

Safe Use of Flammable and Combustible Liquids in Labs

Flammable and combustible liquids are commonly used in laboratories. Precautions must be taken in order to help ensure that the flammable and combustible liquids are handled, used and stored in a safe manner that protects the user and the laboratory.



As we have covered in past issues of *"From the Ground Up"*, the California Fire Code regulates limits on the amount of flammable and combustible liquids that can be stored in a building. Most of the Stanford laboratories utilize the fire sprinkler and at times the storage cabinet factors allowed by the fire code in order to increase the maximum allowable quantity (MAQ) for the designated control area. For this reason, it is imperative that quantities of flammable and combustible liquids in use be kept to a minimum while additional quantities are stored in an approved flammable liquids cabinet. This will help, in the event of a fire, to limit the spread and intensity of the fire.

The following safety guidelines will help to ensure that flammable and combustible liquids are used in a safe manner.

1. Personal protective equipment (PPE) should always be used when working with flammable and combustible liquids. PPE should include at a minimum a flame resistant lab coat, safety glasses and appropriate gloves.
2. Flammable and combustible liquids should only be stored in approved flammable liquid cabinets. Flammable and combustible liquids shall not be stored in acid cabinets or in cabinets under sinks.
3. Flammable and combustible liquids shall be stored in accordance with the Stanford Compatible Storage Group Guide. Glacial acetic acid should be stored in a flammable liquids cabinet.
4. If the flammable and combustible liquids are required to be stored in a refrigerator, they must be only stored in refrigerators listed and approved for the storage of flammable liquids. The refrigerator must be labeled with "Flammable Liquids".
5. All containers containing flammable and combustible liquids shall be properly labeled with the chemical name and the hazard class of the liquid.



6. When not stored in an approved cabinet, it is best to store bottles of flammable liquids in a tray or pan in order to catch any spills.
7. Limit the amount of flammable and combustible liquids in use on benchtops and fume hoods to only the amount necessary for the work being conducted.
8. When it is anticipated that the work being conducted including dispensing flammable and combustible liquids will generate flammable vapors, it should be done in a fume hood so that the vapors will be safely exhausted.
9. Never heat flammable liquids with an open flame. Use an approved water bath, oil bath, heating mantle, hot air bath, etc.
10. Whenever working with flammable or combustible liquids, a fire extinguisher shall always be readily available for use.



If you need any additional information regarding flammable liquids, please contact me.

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Working together, we can keep Stanford University fire safe.

I am always looking for ideas related to fire and life safety that could be covered in future issues of "*From the Ground Up*". Please let me know if you have any ideas.