

How IT Works

High Containment at Low Cost

Problem: Today, many laboratories need a small enclosure to establish a clean room environment for high hazard containment.

Contamination from environmental exposure can change reaction results and physical properties.

Applications involving costly ultra-pure chemicals or nanoparticles are examples. In addition, many of these chemicals and new compounds have unknown toxicology. Researchers must take appropriate measures to protect their results, as well as themselves and the laboratory environment. However, few labs have the resources to dedicate an entire room for these ultra-clean applications.

Solution: The Precise™ HEPA-Filtered Glove Box addresses this need by providing ISO Class 3 clean room conditions in an affordable, versatile, and efficient containment device. Its shell of rotationally molded medium density polyethylene is chemical resistant, strong, and lightweight.

Particulate performance tests confirm the HEPA-Filtered Glove Box's ability to quickly create and maintain clean room conditions during positive and negative pressure operations.

Initial airborne particulate levels within the main chamber exceed ISO Class 5 conditions (= Class



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100), and achieve ISO Class 3 conditions (= Class 1) at all operational airflow speeds, in both positive and negative pressure operational conditions. This performance equates to 1 particle at 0.5 micron per minute per cubic foot of air volume.

The operator controls the main chamber dilution rates using a quiet, adjustable speed built-in blower. The main chamber is 13 cubic feet, resulting in total air volume changes between 1–7.69 per minute.

The blower pulls room air into

the main chamber through an inlet HEPA filter, producing a negative pressure ultra clean environment. Particulates generated within the main chamber are then trapped on the exhaust HEPA filter. For high hazard applications, the glove box exhaust vents to a negative pressure exhaust system.

The Glove Box can adapt to changing applications. Re-routing the blower discharge to the inlet HEPA filter positively pressurizes the main chamber, resulting in ultra-clean conditions for handling lower hazard materials.

The HEPA-Filtered Glove Box is leak-tested with helium validating glove box seals to a leak level of 1x 10⁻³ mL/sec or less. An extensive validation test report including data on gas dilution rate, ASHRAE 110 containment, smoke removal, blower curves, noise levels, vibration, lighting, helium leak rate, and oxygen leak rate is available at www.labconco.com.

The Precise HEPA-Filtered Glove Box provides a cost-effective, versatile, chemical-resistant containment system for researchers requiring particulate protection for themselves and their sensitive materials.

For more information, go to www.labconco.com