

Fume cupboard best practice

A 'free air flow zone' must be maintained on the external approach to the fume cupboard at ALL times.



It is important to maintain undisturbed airflow into the fume cupboard to ensure effective airflow and safe containment. Hanging lab coats on gas taps, or overcrowding the outside of the fume cupboard with equipment, causes turbulence and results in reduced fume cupboard effectiveness.

Appropriate face velocity should be maintained.



Check your manufacturer guidelines; fume cupboards are typically designed to maintain between 0.3 m/s and 0.5 m/s 'face velocity' ensuring containment.

High face velocities are NOT better; excessively high air velocity (>0.7 m/s) can induce turbulence, decreasing containment.

Report excessively high or low inflows to your local health and safety rep.

A 150 mm wide free-zone must be maintained behind the sash at ALL times.



Contaminants released near the sash are at increased risk of being drawn out of the cupboard. It is important to maintain undisturbed airflow in the fume cupboard, which may be impacted by poorly placed equipment or operator movements.

Overcrowding with equipment and reagents can cause turbulence which can block the air flow and result in a reduction in fume cupboard effectiveness.

Shut the sash completely when the fume cupboard is not in use.



A fully open sash is ineffective against over pressure events, reduces the efficiency of fume extraction; and increases energy consumption. Keep the sash as low as safely possible.

Use the right sash height (≤ 0.5 m)



The sash is designed to protect users against over pressure events and contaminants. Keep the sash as low as safely possible. Never raise the sash above the manufacturer's upper safety catch.

Under NO circumstances should an experiment require an operator to position their head inside the fume cupboard.

Avoid using fume cupboards to store chemicals and unnecessary equipment. Ensure gas and water connections are safe, well made and managed. (especially important for FCs fitted with motion sensor sash closer)



Use a dedicated ventilated storage area for chemicals, if required.

All hoses brought into the fume cupboard should be directed UNDER the sill and secured safely. It is recommended they be brought neatly to the side of the fume cupboard. All hose arrangements must allow for the sash to be shut completely.

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Good fume cupboard practice



Check the fume cupboard is operating within the correct parameters.

Only services provided within the fume cupboard should be utilised e.g internal water and gas taps. Feed cables under the sash prevent them from hanging free. All cables should be securely fastened using cable ties.

Sashes are maintained between the yellow and green traffic signals when in use. When not in use sashes are completely closed.

Only materials/equipment that are needed for experiments should be kept inside. The fume cupboard should not be used as storage space.

A 150 mm “free zone” is maintained from the front of the sash where no equipment/apparatus is placed in this area.

Bad fume cupboard practice



Sash is kept open above the yellow traffic light signal. This is a major health and safety risk and also increases the amount of energy used to maintain appropriate air flow.

Fume cupboard is full with materials and equipment that are not used for experiments and disrupt air ventilation.

A 150 mm “free zone” is not maintained from the front of the sash.

Unnecessary cables are hanging out from the fume cupboard and/or outside gas and water cables are running through the opening of the fume cupboard. This is a hazard that prevents full sash closure in the event of an emergency.

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