



UCSC Laboratory Safety Services
Providing a little slug of information on

Laboratory Refrigerators and Freezers

The Environmental Health & Safety (EH&S) office and Campus Fire department require the use of lab safe or flammable storage refrigerators when refrigerating flammable or explosive materials. Unlike regular household units, lab safe refrigerators have no interior arc or spark points that could provide a source of ignition in a flammable or explosive atmosphere.

An incident at another UC campus may clarify the importance of lab safe refrigerators. Less than 40 mL of ether was placed in a household type refrigerator during an experiment. Several hours later the ether detonated, blowing the door off the refrigerator and causing severe damage to the laboratory. Fortunately, there was no one in the lab at the time of explosion. This accident illustrates the extreme force generated by an explosion of a very small quantity of volatile material in a closed system.

The refrigerator involved in this accident had been labeled to indicate it *should not* be used for storage of flammables. The warning was not heeded. EH&S would like to remind those who have refrigerators and/or freezers in their labs to follow these guidelines.

- 1) Use only lab safe or flammable storage refrigerators and freezers for storage of flammable or explosive materials. (Note: Ethanol/water solutions containing more than 24% ethanol are considered flammable.)
- 2) Household type refrigerators and freezers are permitted in laboratories only for storage of food, drink, aqueous solutions, or other nonflammable and nonexplosive materials.
- 3) Purchase – UCSC Policy & Procedures require EH&S approval before household type refrigerators and freezers can be purchased and used in the laboratory.
- 4) Disposal – Contact your Division's Facilities Coordinator for procedures and assistance with disposal of unwanted refrigerators and freezers.

If you have questions about the appropriate use of refrigerators or freezers in laboratories, please call EH&S at 9-2553.

