



SAFETY AT WORK INSTRUCTIONS

WORK IN A CHEMICAL FUME HOOD

1. Do not work in a chemical hood before receiving training from a person familiar with all the hazards involved in the operation of the hood.
2. Validity check – the hood is inspected periodically. Do not use the hood before first inspection of the evaporation system, or if it is malfunctioning, or if the prior inspection certificate expired.
3. Prior to hood operation familiarize with: location of switches that control hood supplies: blower, power, gas, compressed air, or other gases, and vacuum.
4. Switch on the blower and ensure the warning system indicates correct air flow.
5. Check if the hood is suitable for the kind of work you intend to perform. When working with highly explosive or flammable materials use an explosion proof hood.
6. Check working order: internal lighting, rising window
7. Notify the lab manager of any hood malfunctioning. Do not work in a hood that is not in good working order.
8. Keep a 10 cm opening between the edge of the work surface and the hood wall. Do not block the ventilation openings.
9. Keep the sash closed and down as much as possible during preparations, operation, testing and on work completion (especially when working with systems under pressure, vacuum or extreme temperatures).
10. Clear unneeded equipment or chemicals from the hood
11. Check that power cables and equipment are organized and do not constitute a hazard (use suitable cable length)
12. Do not use a biological hood for chemical activities.
13. Safe work with organic solvents
 - 13.1. Most of the organic solvents are volatile substances (such as alcohols, ether, acetone) and in addition most of them are toxic and/ or flammable. Exposure to those materials occurs through the respiratory system or through skin absorption
 - 13.2. To not place a flammable liquid container on or near a gas burner, or other open flame, heat or spark sources. Keep acids, oxidizing materials and other reactive substances away from flammable liquids.
 - 13.3. For distillation use only approved equipment and conduct the process in the hood.

IN EMERGENCY, CALL 2222 FROM ANY INTERNAL EXTENSION

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Remember that flammable liquid vapors might spread and be ignited (by any ignition source, including sparks, high temperature or flame).

13.4. When using organic solvents during routine work, the operator might be exposed to solvent vapors.

FIRST SAFETY MEASURE IS SAFE WORK IN THE HOOD

- 13.5. Instruments that emit solvent vapors must be equipped with local suction for the removal of solvent vapors, or shall be placed in a chemical hood.
- 13.6. The worker shall use personal protection equipment: long trousers, protective glasses, closed lab coat with long sleeves, closed shoes and gloves suitable for the type of materials used.
- 13.7. Bottles containing solvents and transfer from one bottle to another and/ or to another container must be done inside a chemical hood in good working order.
- 13.8. In order to prevent solvent evaporation from the container into the lab space, it is recommended to use safety caps. The use of safety caps is recommended during the feeding step of the solvent to the system – to solvent bottles and when collecting waste to waste bins. In the absence of safety caps, liquids shall be fed from bottles through a minimal opening suitable for the introduction of a capillary tube.
- 13.9. Waste liquids shall be drained into containers dedicated for solvents waste disposal through a minimal opening suitable for the introduction of a capillary tube.
- 13.10. Do not pour organic solvents and hazardous materials waste down the sink and the sewage system. Act according to waste disposal procedures.
- 13.11. Ensure the capacity of the waste collection container fits the volume of liquids generated during the work process.
- 13.12. Waste containers shall be placed inside a spill containment capable of holding the containers contents in the event of container spillage/ leakage and shall be labeled accordingly.
- 13.13. Review the SDS of the materials used and choose to use the less hazardous materials (from the toxicity, flammability, etc aspect).
- 13.14. When it is required to use extremely hazardous materials (toxicity, flammability), in addition to the review of the SDS, learn about their safe use from the relevant literature.