

SAFETY AND HYGIENE REGULATIONS



Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

GENERAL PURPOSE FUME CUPBOARDS VA150960SG – FLORES VALLES

CODE

SHR 219

Date:

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DESCRIPTION OF A GENERAL PURPOSE FUME CUPBOARD

A general purpose fume cupboard is an item of work equipment for **chemistry experiments**. The main aim is to protect laboratory staff who work with toxic or harmful chemical products for research or teaching purposes. This is achieved by means of an effective extraction system and the physical protection provided by a space enclosed by solid and glass walls.

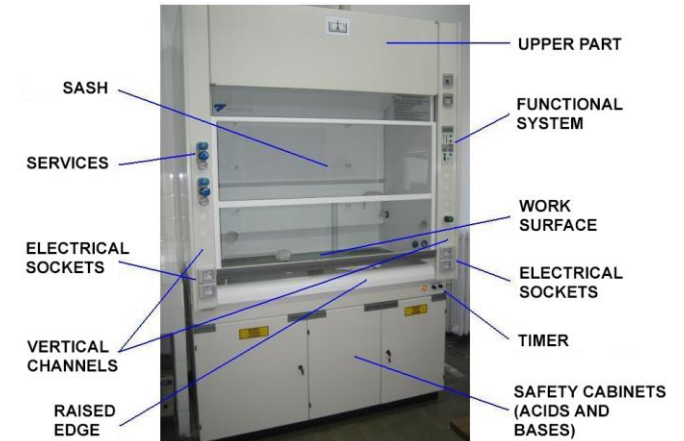
In its side panels, a general purpose fume cupboard has **additional electricity services (electrical sockets) and connections for liquids or gases** that may be required in the experiments. In the lower part of the fume cupboard are **safety cabinets** for storing acidic and basic chemicals.

SAFETY INFORMATION

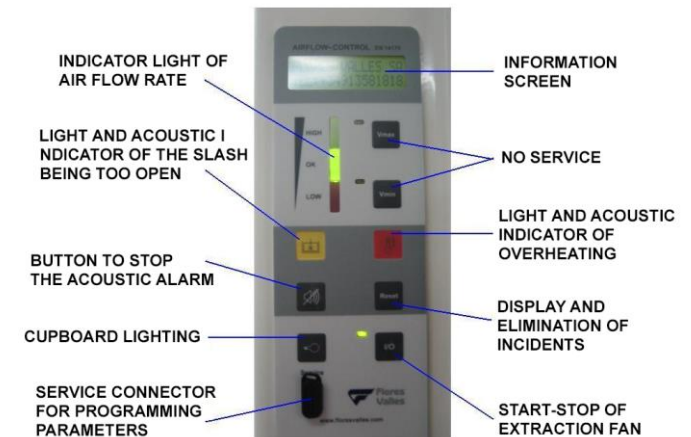
Fume cupboards have the following safety systems:

- **An acoustic alarm** that sounds when the level of extraction is too low.
- **An acoustic alarm** that sounds when the temperature is too high in the upper part of the cupboard and the extraction system has cut off, to prevent a potential fire.
- **An auxiliary battery** to provide electricity to the control panel if there is a power cut.
- **An active control system** to switch on the extraction fan and activate the acoustic alarm if a high temperature is detected inside the fume cupboard when it is switched off.

IMPORTANT! As a safety measure, if there is a **power cut**, the extraction system will start up **automatically** once the electricity supply has been re-established.



Equipment in the fume cupboard



Functional system

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GENERAL RECOMMENDATIONS

A general purpose fume cupboard can be identified by an **identification plate** situated in the upper part, on the side and at the back. This plate contains the serial number and the technical characteristics of the fume cupboard.

UPPER PART

The work surface is made from **ceramic and is highly resistant to aggressive chemicals**. It has a **raised edge** around it to prevent spills from spreading outside the work surface.

The sash has a **stop at the maximum height** at which the extraction system can work efficiently.

The vertical channels contain services such as a water tap, pressure regulators for technical gases, electricity sockets and fuses, etc. to facilitate the work that is carried out.

LOWER PART

The lower part is comprised of two safety cabinets for storing chemicals. One is for storing **acids**, the other for storing **bases**.

Safety cabinets have a **timer (to control the time that the extraction system is on and off)** that regulates the operation of the extraction fan in the cabinets, independently from the operation of the extraction fan in the upper part of the fume cupboard.



Identification plate



Trip switches



Technical gases



Safety cabinets



for chemical products

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GENERAL RECOMMENDATIONS

The timer has two regulators. The first regulates the number of hours that the extraction fan should run and the second regulates the number of hours that the extraction fan should be switched off.

The **orange device** at the side of the timer indicates:

- **Orange light on:** cabinet extraction fan is on.
- **Orange light off:** cabinet extraction fan is off.

Example:

If the **on regulator** is in the position 3 h and the **off regulator** is set to 1 h, the extraction fan in the safety cabinets will function for 3 h, stop for 1h, function for a further 3h, stop for 1 h, and continue in this way.

The timer should be adjusted so that the smell of chemical products cannot be perceived. In general, the following sequences are recommended for the storage of:

- **Small amounts of chemicals:** 2 h on – 1 h off
- **Medium amounts of chemicals:** 3 h on – 1 h off
- **Large amount of chemicals:** 5 h on – 0 h off
(Extractor fan functioning constantly)



Orange device and timer

PERSONAL PROTECTION EQUIPMENT TO USE

- **Safety goggles and gloves** when you are handling chemicals.
- A **laboratory coat** for all processes that are carried out in a laboratory.



Protecció obligatòria
de la vista



Protecció obligatòria
de les mans

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BEFORE WORKING

All processes that involve hazardous chemicals should be carried out inside the general purpose fume cupboard.

Take into account the following points to use the cupboard correctly:

1. Check the **light indicator showing the air flow rate** of the functional system, to ensure that the fume cupboard is working correctly (green light = position OK).
2. Allow the fume cupboard to work for **five minutes**, without carrying out any operation inside it and with no obstructions before and after each assay.
3. Place the work equipment that you need for the assay well within the fume cupboard. As a general rule, place equipment towards the sides of the fume cupboard and leave **15 to 20 cm between the equipment and the sash** so that nothing obstructs the movement of the sash.
4. The fume cupboard contains various signs with information about its correct use that you should read before starting work.

INCOMPATIBILITIES AND EFFECTS

DO NOT USE hydrofluoric acid habitually or in very concentrated amounts, as it could cause corrosion and damage to the fume cupboard (consult the manufacturer's instruction manual).

WHILE WORKING

1. **Do not put sources of heat near to the inside walls** of the fume cupboard or put work equipment that generates high temperatures (ovens, furnaces, etc.) inside the cupboard.
2. Remove all of the material that will not be used in the assay from the fume cupboard.
3. Use the sash as a protective screen and use the windows to access the interior of the upper part of the fume cupboard.
4. Do not stand in areas where high concentrations of contaminants are produced. Do not **put your head inside a fume cupboard** during an assay.
5. **Prevent people from moving around in front of the fume cupboard** when an assay is being carried out, as this could reduce the efficiency of the extraction system.
6. Immediately clean up any spills that occur either inside the fume cupboard or in the safety cabinets for chemicals. Use a **spill kit for this purpose**.

Consult **NSH 308 Action in the case of liquid chemical spills**, on the prevention website www.upc.edu/prevencio



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MANTENANCE, ORDER AND CLEANING

To ensure correct operation of the general purpose fume cupboard and prolong its life, a series of maintenance operations must be undertaken:

1. Store chemicals in the safety cabinets in the bottom of the fume cupboard. Close all containers of chemicals properly to avoid emanations or hazardous spills.
2. **Do not use the fume cupboard for general storage.** The cabinets under the cupboard are only for acidic and basic chemicals.
Do not store flammable products.
3. **Keep the sash fully closed when you are not working inside the fume cupboard.**
4. Periodically clean the inside and outside surface, including the light, as well as the front part that protects the table top (first clean with a cotton cloth soaked in water and then with a cotton cloth soaked in acetone). Disassemble the back panels to clean the back of the fume cupboard.
5. Check the correct operation of the slash (it should move up or down easily without needing too much force) and the additional services (it should open and close properly).
6. If the fume cupboard is not used for long periods, disconnect it using the trip switches in the vertical channel.

IN CASE OF AN INCIDENT

If any incident arises relating to the general purpose fume cupboard manufactured by Flores Valles, contact:

Company: FLORES VALLES
Telephone: 93 408 46 03
Fax: 93 408 09 88
Email: barcelona@floresvalles.com

For further information, *consult the Instruction Manual for Fume Cupboard VA / M-010-02 from Flores Valles* on the prevention website www.upc.edu/prevencio

