

## Kraftwerks Newsletter January 2024

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### Welcome 2024!

The team at Kraftwerks wishes you great success in your business goals, plans, and resolutions, and we look forward to helping you attain them. From our family to yours, best wishes and Happy New Year!

### Controlled Environments

Cleanrooms are controlled environments with strict controls on the number and size of particles allowed per measure of air. They are ISO (International Organization for Standardization) and FDA rated for standards and classifications based on those controls. Cleanrooms must adhere to FDA regulations and follow CGMP (Current Good Manufacturing Practice) guidelines.

Some of the environmental controls for a cleanroom include:

- Temperature
- Humidity
- Air pressure, air flow, & air motion
- Electrostatic discharge
- Noise levels
- Lighting
- Ingress & egress protocols for personnel



### The Space Integrity

The construction materials, floors, and work surfaces in a cleanroom should be non-porous and resistant to chemicals and solvents. They must be easy to clean and durable. It is critical to pay attention to every detail inside a cleanroom because if a small detail is missed, the environment can become contaminated and cause the air to become impure.

Contamination can occur via:

- Doors & windows
- Pipes & ducts
- Joints, seams, & cracks or fissures in walls, floors or work surfaces
- Work processes
- People (residue from skin, hair, fabrics, etc.)

Cleanrooms do not have to be permanent structures. Instead, it may be more advantageous to build a modular cleanroom. Modular cleanrooms install quickly and have the advantage of the ability to be easily reconfigured and/or relocated for expansion or contraction.



### Air Safety

Inside the cleanroom, safety is critically important. Fume hoods are vital containment systems for fumes, vapors, viruses, infectious diseases, particles, and odors. Not only do they shield workers from dangerous exposure, but they also protect the integrity of the work performed. And exposure, even in the smallest of quantities could lead to serious illness or injury to workers.

Determining which type of fume hood is best for your application can be a challenge. There are different types to consider and it's important to select the best choice for both the type of work performed and the laboratory setting.

Here are some of the more common types of fume hoods:

- Bench top – good for limited floor space, not free-standing
- Floor mounted – free standing
- Walk-in – large, able to accommodate technician & larger equipment
- Biosafety cabinet – viral or infectious pathogens
- Perchloric acid – specially designed steel, avoids perchlorate salt buildup
- Radioisotope – prevents absorption of radioactive & corrosive chemicals
- Ductless – collects & filters air internally via filters
- Snorkel – small, can be mounted on ceilings, walls or work surfaces



### A Place to Work

Selecting the right work surface material is an important choice. There are many common work surface options including hardwood, epoxy, phenolic resin, laminate, and stainless steel. Not every choice will work well in laboratory or cleanroom environments. Epoxy countertops are a popular choice for laboratories, while stainless steel is a popular choice for cleanrooms because it has so many of the important characteristics they require.

In any case the best work surfaces should be:

- Nonporous
- Chemical resistant
- Abrasive resistant
- Heat resistant
- Moisture resistant
- Bacteria resistant
- Impact resistant
- Easy to clean/sterilize
- Durable

The team at Kraftwerks has extensive laboratory experience. If you read our case studies below, you'll see examples of the different laboratory applications we've completed.

Whether you have a design already in place or you're looking for a turnkey solution, we have the right people with the right experience. And we pay attention to the details from planning and design to sourcing equipment. We'll follow the details right down to ensuring the floor seams are sealed.

### Case Studies

[RCM  
Thermal](#)[SUNY  
Bat Lab](#)[UB  
Renew](#)[Pine  
Pharmaceuticals](#)

### Resources

[Kraftwerks Laboratory Solutions Video](#)[Kraftwerks Modular  
Work Spaces](#)[Kraftwerks Fume  
Hoods/BSC](#)[Kraftwerks Lab  
Furniture](#)[InPlant Cleanroom Video](#)[BOSTONtec Workstation Video](#)

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