



FACT SHEET: FUME HOOD ENERGY CONSERVATION

Fume hoods are one of the largest energy users on campus. In fact, laboratory ventilation systems can account for half of all energy used in a lab, and a single fume hood can consume as much energy as 3.5 homes! Their high-energy consumption is due to the fact that air is constantly exhausted to the outdoors. The best way to reduce energy consumption from fume hoods is to close the sash when the hood is not in use. The sash is also a safety barrier, so the fume hood sash should only be opened to set up or modify an experiment.

Frequently Asked Questions

Why do fume hoods use so much energy?

Labs require more air exchanges than other spaces on campus. Heating and cooling require significant amounts of energy and, in a lab, all that cool or warm air is exhausted straight to the outdoors through the fume hood and cannot be recirculated. Conditioning the air and running large fans for ventilation consumes a lot of energy.

How does shutting the sash save energy?

Many fume hoods at CSU are variable air volume (VAV), meaning that a motor varies the air flow depending on the sash height. The motor and fans work harder when the sash is wide open and HVAC systems also have to work harder to condition the air. The fan speed and volume of air being moved decreases when the sash is lowered, all of which results in significant energy savings.

Is it safe to shut the sash?

The sash is an important safety barrier between the fume hood interior and the laboratory. The fume hood sash should only be open when setting up an experiment or when directly manipulating substances within the hood and then only to the lowest level necessary to perform the experiment. Always close it fully when not in use. Even when shut, there is still some air flow through the hood to remove any fumes.

What other lab practices can reduce energy consumption?

- ➔ Only use the button labeled *Ventilation Start* in an emergency. It increases air exchange to maximum capacity and is extremely energy intensive. Pull the button out to deactivate.
- ➔ Never store chemicals in a fume hood. Use a safety cabinet instead, which doesn't require large volumes of air flow.
- ➔ Use the right size equipment for the task and turn it off when not in use, especially equipment that must maintain a set temperature, whether hot or cold.

These stickers remind lab users to close the sash when not in use. They also serve to educate new fume hood users that a lower sash is safer and that the sash should only be open when setting up and modifying experiments.



Keep yourself safe, avoid chemical exposure and reduce campus energy use by shutting the sash!

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