STANDARD OPERATING PROCEDURE

Winter Lab, Chemistry Department ISU  Arthur Winter, Supervisor
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Process: FRIDGE AND FREEZER USAGE

Minimum PPD’s:
1. Safety glasses
2. rubber gloves

Objectives: The reader will understand the proper usage of the refrigerator/freezer to store chemicals.

Training Schedule:
1. Initial training - upon joining group
2. Annual retraining

WARNINGS:
* The refrigerators are NOT to be used for food storage!
* Improperly closed or broken containers could pose a respiratory threat as their vapors concentrate in the enclosure.

I. OPERATING PROCEDURE

A. When to Store Chemicals in the Refrigerators
1. When required by the MSDS (Material Safety Data Sheet) for that specific chemical.
2. When a laboratory prepared chemical might undergo thermal decomposition or other undesired reaction.

B. When to Store Chemicals in the Freezer
Chemicals that rapidly degrade at room temperature or require very low temperatures to remain stable for any given period of time may be stored in the deep freeze.
C. General Procedures

1. Proper Labeling of Stored Chemicals
All chemicals stored in the refrigerators and deep freeze should be labeled in the following manner:

   a. State the chemical name of the substance exactly as it appears on the container. Structures or formulas alone are not sufficient. If the name is unknown (for example, a photolysis mixture) state the reactants and what was done to them in general terms. For example, “A + B, photolyzed at 300 nm.”

   b. If the compound is a mixture, properly list all components and indicate their approximate percentages.

   c. Include any hazards associated with the chemical (i.e., carcinogenic, flammable, corrosive, etc.). Store carcinogens, suspected carcinogens, and stench compounds in a secondary container. A jar with a lid is most appropriate for stench compounds, while either a bucket or jar is ok for carcinogens. This requirement for secondary containers for stench compounds is ABSOLUTELY SERIOUS.

   d. Compounds or reaction mixtures prepared in the lab must have a proper notebook reference that includes your initials and notebook number and page. Also include a date.

   e. If the container is too small for labeling, place it into a beaker, try not to waste space by using an excessively large beaker, and label the beaker appropriately. Try to put a notebook reference on the container regardless of its size.

   g. To reduce odors, use Parafilm to seal all containers.

2. Spills
Spills should be immediately cleaned up following the appropriate procedure (see the Ames Lab Safety manual and the MSDS for the compound(s)). Contact the supervisor after all spills.
3. Development of Frost in the Freezer
Leaving the door to the refrigerators open for extended periods of time promotes the development of frost in their freezer sections. Refrigerator/Deep Freeze doors should be closed as soon as possible, especially in the Summer, to prevent frosting.

II. MAINTENANCE

A. A weekly inspection of the refrigerators will be performed by the supervisor. Any mislabeled containers will be brought to the attention of the appropriate group member. Any unlabeled chemicals will be disposed of properly.

B. The need for defrosting will be assessed by the supervisor and will involve removal of the contents to another refrigerator or cooler and the following of defrosting procedures as stated by the manufacturer of the equipment.

C. The reduction of odors will be performed by including an open pan or glass container (temperature bath containers work well) of sodium bicarbonate in each refrigerator/deep freeze. The contents of each container shall be disposed of properly on at least a monthly basis and replaced with fresh sodium bicarbonate.

Approved: ________________________________ Date: __________________________
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