

Good Cleanroom Practice and Procedures

Vacuum Shoebrush/Tacky Matt

A vacuum shoebrush should be provided outside the dressing area for use for five seconds on each. A tacky matt placed at the entrance of the dressing area will help remove even more particles from shoes.

Opening Cleanroom Doors

Make sure all contamination sensitive parts and surfaces are moved away from the doorway. Even though the flow of air should be to the outside, there is still a chance of particles being injected into the cleanroom while doors are open.

Air Turbulence

In an empty cleanroom, a wall of filtered air travels unimpeded in either a vertical or horizontal flow. Unfortunately, whenever anything is put in the path of the air flow, including equipment or people, a turbulent air pattern called a vortex is created. Much like dust in a whirlwind, particles tend to be drawn into these turbulent areas, and resettle throughout the cleanroom. It is imperative that equipment and people be stationed as far away from the direct face or flow of air in the cleanroom as possible.

Air Pressure

The air pressure in the cleanroom should be positive in relation to adjacent rooms. This will help to prevent the inflow of particles from the outside when doors are opened. Air pressure can be adjusted through the cleanroom air handling system.

Static Control

When the relative humidity drops below 30% in the cleanroom, there is very little moisture in the air to dissipate static charges. These static charges are capable of doing physical damage to sensitive electronic parts. As these charges accumulate on furniture, equipment, people and critical products, particles will also be attracted to these surfaces. Static can be controlled through the cleanroom air handling system by adjusting the relative humidity of the incoming air. People working in the cleanroom can also wear grounded wrist straps to help dissipate static charges.

Product Handling

Never use bare hands to touch a critical product. Hands contain body oils as well as dirt and skin particles that can be transferred to the product surface. Always wear approved gloves or use clean handling tools such as tweezers or tongs.

Maintenance/Cleaning

The cleanroom must be cleaned on a regular schedule determined by the contamination control engineer, who should keep a log book of each cleaning. With few exceptions, it should be cleaned either before or after the regular working shift, with the floors and all horizontal surfaces being the main priority. Walls and ceilings may require cleaning after extended shutdowns or degradation of air cleanliness.

Tape the wheels on all equipment and furniture with cleanroom approved tape. If an item entering the cleanroom cannot be cleaned, it should be sealed in approved packaging material.

Wipe down all incoming equipment with cleanroom approved wipers and clean-filtered solvent using a unidirectional wiping stroke rather than a back and forth motion.

Water that has been deionized and filtered can serve as an effective cleaning solution in the cleanroom. Do not use powdered detergents but only approved liquid detergents. Rinse thoroughly to remove all detergent residue.

Only use wipers with low particle and low residue properties. Avoid tissue type wipers. Also avoid wipers that have been treated with surfactants, as they can leave behind residues and react with process solvents to produce even more contaminants.

Hardware Packaging

All contamination sensitive parts leaving the clean room should be packaged in approved cleanroom packaging material and sealed using a heat sealer or cleanroom approved tape. Do not put two items in the same bag, as they will generate particles when they touch or rub together. Open sealed packages with a razor blade or by sliding scissor blades clear through.

Storage

Contamination sensitive parts should be stored in protective packaging or an ultraclean container and placed out of the flow of cleanroom traffic.

Shutdown

When the cleanroom is shut down due to a power outage or major maintenance, the room must be recertified to meet Federal Standard 209D Cleanliness Class requirements. A down time of less than 72 hours requires only routine cleaning. For periods of over 72 hours, the cleanroom should be cleaned from ceiling to floor before recertification.

Safety

Know where all fire exits and fire extinguishers are located in the cleanroom. Be aware of any hazardous chemicals or substances in your vicinity and know how to deal with any accidents that may occur