

AHU – Air Handling Unit

The main system that conditions, filters, and circulates air throughout the Cleanroom.

ATEX – ATmosphères EXplosibles

EU directive for equipment used in potentially explosive atmospheres (sometimes relevant for solvent-based Cleanrooms).

BMS – Building Management System

A centralised control system that monitors and automates services in a Cleanroom facility, including HVAC, lighting, power, access control and fire systems. It can provide real-time data, alarms, and energy management for the facility and integrate into a site wide system.

CFD – Computational Fluid Dynamics

Modelling tool used to predict airflow and particle movement inside Cleanrooms.

CNC Zone – Controlled Non-Classified Zone

A clean but unclassified area typically used as a supporting zone to a classified Cleanroom. Basic controls are applied without full Cleanroom classification.

EMA – European Medicines Agency

European regulator that enforces GMP for medicines.

EMS – Environmental Monitoring System

A dedicated system for continuous real-time monitoring of critical Cleanroom parameters such as airborne particles, pressure differentials, temperature and humidity. It can generate audit-ready records and instant alarms to ensure ongoing compliance.

EU GMP Annex 1 – Manufacture of Sterile Medicinal Products

The primary regulatory document defining Cleanroom grades (A–D) for pharmaceutical production.

FDA – U.S. Food and Drug Administration

U.S. regulator equivalent to MHRA/EMA for drugs and medical devices.

FFU – Fan Filter Unit

Self-contained HEPA/ULPA filter with integrated fan. An alternative to contamination control via central AHU and terminal HEPA/ULPA filtration without an integrated fan.

GMP – Good Manufacturing Practice

Set of regulations governing pharmaceutical and medical-device production; EU GMP and U.S. cGMP.

HEPA – High Efficiency Particulate Air

Filter that removes particles from air passing through it to create a Cleanroom environment.

HMI – Human-Machine Interface

Touch panels or screens inside the Cleanroom for controlling equipment.

HVAC – Heating, Ventilation and Air Conditioning

The overall environmental control system for a Cleanroom facility.

ISO 14644-1

International standard defining Cleanroom classification by airborne particle concentration (ISO 1 to ISO 9).

LAF – Laminar Air Flow

Unidirectional airflow, usually vertical, at 0.3–0.5 m/s (also called laminar flow).

LFL – Laminar Flow Hood / Cabinet

Localised ISO 5 or better zone. Often a bench top with hood above.

M&E – Mechanical & Electrical

UK/Commonwealth term for the coordinated design and installation of all mechanical (HVAC, plumbing, etc.) and electrical systems in a Cleanroom project.

MEP – Mechanical, Electrical and Plumbing

An alternative acronym to M&E; covers HVAC, power, lighting, fire suppression, process piping, and controls essential to Cleanroom operation.

MHRA – Medicines and Healthcare products Regulatory Agency

UK regulator responsible for GMP inspections and licensing.

RABS – Restricted Access Barrier System

Physical barrier with glove ports and HEPA airflow; used as an extra risk mitigator within Cleanrooms in pharma.

ULPA – Ultra-Low Penetration Air

Filter removing ≥99.999 % of particles ≥0.12 µm; used in ISO 3–ISO 5 areas. An equivalent but higher performing filter to a HEPA.

UPS – Uninterruptible Power Supply

Battery-backed or generator-supported power system that keeps critical Cleanroom systems (HVAC, FFUs, monitoring, etc.) running during mains failure to maintain positive pressure and filtration.

UDF – Unidirectional Flow (same as laminar flow)

URS – User Requirement Specification

A formal document that comprehensively defines exactly what the client needs the Cleanroom to do: classification, size, environmental conditions, material types, regulatory standards, equipment interfaces and more. The URS is the foundation for design, costing, and validation.

VHP – Vapour-Phase Hydrogen Peroxide

Common gaseous bio-decontamination method for Cleanrooms and isolators.

VOCs – Volatile Organic Compounds

Gaseous chemical contaminants (solvents, alcohols, siloxanes, etc.) released from materials, cleaning agents, or processes that can adsorb onto sensitive surfaces and cause product defects.