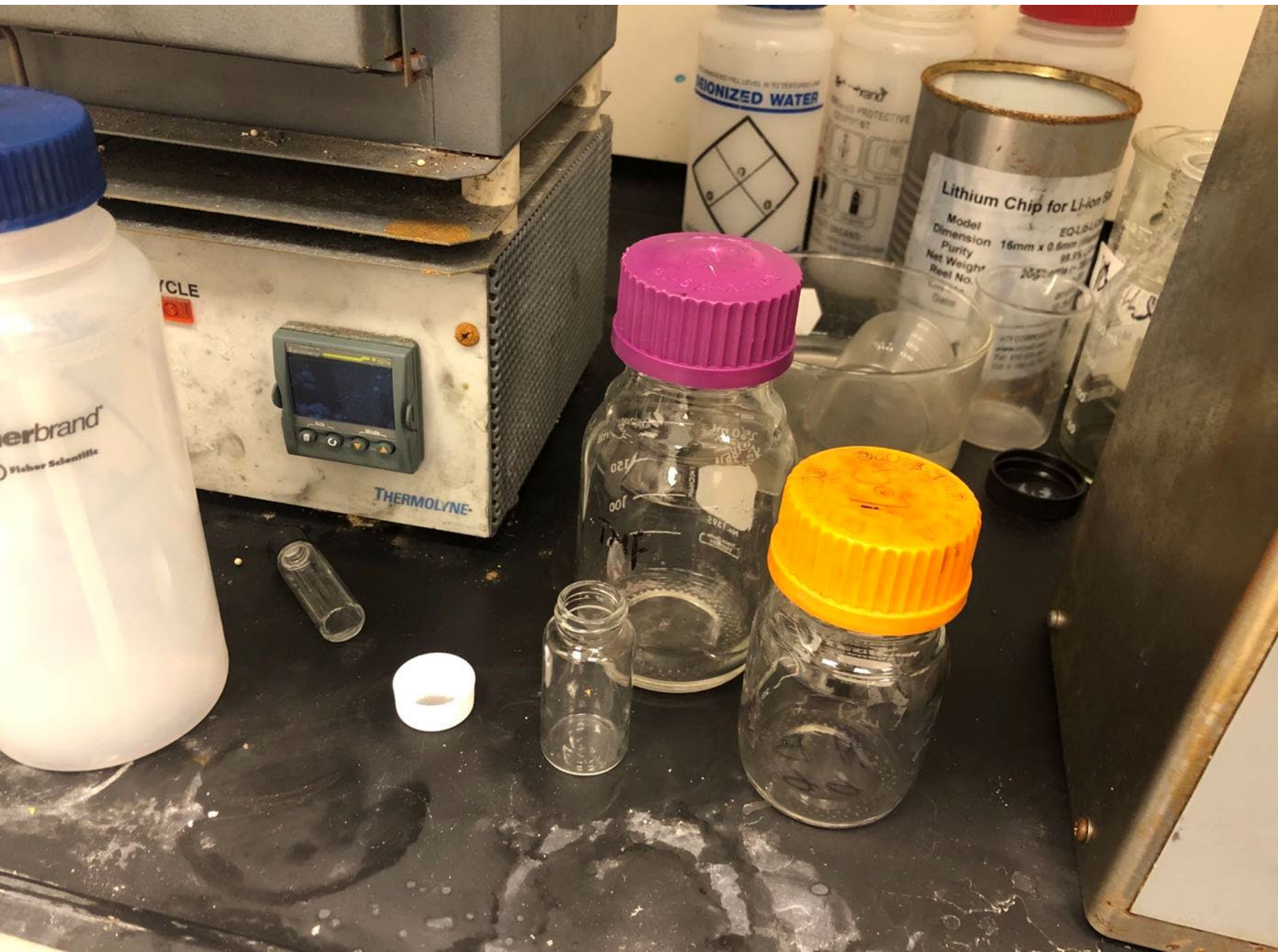
- Personal Tasks:
  - 1. Learn lab safety rule
  - 2. Check safety for personal items.
  - 3. Familiar with chemical classification and deal with chemical waste
  
- Group Tasks:
  - 1. Get training of chemical classification in our lab.
  - 2. Lab Cleaning after this meeting.
  - 3. Everyone take responsibility of specific area in lab. Establish rules for each area.
  - 4. Self-inspection every day. Punish anyone against the rule.

Name	Area	Name	Area
Sufu Liu	Fume hood #1	Zeyi Wang	Chemical Carbinet#1,2
Xinzi He	Fume hood #2	Xiangjun Pu	Chemical Carbinet#3
Xiyue Zhang	Fume hood #3	Xiao Ji	Solid State Glovebox
Tao Deng	Fume hood #4	Bo Nan	Liquid Glovebox
Long Chen	Fume hood #5	Jijian Xu	Cell Assembly Glovebox
Ziliang Chen	Fume hood #6	Longsheng Cao	3237F
Singyuk Hou	Refrigerator	Hongli Wan	Channel 1-2
Jiale Xia	Flammable Box1	Jiaxun Zhang	Channel3
Weiran Zhang	Flammable Box2	Chongyin Yang	Channel 4
Panxing Bai	Flammable Box3	Ruimin Sun	Channel 5-6





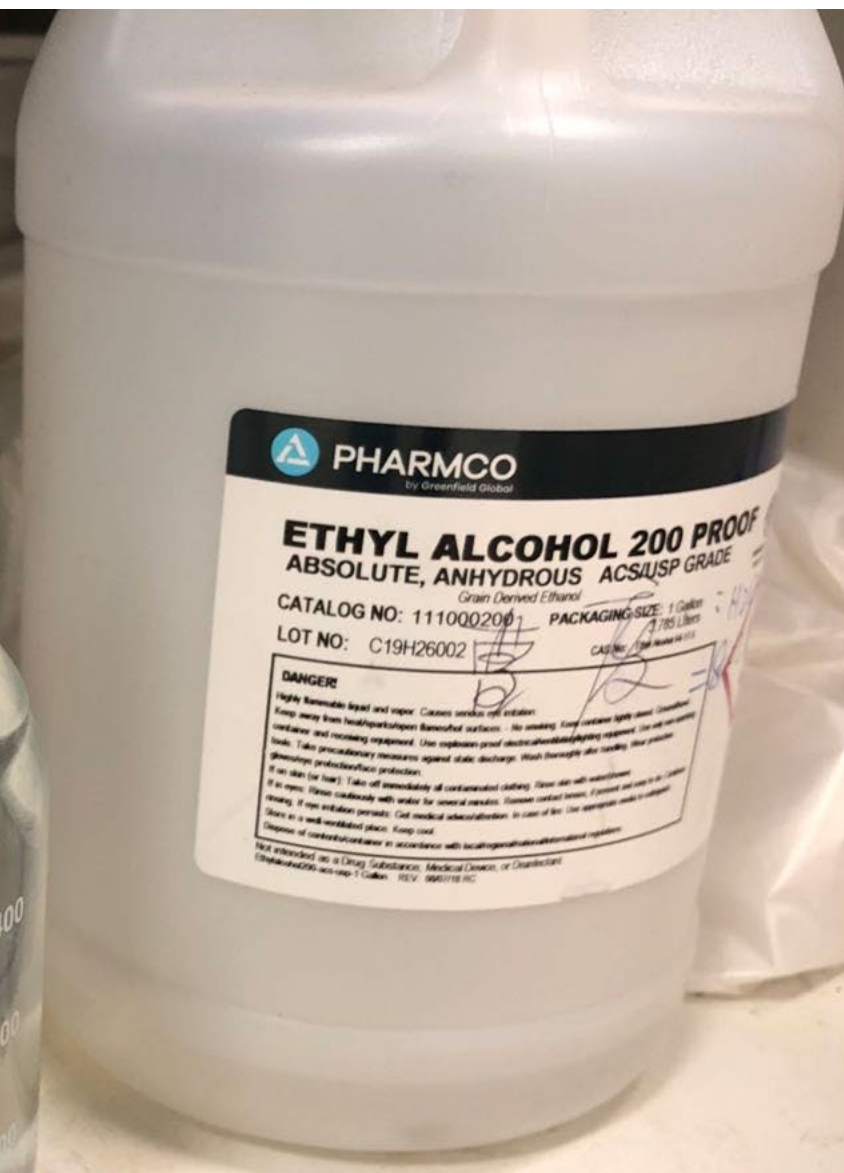












**PHARMCO**  
by Greenfield Global

**ETHYL ALCOHOL 200 PROOF**  
**ABSOLUTE, ANHYDROUS ACS/USP GRADE**  
*Grain Derived Ethanol*

CATALOG NO: 1110Q0200

PACKAGING SIZE: 1 Gallon  
3.785 Liters

LOT NO: C19H26002

**DANGER**

Highly flammable liquid and vapor. Causes serious eye irritation. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Condition container and receiving equipment. Use explosion proof electrical/electronic/electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection. If on skin (or hair): Take off immediately all contaminated clothing. Flush skin with water/shower. If in eyes: Flush continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue flushing. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media to extinguish. Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations.

Not intended for use as a Drug Substance, Medical Device, or Diagnostic.  
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