Table 1-1 Glossary of Terms Related to Sterile Drug Technology

Absolute Rating—The size of the largest spherical particle completely retained on the filter. An absolute filter of 0.2 μ retains all particles ≥0.2 μ.

Action Level—An established microbial or airborne particle level that, when exceeded, should trigger appropriate investigation and corrective action based on the investigation.

Air Lock—A small area with interlocked doors, constructed to maintain air pressure control between adjoining rooms. Used to stage and disinfect large equipment prior to transfer from lesser-controlled room to higher-controlled room.

Alert Level—An established microbial or airborne particle level giving early warning of potential drift from normal operating conditions, and which triggers appropriate scrutiny and follow-up to address the potential problem. Alert levels are always lower than action levels.

Ampule—A final container that is totally glass in which the open end after filling a product is sealed by heat. Also referred as ampul, ampoule, carpule (French).

Antimicrobial Preservative—Solutes such as phenol, meta-cresol, benzyl alcohol, and the parabens that prevent the growth of microorganisms. Must be present in multiple dose parenterals.

Antioxidants—Solutes that minimize or prevent drug oxidation. Examples include sodium bisulfite, ascorbic acid, and butylated hydroxyanisole.

Aseptic—Lack of disease-producing microorganisms. Not the same as sterile.

Aseptic Processing—Manufacturing drug products without terminal sterilization. The drug product is sterile filtered, then aseptically filled into the final package and aseptically sealed.

Autoclave—A system that sterilizes by superheating steam under pressure. The boiling point of water, when pressure is raised 15 psig above atmospheric pressure, is increased to 121°C (250°F). This is the most common means of terminally sterilizing parenteral products.

Barrier—A system having a physical partition between the sterile area (ISO 5) and the nonsterile surrounding area. A barrier is differentiated from an isolator in that the barrier can exchange air from the fill zone to the surrounding sanitized area where personnel are located, whereas an isolator cannot exchange air from the fill zone to the sterilized surrounding area where personnel are located.

Bioburden—Total number of microorganisms detected in or on an article prior to a sterilization treatment. Also called microbial load.

Biological Indicator—A population of microorganisms inoculated onto a suitable medium (e.g., solution, container, closure, paper strip) and placed within an appropriate sterilizer load location to determine the sterilization cycle efficacy of a physical or chemical process. The specific microorganisms are the most resistant to the particular sterilization process.

Bubble Point—Used in filter integrity testing; the pressure where a gas will pass through a wetted membrane filter. Each filter porosity and type has a given bubble point.

Buffers—Solutes used to minimize changes in pH, important for many drugs to maintain stability and/or solubility.

Chelating Agents—Solutes that complex metal ions in solution, preventing such metals from forming insoluble complexes or catalyzing oxidation reactions. Example: ethylenediaminetetraacetic acid (EDTA)

Class X—A Federal Standard for clean room classes. Whatever X is, for example, 100, means that there are no more than X particles per cubic foot ≥ 0.5 μm.

Clean Room—A room designed, maintained, and controlled to prevent particle and microbiological contamination of drug products. Such a room is assigned and reproducibly meets an appropriate air cleanliness classification.

Colony Forming Unit (CFU)—A microbiological term that describes the formation of a single macroscopic colony after the introduction of one or more microorganisms to microbiological growth media.

Coring—The gouging out of a piece of rubber material caused by improper usage of a needle penetrating a rubber closure.

Critical Area—An area designed to maintain sterility of sterile materials.

Critical Surfaces—Surfaces that may come into contact with or directly affect a sterilized product or its containers or closures. Critical surfaces are rendered sterile prior to the start of the manufacturing operation, and sterility is maintained throughout processing.

D-Value—Time in minutes (or dose for radiation sterilization) of exposure at a given temperature that causes a one-log or 90% reduction in the population of specific microorganisms.

Disinfection—Process by which surface bioburden is reduced to a safe level or eliminated. Some disinfection agents are effective only against vegetative microorganisms.

Endotoxin—Extracellular pyrogenic compounds.

HEPA—High Efficiency Particulate Air filters, capable of removing 99.97% of all particles 0.3 μ and higher.

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