



Introduction

Equipment and experiments that run unattended during the day and overnight have the potential of causing significant problems and harm to University personnel, facilities, and equipment. Although we discourage this practice as much as possible, particularly when highly hazardous substances (i.e. Hydrofluoric acid, piranha solution, etc.) are involved, we do recognize there is a need to run these experiments at certain times. The following Safety Instruction should be used as guidance when carrying out such experiments.

Definition

An unattended reaction is any reaction (i.e. chemical, biological, biochemical) that is initiated by a researcher and then left unattended for a period of time. This includes leaving the lab for a lunch break, attending class, restroom breaks, etc. A reaction may be left unattended for one or multiple hours, overnight or for multiple days. Examples of unattended reactions include organic and inorganic syntheses, DNA extractions, as well as automated processes.

Hazard Description

Multiple hazards can be presented by an unattended reaction, depending on the starting materials used, reaction conditions and the reactivity of any potential products. Without the person who initiated the reaction present, other laboratory workers cannot know the hazards of the reaction. If an unattended reaction is not monitored, certain methods and reaction conditions (e.g. heating, grinding, stirring, cooling, etc.) may pose a greater risk to surrounding laboratory workers, as well as laboratory equipment, especially if there is an emergency in the lab. In that case, first responders need to be aware of the reaction and any possible hazards associated with it.

Unattended Reaction Set-up

Any unattended reactions involving hazardous chemicals or vessels under constant pressure should be set up within a certified chemical fume hood or other approved ventilated enclosure (e.g. Biosafety Cabinet, glove box, etc.). The sash of the chemical fume hood must be adjusted to its lowest possible position and the reaction apparatus must be moved as far back in the chemical fume hood (or other ventilated enclosure) as is reasonable when the reaction is unattended. The area immediately surrounding the unattended reaction should be free of clutter.

Refrain from heating a reaction while it is left unattended whenever possible. If heating is necessary, the temperature should be monitored and controlled by a thermometer or other thermal sensing device. The built-in thermometer of a hot plate is not appropriate for this purpose. Oil baths that must be left unattended should be fitted with a thermal sensing device that turns off the electric power if the bath overheats and exceeds a set limit. Remove combustible or flammable substances from the area when the reaction is heated.

Requirements

Laboratory workers must complete an [Overnight/Unattended Reaction Posting](#) (available on the EHS website, attached to this Safety Instruction, and on the Chemical Labeling Station found in most labs) for every unattended reaction. The completed form must be placed in a visible location in front of the reaction apparatus (e.g. on the chemical fume hood sash) before the reaction is left unattended. It is vital that the person initiating the reaction leaves an accessible phone number on this form so first responders and agencies may have a point of contact in case of an emergency involving the unattended reaction. If a laboratory worker plans on performing many different unattended reactions throughout the year, he/she may want to consider using a laminated Unattended Reaction Form (found on the Chemical Labeling Station) and using a dry erase marker to fill out the form for each reaction, or they may want to make template ones.

Contact EHS:
safety@oregonstate.edu
oregonstate.edu/ehs/
541 • 737 • 2273

Example

<u>Unattended Lab Reaction</u>	
This notice must be posted on or near each reaction left unattended in a laboratory.	
Responsible Person: <u>Amy Carter</u> Supervisor/PI: <u>Jenette Paul</u>	
Contact number: <u>541-737-2273</u>	
Description of reaction or conditions. <i>Partial dissolution of rock in a solution of 2% HF + 2% HNO₃</i>	List hazards present (toxic, flammable, corrosive, etc.) and use full names for chemicals, not abbreviations or chemical formulas. <i>Up to 2% Hydrofluoric acid Up to 2% Nitric acid</i> <u>HAZARDS</u> <i>- May be corrosive to metals - Causes severe skin burns and eye damage - May cause respiratory irritation - Fatal if swallowed, in contact with skin or if inhaled</i>

Unattended Reaction Monitoring

Experimental protocols for unattended reactions must include periodic monitoring of the reaction throughout the reaction process. This is to ensure the reaction is proceeding as planned and further hazards are not being created (e.g. flammable solvents boiling over when heated or catching on fire, corrosive liquids corroding the septum, etc.). If a reaction is being performed over multiple days (such as running a drying oven), it must be monitored at least once a day.

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Overnight or Unattended Lab Reaction

This notice must be posted on or near each reaction left unattended in a laboratory.

Responsible Person: _____ Supervisor/PI: _____

Contact number: _____

Description of reaction or conditions.

List hazards present (toxic, flammable, corrosive, etc.) and use full names for chemicals, not abbreviations or chemical formulas.

Overnight or Unattended Lab Reaction

This notice must be posted on or near each reaction left unattended in a laboratory.

Responsible Person: _____ Supervisor/PI: _____

Contact number: _____

Description of reaction or conditions.

List hazards present (toxic, flammable, corrosive, etc.) and use full names for chemicals, not abbreviations or chemical formulas.