

Keeping lab professionals safe from seen and unseen dangers



Anyone who's work involves the management or the handling of chemicals in a laboratory setting knows that not all risks can be eliminated but there are reasonable measures that can be adhered to in order to minimize the risks and enhance laboratory safety.

Laboratory professionals who are exposed to chemical vapors, multiple times a day, may not have considered what percentage of noxious fumes are invading the air they breathe while at work, and beyond. While some vapors are obviously vile, others may be creating an unhealthy, odorless contamination of the air being breathed. There is also the concern that these toxic substances are going home with you through evaporation on your skin and clothing that may not be discernible but have the potential to sicken you and those you live with.

Assessing the danger



Whether you are a lab technician, chemist, department head or supervisor tasked with maintaining healthy working conditions for staff, there are a number of steps that can be taken to ensure all hazards are defined and eliminated. Introducing control measures, such as air purification to contain polluted air, should follow a complete examination that includes:

- A determination of the physical state of the toxic material (paste, powder, liquid)
- The toxicity relevant to the substance (ex. LD50, LC50)
- The chemical properties of the substance (vapor pressure, odor threshold, boiling point etc.)
- Potential health effects (negative reproduction effects, eyes, nose, skin irritations)
- Discovering the potential routes of exposure (route of escaping fume, inhalation, skin absorption)

- The amount of chemicals being used as well as the size and layout of the room(s)
- How the material is being handled, how often, where is it being stored

Storing chemicals safely

Performing an assessment of how the toxic chemicals are stored, used, handled, and disposed of will be the best way to find out if existing ventilation or other hazard control measures are adequate. Research will recommend that all airborne contaminants can be eliminated with flexible, [ductless filtering chemical fume hoods](#) and [ceiling air filtration stations](#). This combination ensures complete purification of contaminated air throughout the entire laboratory by drawing the noxious odors away from people in the work area and returning purified air to the lab space. These ductless filtering chemical fume hoods are also more flexible, economical, and easier to install, as there are no HVAC alterations needed. Keep in mind that not all applications are suitable for a ductless fume hood which is why it is so important to [speak to an expert](#) and have a [chemical assessment](#) completed before making a choice.



Containing vapors throughout the process



A major source of toxic vapor spread is in the handling and storing of chemicals. The following recommendations should be adhered to for safe chemical storage in general:

1. Ensure that the storage area/cabinet/unit is out of direct sunlight and ventilation is internal ([through self-contained filtration](#)) which will prevent vapors escaping every time materials are taken out to use or put away to store.
2. All toxics should be stored away from any processing or handling areas, as well as eating areas or places where protective equipment is stored.
3. Ensure that emergency eye-wash and shower stations are ready and nearby
4. The storage area should be fire-resistant and made with non-combustible materials
5. Fire extinguishers and suitable spill clean-up equipment should be nearby and available

Finding a healthy solution

When researching chemical storage products remember to include options that will protect everyone in the lab environment against chemical inhalation in the use, handling, and storage of the chemicals. Consider using [ductless filtering chemical fume hoods](#) and [laboratory storage](#) systems as they are safe, convenient, easy to install and maintain, and do not require costly HVAC changes to infrastructure. In addition to the many models available to choose from, existing [safety cabinets](#) can be equipped with innovative filtration units for the added benefit of keeping the lab environment free of toxic chemical vapors.





About Erlab

Erlab's state of the art Research & Development Laboratory relies exclusively on filtration

We provide safety. we protect your health

Erlab invented the ductless fume hood in 1968. With more than 50 years of experience in the field of chemical filtration and protection of laboratory personnel; we know the formula for safety. With Erlab, you will never have to wonder or worry if our products are safe. We build each one of the following ingredients into our products, and without all of them, your health and safety will be compromised.

1 R&D Laboratory

The engineers and chemists in our state-of-the-art R&D laboratory understand molecular filtration. We are committed to designing products that are safe and of the highest quality, strive to improve our products, and continuously develop new products that provide greater protection in the laboratory.

2 Strict Safety Standards

We hold ourselves to the highest standard and adhere to the strict AFNOR NF X 15-211: 2009 filtration safety standard as endorsed by ANSI Z9.5-2012.

3 A Published Chemical Listing

It all begins here. Without this listing, we are not compliant with AFNOR NFX 15-211. Our in-house laboratory tests, as well as independent testing, verifies the retention capacity of over 700 chemicals for our filters.

4 Independent Testing

Erlab filters have been independently tested multiple times at various concentrations guaranteeing that our safety solutions all adhere to the strict performance criteria of the AFNOR NF X 15-211:2009 standard assuring that the emission concentration at the filter exhaust will always be lower than 1% of the TLV.

5 Application Questionnaire (Valiquest)

Our laboratory specialists will recommend the appropriate filtration fume hood, type of filter, and personalized advice.

6 Certificate of Validation for the chemicals used in the hood

A certified PhD chemist issues a Certificate of Validation with a list of the chemicals approved for use in the hood.

7 Safety Program

We back up our products 100%. This program includes your specialized chemical evaluation, validation of your hood upon installation, and a filtration safety specialist at your service to ensure that your hood is operating to its full potential.

United States
+1 800 964 4434 | sales@erlab.com

France
+33 (0) 2 32 09 55 80 | ventos@erlab.net

Germany
0800 330 47 31 | export@erlab.net

United Kingdom
+44 (0) 1722 341 940 | export.north@erlab.net

China
+86 (0) 512 5781 4085 | sales.china@erlab.com.cn

Italy
+33 (0) 2 89 00 771 | export.south@erlab.net

Spain
+34 936 732 474 | export.south@erlab.net

 **erlab**
You can breathe. usa.erlab.com