

Chemical Storage



PROPER STORAGE OF CHEMICALS WILL PROTECT FLAMMABLE MATERIALS FROM **IGNITION** SOURCES; REDUCE POTENTIAL EXPOSURE TO **TOXIC** SUBSTANCES; ENSURE SEGREGATION OF INCOMPATIBLE CHEMICALS AND PREVENT ACCIDENTAL MIXING DUE TO SPILLAGE OR HUMAN ERROR. LISTED BELOW SOME OF THE KEY SAFETY CONSIDERATIONS ON CHEMICAL STORAGE IN OUR LABORATORIES:

SAFE PRACTICES

A. STORAGE QUANTITY

- Avoid storing beyond Maximum Allowable Quantity (MAQ) for chemicals storage
- Comply with license requirements
- Reduce fire load especially for flammable materials in the lab unit
- No storing of excessive flammables on the open lab bench (return to safety cabinet after use)



B. COMPATIBILITY

- Segregate chemicals into inorganics and organics
- Store them according to their respective compatibility and GHS hazard class. For example, flammables, oxidizers, reactive substances, corrosives, or toxics.
- Within the same compatible group, arranged chemicals alphabetically for easy retrieval.

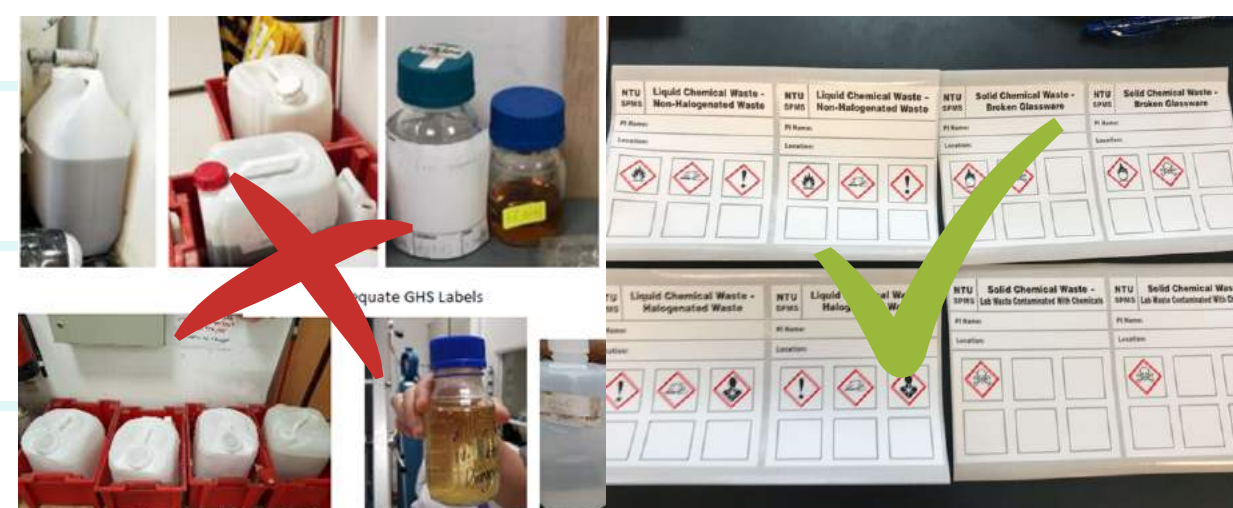
**Read up the chemical SDS to check on the compatibility storage*

C. CHEMICAL CONTAINERS

- Use clean (non-contaminated) containers when need to dispense chemical from an original container or for waste collection
- Check container for material compatibility, e.g. Do not use glass container to contain HF

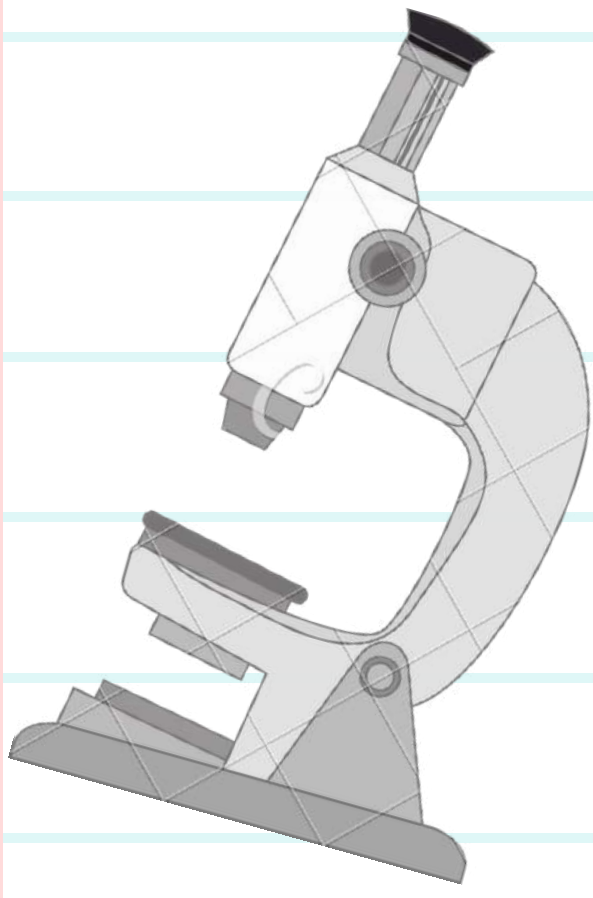


D. LABELLING

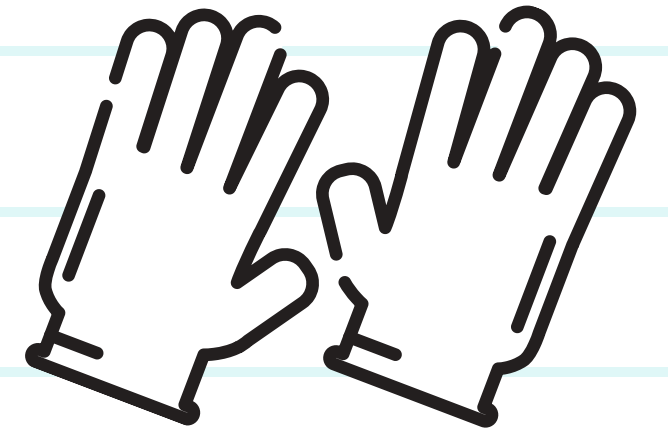


Examples of substandard labelling (no GHS or faded GHS labels)

- Label all containers with GHS labels, include waste carboys



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PHYSICAL STORAGE

1. STORE CHEMICALS IN PROPER CABINETS

- Label the cabinets to indicate the hazardous nature of their contents (e.g., “flammable” or “corrosive”) together with the corresponding GHS hazard pictograms.
- Note: for safety cabinets, storing flammables liquids to put up with **Dangerous Good (DG)** warning sign as required by SCDF.

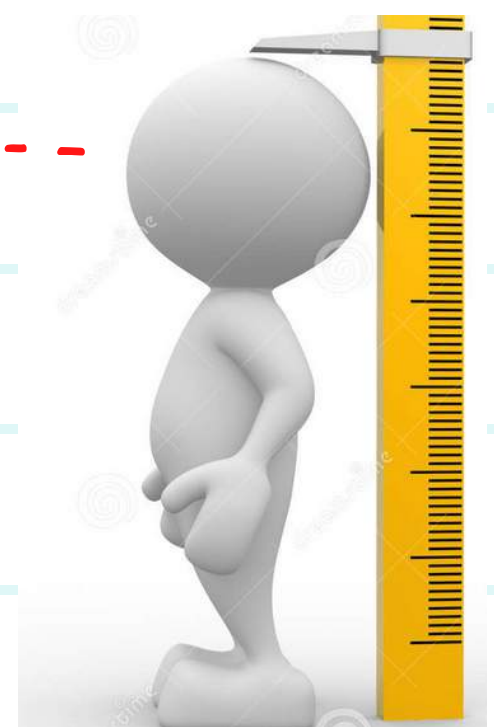


2. DO NOT STORE CHEMICALS ON THE FLOOR

- Exits, passageways, areas under tables and laboratory benches to be kept free from chemical containers storage, especially glass containers. If placed on the floor, the chemical containers risk being walked into, knocked over or hit with a chair or stool.

3. DO NOT STORE HAZARDOUS CHEMICALS ABOVE EYE LEVEL

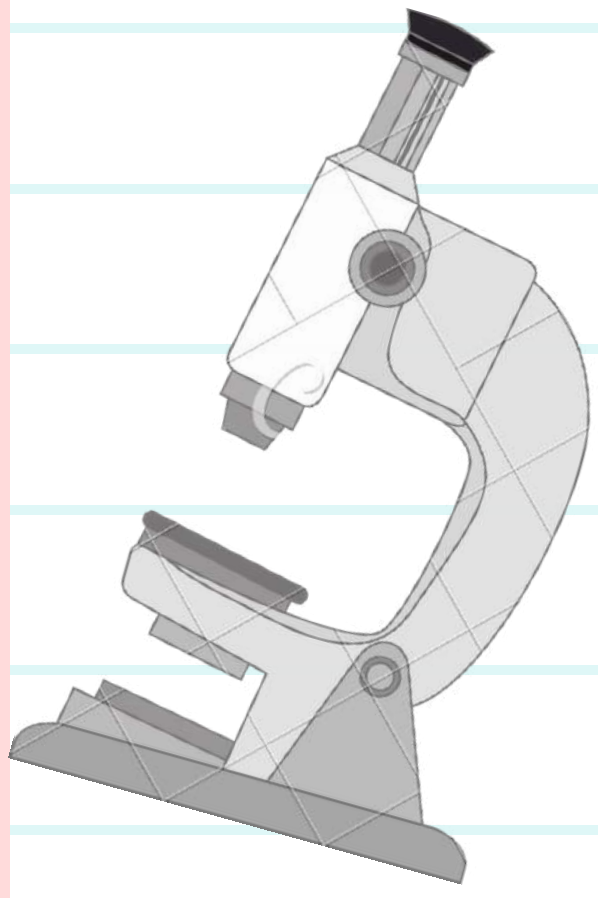
- If a chemical glass container falls and/ or breaks, its contents can splash on one’s face and upper body. Storing chemicals below eye level will protect eyes and faces from chemical spills from above.



4. STORE CHEMICALS AWAY FROM SOURCES OF HEAT

- Storing chemicals near heat sources (e.g., burners, ovens and hot air gun) will inevitably cause liquid vaporization rates to increase. This will cause pressure build up in the chemical container, possibly leading to container rupture.
- Storing flammables beside heat source can easily cause an ignition leading to a laboratory fire.





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PHYSICAL STORAGE

5. AVOID STACKING OF CHEMICALS BOTTLES

- **Do not** stack or place chemicals at the edge of a fridge as it can lead to potential spill.



6. COMPRESSED GAS CYLINDERS

- **Secure** gas cylinders in an upright position and store in a cool, well ventilated area.
- Keep gas cylinders away from heat sources and incompatible gases.
- Comply with regulatory requirements for storing & using flammable or toxic gases.

7. SPECIAL CHEMICALS

Pay extra attention to reactive chemicals to ascertain safe storage conditions. These include:

- Water reactive chemicals
- Air reactive chemicals
- Peroxide-forming chemicals

