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# Protector Combination Glove Boxes

Protector Combination Glove Boxes provide inlet and outlet HEPA or ULPA filtration and a leak-tight physical barrier to protect the operator from exposure to potentially hazardous materials and perform work with contamination-sensitive materials under vacuum or in an inert environment. Protector Combination Glove Boxes feature two internal valves to convert the glove box from a flow-through filtered box to an inert atmosphere glove box.

Need an ultrapure inert atmosphere? All Protector Combination Glove Boxes are compatible with the new [AtmosPure Re-Gen Gas Purifier](#) accessory, which has the capacity to remove up to five liters of oxygen (13,500 ppm) and 660 grams of moisture (18 million ppm) at standard temperature and pressure (STP).

These stainless steel or fiberglass-lined glove boxes have the capability to function as either a filtered box or a controlled atmosphere box.

## Compliance

- ETL (North America models)
- UL 61010-1 (North America models)
- CAN/CSA C22.2 No. 1010.1 (North America models)
- CE Conformity Marking (International models)

## Features

- Factory leak-tested with a mass spectrometer while pressurized with helium at 5 inches of water gauge. No detectable leaks greater than  $1 \times 10^{-6}$  ml/sec.
- LCD display provides real time monitoring of volume dilution rates in cubic feet per minute (CFM), air changes/minute (ACM), main chamber pressure (inches of water), and transfer chamber in inches of mercury and mBar.
- Large viewing area, 36.0" w x 27.6" high (91 x 70 cm) provides maximum visibility. Viewing window is 3/8" thick, laminated safety glass. Double glove boxes have two viewing areas.
- Space-saving inner and outer transfer chamber doors that pivot upward, are counterbalanced and equipped with quick-latches.
- Interior right-hand side wall-mounted electrical receptacle with 10 amp maximum (100/115 volt models) or 10 amp maximum (230 volt models) circuit load. North America models are duplexes. Double gloves boxes have an additional centrally-mounted interior duplex receptacle.
- Two internal valves to convert the glove box from a flow-through filtered box to an inert atmosphere glove box.
- Pair of neoprene gloves, 0.015" thick, 30" long, size 9  $\frac{3}{4}$ .

- Two 8" ID, epoxy-coated aluminum double-grooved glove ports mounted 17" apart, with neoprene gaskets.
- Two 25-watt fluorescent lights.
- Dry-powder epoxy-coated, 18 and 20 gauge steel exterior panels.

### **Filtered Glove Box Features**

- Particulate containment <20 nanograms per cubic meter as confirmed by SafeBridge Consultants, incorporated.
- Fast "clean up time." 0.05 ppm average tracer gas levels or less detected during perimeter scan testing (surpasses ASHRAE 110 standards) after 5 minute dilution.
- Airborne particulate cleanliness (measured under positive and negative pressures per ISO 14544-1 test method) exceeds ISO Class 5 conditions (equivalent to Class 100) and achieves ISO Class 4 conditions.
- Inlet and outlet particulate (HEPA or ULPA) filters to prevent contaminants from entering or leaving the glove box chamber.
- Test port for challenging HEPA or ULPA filter integrity.
- True Bag-In/Bag-Out Filter Disposal System for safe filter removal and replacement.
- Built-in blower with speed control capable of airflow from 15 CFM to 85 CFM depending on voltage and frequency.

### **Controlled Atmosphere Glove Box Features**

- Exceed Class I atmosphere containment conditions for oxygen permeation <1.67 ppm/min per ISO 10648-2 test method.
- Oxygen permeation <0.3 ppm/min (fiberglass-lined models) and <0.15 ppm/min (stainless steel-lined models) per ISO 10648-2.
- Four manual valves – two on the main chamber and

added control. With 3/8" compression fittings.

- Automatic control of the main chamber pressure (-5 to +5 inches of water gauge), main chamber evacuation and filling cycles (up to 499 cycles), and transfer chamber evacuation and filling cycles (up to 199 cycles).
- Regulation of vacuum/pressure between -5 and +5 inches of water gauge in the main chamber and between 0 and -29.5 inches of mercury in the transfer chamber.
- Mutable, audible alarm that sounds when pressure/vacuum level is outside set limits.
- Three-position foot pedal (increase gas/fill, off, evacuate/decrease gas).
- Input/output port for optional AtmosPure™ Re-Gen Gas Purifier.
- Factory-installed, rear-mounted, low profile stainless steel pressure relief bubbler at 6 inches of water gauge.
- Two rear-mounted inlet and outlet 3/4" OD compression fittings for easy connection to optional AtmosPure™ Re-Gen Gas Purifier or other accessory drying train.

## Options

- Double wide models with four glove ports for two operators
- International electrical configurations
- Chemical resistant, one-piece molded fiberglass liner or type 304 stainless steel liner
- - Inlet and outlet 99.99% efficient HEPA (fiberglass-lined models) or 99.999% efficient ULPA (stainless steel-lined models) filters

## Required Accessories

- Adjustable Height Base Stand or Stationary Base Stand
- Vacuum source
- Inert gas for filling

[Protector Double Stainless Steel Combination Glove Box](#)



**Catalog # 5080162**

**Region:** U.S. and Canada  
**Filter Type:** ULPA  
**Interior Working Width:** 81.8"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Four  
**Power Cord & Plug:** North America, 100-115 Volts  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

[Protector Double Stainless Steel Combination Glove Box](#)



**Catalog # 5080167**

**Region:** International  
**Filter Type:** ULPA  
**Interior Working Width:** 81.8"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Four  
**Power Cord & Plug:** British (UK)  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

[Protector Double Stainless Steel Combination Glove Box](#)



**Catalog # 5080172**

**Region:** International  
**Filter Type:** ULPA  
**Interior Working Width:** 81.8"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Four  
**Power Cord & Plug:** Schuko  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination

[Protector Double Stainless Steel Combination Glove Box](#)



**Catalog # 5080177**

**Region:** International  
**Filter Type:** ULPA  
**Interior Working Width:** 81.8"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Four  
**Power Cord & Plug:** China/Australia  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials

[Protector Double Stainless Steel Combination Glove Box](#)



**Catalog # 5080182**

**Region:** U.S. and Canada

**Filter Type:** ULPA

**Interior Working Width:** 81.8"

**Liner Material:** Stainless Steel

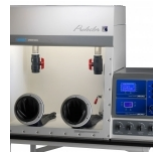
**Number of Glove Ports:** Four

**Power Cord & Plug:** North America, 208-230 Volts

**Primary Application:** Atmosphere-sensitive materials, Hazardous materials

**Product Subcategory:** Combination Glove Box

[Protector Fiberglass Combination Glove Box](#)



**Catalog # 5080060**

**Region:** U.S. and Canada

**Filter Type:** HEPA

**Interior Working Width:** 35.5"

**Liner Material:** Fiberglass

**Number of Glove Ports:** Two

**Power Cord & Plug:** North America 100-115 Volts

**Primary Application:** Atmosphere-sensitive materials, Hazardous materials

**Product Subcategory:** Combination Glove Box

[Protector Fiberglass Combination Glove Box](#)



**Catalog # 5080065**

**Region:** International

**Filter Type:** HEPA

**Interior Working Width:** 35.5"

**Liner Material:** Fiberglass

**Number of Glove Ports:** Two

**Power Cord & Plug:** British (UK)

**Primary Application:** Atmosphere-sensitive materials, Hazardous materials

**Product Subcategory:** Combination Glove Box

[Protector Fiberglass Combination Glove Box](#)



**Catalog # 5080070**

**Region:** International

**Filter Type:** HEPA

**Interior Working Width:** 35.5"

**Liner Material:** Fiberglass

**Number of Glove Ports:** Two

**Power Cord & Plug:** Schuko

**Primary Application:** Atmosphere-sensitive materials, Hazardous materials

**Product Subcategory:** Combination Glove Box

[Protector Fiberglass Combination Glove Box](#)



**Catalog # 5080075**

**Region:** International

**Filter Type:** HEPA

[Protector Fiberglass Combination Glove Box](#)



**Catalog # 5080080**

**Region:** U.S. and Canada

**Filter Type:** HEPA

**Number of Glove Ports:** Two  
**Power Cord & Plug:**  
**Plug:** China/Australia  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

[Protector Stainless Steel](#)  
[Combination Glove Box](#)



**Catalog #** 5080160

**Region:** U.S. and Canada  
**Filter Type:** ULPA  
**Interior Working Width:** 35.5"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Two  
**Power Cord & Plug:** North America, 100-115 Volts  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

**Number of Glove Ports:** Two  
**Power Cord & Plug:** North America 208-230 Volts  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

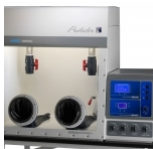
[Protector Stainless Steel](#)  
[Combination Glove Box](#)



**Catalog #** 5080165

**Region:** International  
**Filter Type:** ULPA  
**Interior Working Width:** 35.5"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Two  
**Power Cord & Plug:** British (UK)  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

[Protector Stainless Steel](#)  
[Combination Glove Box](#)



**Catalog #** 5080170

**Region:** International  
**Filter Type:** ULPA  
**Interior Working Width:** 35.5"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Two  
**Power Cord & Plug:** Schuko  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

[Protector Stainless Steel](#)  
[Combination Glove Box](#)



**Catalog #** 5080175

**Region:** International  
**Filter Type:** ULPA  
**Interior Working Width:** 35.5"  
**Liner Material:** Stainless Steel  
**Number of Glove Ports:** Two  
**Power Cord & Plug:** China/Australia  
**Primary Application:** Atmosphere-sensitive materials, Hazardous materials  
**Product Subcategory:** Combination Glove Box

## Combination Glove Box



**Catalog # 5080180**

**Region:** U.S. and Canada

**Filter Type:** ULPA

**Interior Working Width:** 35.5"

**Liner Material:** Stainless Steel

**Number of Glove Ports:** Two

**Power Cord & Plug:** North America,  
208-230 Volts

**Primary Application:** Atmosphere-  
sensitive materials, Hazardous  
materials

**Product Subcategory:** Combination  
Glove Box

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