

HVAC Design of Compounding Pharmacies

White Paper Developed by

ASHRAE Standing Standard Project Committee 170,
Pharmacy Work Group



Peachtree Corners

© 2024 ASHRAE

180 Technology Parkway · Peachtree Corners, GA 30092 · www.ashrae.org · All rights reserved.

This white paper was developed by
ASHRAE Standing Standard Project Committee (SSPC) 170,
Pharmacy Work Group.

ASHRAE SSPC 170 Pharmacy Work Group Members

Aaron Johnson

Robert Heinlein

Paul Kondrat

Maya Salabasheva

Eric Granzow

Amit Bhansal

Other Contributing Authors

Michael Geppert

Benjamin Leutze

Kyle Mulder

Jim Wagner

This white paper has been reviewed and approved by the active
SSPC Voting Members at the time of publication

ASHRAE is a registered trademark in the U.S. Patent and Trademark Office, owned by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

ASHRAE has compiled this publication with care, but ASHRAE has not investigated, and ASHRAE expressly disclaims any duty to investigate, any product, service, process, procedure, design, or the like that may be described herein. The appearance of any technical data or editorial material in this publication does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedure, design, or the like. ASHRAE does not warrant that the information in the publication is free of errors, and ASHRAE does not necessarily agree with any statement or opinion in this publication. The entire risk of the use of any information in this publication is assumed by the user.

No part of this publication may be reproduced without permission in writing from ASHRAE, except by a reviewer who may quote brief passages or reproduce illustrations in a review with appropriate credit, nor may any part of this publication be reproduced, stored in a retrieval system, or transmitted in any way or by any means—electronic, photocopying, recording, or other—without permission in writing from ASHRAE. Requests for permission should be submitted at www.ashrae.org/permissions.

References and Bibliography

References

- ASHRAE. 2018. ASHRAE Research Project RP-1431, *Analysis of Transient Characteristics, Effectiveness, and Optimization of Cleanroom Airlocks*. Final Report. Peachtree Corners, GA: ASHRAE.
- ASHRAE. 2021. ANSI/ASHRAE/ASHE Standard 170-2021, *Ventilation of Health Care Facilities*. Peachtree Corners, GA: ASHRAE.
- ASHRAE. 2022. ANSI/ASHRAE Standard 62.1-2022, *Ventilation and Acceptable Indoor Air Quality*. Peachtree Corners, GA: ASHRAE.
- ASHRAE. 2023. *ASHRAE Handbook—HVAC Applications*. Peachtree Corners, GA: ASHRAE.
- IENT. 2004. IEST-RP-CC006, *Testing Cleanrooms*. Arlington Heights, IL: Institute of Environmental Sciences and Technology.
- IENT. 2022. IEST-RP-CC034, *HEPA and ULPA Filter Leak Tests*. Arlington Heights, IL: Institute of Environmental Sciences and Technology.
- ISO. 2015. ISO 14644-1:2015, *Classification of Air Cleanliness by Particle Concentration*. Geneva: International Organization for Standardization.
- NRC. 2009. NRC Regulatory Guide 8.18, *Information Relevant to Ensuring that Radiation Exposures at Medical Institutions will be as Low as is Reasonably Achievable*. U.S. Nuclear Regulatory Commission. <https://www.nrc.gov/docs/ML1023/ML102350460.pdf>.
- USP. 2022. *USP Compounding Compendium*. Rockville, MD: United States Pharmacopeia.

Bibliography

- The Controlled Environmental Testing Association (CETA)
- USP. 2022. USP General Chapter <659> *Packaging and Storage Requirements*. Rockville, MD: United States Pharmacopeia.
- USP. 2022. USP General Chapter <795> *Pharmaceutical Compounding—Nonsterile Preparations*. Rockville, MD: United States Pharmacopeia.
- USP. 2022. USP General Chapter <797> *Pharmaceutical Compounding—Sterile Preparations*. Rockville, MD: United States Pharmacopeia.

