

Ancillary Equipment and Supplies

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INTRODUCTION

This chapter will assist the reader in selecting equipment and supplies used in compounding sterile preparations. The chapter focuses on equipment and supplies that are essential to facilitate compliance with the requirements of USP Chapter <797> Pharmaceutical Compounding—Sterile Preparations and USP Chapter <800> Hazardous Drugs—Handling in Healthcare Settings.^{1,2} This chapter does not attempt to cover the myriad of sources of equipment and supplies as it is not possible to cover every item on the market because marketed items are constantly changing.

For timely information on equipment and supplies covered in this chapter, the reader is referred to the following websites:

- The Controlled Environment Magazine Buyer's Guide at www.cemag.us/content/buyers-guide
- The Pharmacy Purchasing & Products Suppliers Guide at www.2finditnow.com

One can always do a search with a major search engine, such as Google. Readers will also find useful information from their group purchasing organization and from other departments within their organizations such as infection control, housekeeping, surgery, and, of course, purchasing.

This chapter does not cover the selection of primary engineering controls (PECs) such as laminar airflow workbenches, biological safety cabinets, and compounding isolators (Chapter 9). Nor does it cover automated compounding devices and robotic compounders (Chapter 26). This chapter does not cover intravenous products such as large and small volume parenterals or other pharmaceuticals. It does not cover compounding and dispensing software and computer hardware. It does not cover sterile compounding educational equipment and supplies (Chapters 23 and 24). Finally, this chapter does not explain how

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and when to use equipment and supplies; that information is covered in other chapters of this book.

EQUIPMENT

Equipment decisions often drive the layout of the ante area and buffer areas for sterile compounding. The sizing, layout, and overall design of spaces should take into consideration the equipment that is required to perform the work, appropriately store products and preparations, and maintain access to the room. In addition to the ante area and buffer area, many important equipment decisions have to be made properly to set up for compounding of sterile preparations. Compiling an equipment list should be the first step of assessing and designing any sterile preparation compounding space.

CARTS

Carts can be thought of in two different capacities: storage of supplies and drugs used for compounded sterile preparations (CSPs) and a mechanism for transporting necessary supplies into the buffer area and final preparations outside of the buffer area. Regardless of the function of the cart (storage or transport), USP Chapter <797> makes the following statement about such carts:

Carts should be of stainless steel wire, nonporous plastic, or sheet metal construction with good quality, cleanable casters to promote mobility.¹

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Carts serve many functions in and around pharmacy ante areas and buffer areas—work carts, supply carts, transfer carts, delivery carts, etc.³ Work carts are usually made of stainless steel and can be used to organize and stage drugs and other components for compounding in the buffer area. When planning a compounding area, often these work carts can be planned and associated with each PEC. Supply carts might be used in the buffer area to hold those ancillary supplies needed for the shift's compounding. Wire supply carts can be fitted with plastic storage bins to hold syringes, needles, etc. Supply carts should have a solid bottom shelf or a liner on the bottom shelf (if made of wire) for

infection control purposes and regulatory compliance. Although supply carts may be made of various materials, stainless steel is preferred due to its durability when exposed the cleaning agents used in the buffer and ante area. Supply carts usually remain stationary between floor cleanings, whereas work carts are moved frequently between the ante area and buffer area.

Transfer carts are used to deliver drugs and components from storage to the ante area but are not introduced into the buffer area. Components and CSPs should be moved in and out of ante areas and buffer areas on suitable carts (Chapter 20). Transfer carts may be of molded, nonporous plastic, wire, or sheet metal as long as their construction can bear heavier loads. Carts for delivery to patient care areas should be selected on the basis of size and quantity of the sterile preparations involved. Large quantities of large-size sterile preparations should be transported on heavy duty, stainless steel wire carts. Carts that have been to patient care areas should never enter the buffer area.

CASEWORK AND MILLWORK

Casework is a general term that refers to assembled cabinets and storage units. Casework can either be mobile (e.g., on casters), freestanding modular, or built in. A familiar example of casework is the laboratory bench from a high school science class. *Millwork* refers specifically to the wood cabinetry that is built into the space and attached to the walls and floors. Kitchen cabinets and counters found in any residence are familiar examples of millwork. When designing a cleanroom, the use of millwork should be avoided if possible, and any casework used should be mobile (e.g., on casters) to facilitate cleaning of the space. Any casework used should be impervious and able to withstand the harsh cleaning chemicals used in the cleanroom.

BENCHES, CHAIRS, TABLES, AND OTHER CLEANROOM FURNITURE

Stainless steel furniture should be the standard for cleanrooms because stainless steel can easily be cleaned and does not generate particles. For comfort, chairs may be covered with a cleanable vinyl. Benches, chairs, stools, tables, and other