Standard Operating Procedures
for
Fume Hoods

Dr. Ragauskas group
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Types

**Vertical Sash Fume Hood** - a single vertical rising sash with a maximum face opening about 30 inches high.

**Walk-In Fume Hood** - a hood sitting directly on the floor, equipped with two vertical rising sashes and each is capable of closing half the face opening.
Functions

- Control exposure of the hood user to hazardous or odorous chemicals and prevent their release into the laboratory.

- Limit the effects of a spill by partially enclosing the work area and drawing air into the enclosure.
The natural gas conduit should be shut off!
If this valve releases any gas when opened, Jerry Nunn must be notified to investigate and shut off.
Water nozzle

- Water valve is connect to the water supply of the building and water pressure is not persistent.
- Need a water detector if it is running.

Water nozzle in the back of the fume hood  Water alarm
Control box

- Always verify that the fume hood is working **before** beginning an experiment!
- Report ventilation problems to maintenance immediately!

Green light is on

Switch is in the “NORMAL” position

Alarm light is off

Keyed in the “ON” position (we don’t have the key and no need to change it)

Push the test button to make sure alarm is on!
Fume hood work practices

- Never operate closer than 6” behind the sash.
- Never put head into hood while contaminants are being generated.
- Always wear gloves, lab coat and goggle.
- Keep sash as low as possible during working. At other times, keep sash closed.
- Place equipment with large flat surfaces 2" to 3" off the surface.
- Locate equipment as far to the rear as possible, without blocking the lower slot in the rear baffle.
- Use a safety shield if there is a possibility of a small explosion or runaway reaction.
- Do not use perchloric acid in conventional chemical fume hoods.
Fume hood work practices

- Power cords should normally come under the lip.
- Do not place electrical receptacles or other sources of ignition in hood when flammables are present. e.g. power variac can be located under fume hood lip.
Fume hood work practices

- Must have the small blue sheet describing any ongoing experiment, contact information and how to shut off.
Additional work practices

- Remove all materials from hood which are not needed for the immediate work.
- Do not store chemicals in hood.
- No waste disposal
- Use good housekeeping in hood at all times. Clean up spills immediately.
- Avoid making rapid movements while working at hood.
- Minimize personnel traffic past hood.
- Avoid creating air currents in the laboratory which affect the air flow patterns into hood.
- Test the performance of hood at least once every six months.
Influence of the sash opening

- Keep the sash closed as much as possible when in use
- Keep the sash closed when not in use

Capture efficiency with **full-open** sash.

Capture efficiency with **partially-closed** sash.
Influence of the operation position

- Set up work at least 6” from the face opening.
Influence of bulky equipment

- Keep the slot of the baffle free of obstruction.
- Elevate each large instrument 2~3” off the surface.

Poor placement  Good placement
Chemical Storage Cabinets

They are under negative pressure and vapors are sucked out by the reduced pressure of the fume hood.

Ensure doors closed completely to protect chemicals from fire.
Fume hood failure

- Phone Buildings Operations Division immediately: Jerry Nunn  
  404-894-5332(O), 404-276-0834(C)
- Inform supervisor Dr. Art. Ragauskas  
  404-894-9701(O), 404-894-4778(F)
- Halt all experiments in progress and close the sash
- Place sign on fume hood indicating it is out of use
- Future use of fume hood is conditional upon approval of the Buildings Operations Division