Pharmaceutical Compounding Safety Solutions

Pharmaceutical Compounding Safety Solutions offer protection to pharmacists and pharmacy students or the product while compounding, measuring, and weighing prescription drugs. Our ductless systems, like Powder Containment Hoods, protect the operator and environment from harmful particles. On the other hand, our IV Hoods or Portable Clean Rooms create a reduced particulate environment to protect the product from contamination during preparation. Without these vital engineering safety controls, the operator and patient are put at risk. Consistent inhalation of pharmaceutical powders can lead to lasting health effects to the pharmacist, while contaminated IV bags can cause immediate harm to the patient. Pharmacists should be familiar with USP 800 guidelines for hazardous drug compounding, which specifies IV preparation best practices as following aseptic techniques and utilizing a vertical laminar flow hood that furnishes ISO Class 5 clean air. IV Hoods provide a reduced particulate environment by creating an ISO Class 5 clean room with a positive pressure air flow pattern.

Benefits of a Ductless System

Most of our pharmaceutical compounding safety solutions (Powder Containment Hoods, Portable Powder Extraction units, and Pharmaceutical HD Compounding Containment Hoods) use ductless technology to protect the operator from inhaling harmful contaminants. Ductless systems offer numerous benefits over conventional ducted fume hoods:

• Environmentally friendly - Capture contaminants in filtration system rather than releasing outside of the building.
• Energy efficient - No required makeup air or heating/cooling costs of that air.
• Quick and easy installation - No external ductwork installation and expensive building modifications.
• Low maintenance costs - Only expense is replacing saturated filters instead of unclogging ductwork.
• Mobility - Easy to relocate due to simple installation.
• Solution for hard-to-duct areas - Such as center rooms, bottom levels of multi-storied buildings, and buildings that can not be updated to accommodate ductwork.

Powder Containment Hoods

Powder Containment Hoods, or ductless fume hoods protect the operator from inhaling harmful airborne contaminants and particles creating during compounding processes. The enclosed hood utilizes negative pressure to pull particles away from the operator into the filtration system. Then the system releases filtered air back into the surrounding room. Using ductless technology to contain powder, removes the requirement for external ductwork and makeup air.

Key Features:

• Variety of sizes and materials
• Reliable, low maintenance
• Ductless system
• Available filters: ASHRAE, HEPA, ULPA

Portable Powder Extraction - Winged Sentry Units

For a space constraint workspaces, Winged Sentry units offer a portable powder extraction solution. The wings can be adjusted to help direct powder and particulate toward the unit’s inlet and away from the operator. For added protection, the Winged Sentry can come with a lid to further aid powder containment.

Key Features:

• Infinitely adjustable wing flaps
• Highly portable and lightweight
• Optional lid
• Ductless system
• Available filters: ASHRAE, HEPA, ULPA

Pharmaceutical HD Compounding Containment Hoods - High-Efficiency Ductless Fume Hoods

For nonsterile hazardous drug compounding, facilities need to take extra precautions to follow the updated USP 800 guidelines. Sentry Air created the High Efficiency Ductless Fume Hoods with redundant HEPA filters to meet USP 800 guidelines (nonsterile only) to protect the operator, the environment and patient safety from hazardous drug exposure.

Key Features:

• Meets USP 800 guidelines for nonsterile HD compounding for containment primary engineering control
• Filters: redundant HEPA Filters
• Ductless system

IV Hood Portable Clean Rooms

To protect the product and patient, medical professionals must follow best practices for IV preparation. USP 797 specifies IV preparation best practices as following aseptic techniques and utilizing a vertical laminar flow hood that furnishes ISO Class 5 clean air. IV Hoods provide a reduced particulate environment by creating an ISO Class 5 clean room with a positive pressure air flow pattern.

Key Features:

• ISO Class 5 clean room hood
• Stainless steel IV bag rod (7 or 10 hooks)
• Ductless system
• Available filters: HEPA and ULPA

SAS
21221 FM 529 Rd, Cypress, TX 77433
1.800.799.4609 • sales@sentryair.com
www.sentryair.com
### How does a Powder Containment Hood work?

1. **Ambient Air**
2. **Pre-Filter** processes the air and captures some of the particles.
3. **Main Filter** treats the air removing most of the particulates. Efficiency depends on the filter type and application. Main filter choices include HEPA, ULPA, and ASHRAE filters.
4. The system releases the filtered air back into the room eliminating the need for ductwork or makeup air, as well as protecting the environment from exposure by capturing particulate in the filter.

### How does a High-Efficiency Fume Hood work?

1. A powerful fan draws ambient air into the hood where it mixes with powder and particulates emitted from the nonsterile HD compounding application performed within the hood.
2. The **Main HEPA filter** treats the air removing most of the particulates. HEPA filters offer up to 99.97% efficiency on particles down to 0.3 microns.
3. The **Second or Redundant HEPA Filter** removes the remaining particles providing added protection against hazardous drug exposure. The redundant HEPA filter enables this hood to be USP 800 compliant.
4. The system releases the filtered air back into the room eliminating the need for ductwork or makeup air.

### How does an IV Hood Portable Clean Room work?

1. A powerful fan pulls dirty ambient room air into the filtration system.
2. A **MERV 8 Pre-Filter** processes the air and captures some of the particles.
3. The air passes through a final **HEPA or ULPA Filter**, removing up to 99.97% of particles as small as 0.3 microns (HEPA) or up to 99.9995% of particles as small as 0.12 microns (ULPA) from the ambient air.
4. The system discharges the filtered air into the work area of the hood in a vertical laminar flow pattern, creating a reduced particulate environment suitable for IV bag preparations.

### How does a Winged Sentry Unit work?

1. A powerful fan draws ambient air and compounding particles into the filtration system.
2. The **Pre-Filter** processes the air and captures some of the particles.
3. The **Main Filter** treats the air removing most of the particulates. Efficiency depends on the filter type and application. Main filter choices include HEPA, ULPA, and ASHRAE filters.
4. The system releases the filtered air back into the room eliminating the need for ductwork or makeup air.
Powder Containment Hoods - Ductless Fume Hoods

Powder Containment Hoods protect the operator and environment from harmful powders and particulate generated from compounding applications performed within the hood. This negative pressure containment hood pulls particulate away from the operator’s breathing zone to prevent possible health effects from exposure. The Powder Containment Hood uses a powerful fan to direct fumes and particulate from within the hood into the filter chamber. The filter selected depends on the application. Filter media choices include HEPA (up to 99.97% efficient on particles 0.3 microns and larger), ASHRAE (up to 95% efficient on particles 0.5 microns and larger), and ULPA filter media (up to 99.9995% efficient on particles 0.12 microns and larger). Once filtered, the system releases the air back into the surrounding room. The recirculating pattern created from this ductless system removes the requirement for external ductwork and makeup air. By filtering the air instead of ducting it, powder containment hoods offer environmental protection in addition to operator, employee, and nearby patients.

These hoods come in a variety of sizes allowing for a containment solution for any size compounding facility. Powder Containment Hoods can provide an effective and economical solution for pharmacies in need of a high-quality respiratory engineering control. Transparent hood material and other custom modifications are available at extra cost.

Product Features
- Quiet operation
- No vibrations
- Long filter life
- Simple “no tool” filter change
- Portable & lightweight
- Atractive appearance
- Reliable, low maintenance operation
- Standard Sizes: 18”, 24”, 30”, 40”, 50”, 60”, 70”
- Includes: variable speed controller (115V only), velometer,
- Optional: clear anti-static vinyl curtains, Magnehelic Gage, LED light, hour counter, spill tray, laminar flow insert

Filtration Options
- HEPA (up to 99.97% efficiency on particles down to 0.3 microns)
- ASHRAE (up to 95% efficiency on particles down to 0.5 microns)
- ULPA (up to 99.9995% efficiency on particles down to 0.12 microns)

Product Specifications

<table>
<thead>
<tr>
<th>18” Wide</th>
<th>24” Wide</th>
<th>24” Wide - High Flow</th>
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<tbody>
<tr>
<td>SS-218-DCH</td>
<td>SS-224-DCH</td>
<td>SS-324-DCH</td>
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<td>Outer Hood Dimensions</td>
<td>Outer Hood Dimensions</td>
<td>Outer Hood Dimensions</td>
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<tr>
<td>18.5” D x 20” W x 19” H</td>
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<td>48 - 100 CFM</td>
<td>50 - 350 CFM</td>
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<td>Inlet Velocities</td>
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<td>SS-330-DCH</td>
<td>SS-340-DCH</td>
<td>SS-350-DCH</td>
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<td>Outer Hood Dimensions</td>
<td>Outer Hood Dimensions</td>
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<td>Inner Hood Dimensions</td>
<td>Inner Hood Dimensions</td>
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<td>Air Volume</td>
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<td>50 - 350 CFM</td>
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<td>Inlet Velocities</td>
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<td>50 - 350 CFM</td>
<td>50 - 350 CFM</td>
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<td>Inlet Velocities</td>
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<tr>
<td>100 FPM (HEPA)</td>
<td>100 FPM (HEPA)</td>
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Portable Powder Extraction Units - Winged Sentry

The **Winged Sentry** units provide a benchtop powder containment solution through a unique and customized design that includes adjustable "wing flaps" to assist in directing powder and particulate into the unit's inlet and filter chamber. The filter chamber contains appropriate filtration media based on the application being performed by the operator. The best suited filters for compounding includes HEPA (up to 99.97% efficient on particles 0.3 microns and larger), ASHRAE (up to 96% efficient on particles 0.5 microns and larger), and ULPA filtration media (up to 99.9995% efficient on particles 0.12 microns and larger). Once air has been filtered, the system releases it into the surrounding room creating a recirculating airflow pattern. By utilizing a ductless powder extraction unit, the facility will not need to install expensive external ductwork or provide makeup air.

The **Winged Sentry** comes in two different air volumes suited for a variety of compounding applications. This space conscious and lightweight design enables this unit to easily fit in a small workspace and be easily moved when necessary. The adjustable wing flaps can be moved to better suit the application or flat to save space. An optional hinged lid provides a hood-like enclosure to aid in containment and extraction of compounding powder.

**Product Features**
- Infinitely adjustable "wings flaps"
- Highly portable and lightweight
- Reliable, low maintenance options
- Quiet operation and sturdy construction
- Long filter life with simple "no tool" filter change
- Optional: Variable speed controller, velometer, and hinged lid

**Product Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Work Area Dimensions</th>
<th>Air Volume</th>
<th>Inlet Velocities</th>
<th>Filtration</th>
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<tr>
<td>SS-200-WS</td>
<td>9&quot; L x 21 &quot; W x 8&quot; H</td>
<td>up to 100 CFM</td>
<td>153 FPM</td>
<td>Redundant HEPA filters (up to 99.97% efficient on particles as small as 0.3 microns)</td>
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<tr>
<td>SS-200-WSL</td>
<td>13.5&quot; L x 28 &quot; W x 13&quot; H</td>
<td>50 - 350 CFM</td>
<td>115 FPM</td>
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<tr>
<td>SS-300-WS</td>
<td>9&quot; L x 21 &quot; W x 8&quot; H</td>
<td>50 - 255 CFM, low to high (with two stacked HEPA filters)</td>
<td>92 FPM</td>
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<tr>
<td>SS-300-WSL</td>
<td>13.5&quot; L x 28 &quot; W x 13&quot; H</td>
<td>50 - 350 CFM</td>
<td>92 FPM</td>
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HD Compounding Hoods - High-Efficiency Ductless Fume Hoods

High-efficiency ductless fume hoods utilize redundant HEPA filters to capture and remove particles produced during nonsterile hazardous drug compounding. This containment ventilated enclosure provides operator and environmental protection from particles, aerosols, and gases from HDs. The system's powerful fan pulls powders and particles into the filtration system and releases filtered air into the surrounding room. The redundant HEPA filters meet requirements for a **USP 800 compliant** containment primary engineering control for nonsterile HD preparations.

By utilizing a ductless system instead of external ventilation, the high-efficiency ductless fume hood enables added environmental protections and removes the requirement of external ductwork for the containment hood. Compliance for **USP 800** can be a very costly expenditure and the high-efficiency ductless fume hood can help your facility save money on the primary containment device. This hood offers easy installation and portability to seamlessly transition your facility’s compounding device to be **USP 800 compliant**. Please note that the high-efficiency ductless fume hoods are compliant for nonsterile HD compounding only and not for sterile preparations.

**Product Features**
- Quiet operation, long filter life, and quick filter change.
- Reliable and low maintenance operation.
- Includes: variable speed controller (115V only), fluorescent light, velometer, clear anti-static vinyl curtains.
- Optional: remote control box, hour counter, spill tray, outlet plenum.

**Product Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Outer Hood Dimensions</th>
<th>Inner Hood Dimensions</th>
<th>Access Area</th>
<th>Air Volume</th>
<th>Inlet Velocities</th>
<th>Filtration</th>
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<tr>
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<td>24&quot; D x 32&quot; W x 25&quot; H</td>
<td>23.5&quot; D x 30&quot; W x 24&quot; H</td>
<td>8&quot; x 30&quot;</td>
<td>50 to 255 CFM</td>
<td>153 FPM</td>
<td>Redundant HEPA filters (up to 99.97% efficient on particles as small as 0.3 microns)</td>
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<tr>
<td>SS-340-HEMS</td>
<td>24&quot; D x 42&quot; W x 25&quot; H</td>
<td>23.5&quot; D x 40&quot; W x 24&quot; H</td>
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<td>115 FPM</td>
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<tr>
<td>SS-350-HEMS</td>
<td>24&quot; D x 52&quot; W x 25&quot; H</td>
<td>23.5&quot; D x 50&quot; W x 24&quot; H</td>
<td>8&quot; x 50&quot;</td>
<td></td>
<td>92 FPM</td>
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Positive Pressure Clean Room Hood

IV Hoods, or portable clean room hoods, provide a positive pressure enclosure to protect the product from cross-contamination of airborne particulate. IV Hoods supply reduced particulate air to the work space creating an ISO Class 5 cleanroom environment suitable for IV Bag preparation. Healthcare professionals should prepare IV bags in a sterile environment in order to produce the highest quality product as well as safeguard patients’ health and safety.

The IV Hood creates a clean work enclosure for IV bag preparation through a positive pressure or vertical laminar flow pattern. A vertical laminar flow pattern forms when the system draws in air to ambient air through the dual stage filtration system supplying clean air to IV Hood. The dual stage filtration system contains a pre-filter and choice of the main filter – HEPA filter which offers up to 99.97% efficiency on particles down to 0.3 microns or ULPA filter which maintains up to 99.995% efficiency on particles down to 0.12 microns. The IV Hood features a stainless steel IV bag rod for convenient and sterile temporary storage.

Product Features

- Includes: clear anti-static vinyl curtains, LED light, and stainless steel IV bag rod (7 hooks)
- Highly portable and lightweight
- Quiet operation
- Simple, quick “no tool” filter change
- Reliable and low maintenance operation
- Long filter life
- Standard Sizes: 18”, 24”, 30”, and 40”
- Optional: variable speed controller (115V only), hour counter, and removable spill tray

Product Specifications

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<tr>
<th>Filter Size</th>
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<th>Air Volume</th>
<th>Filtration</th>
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<td>24” x 26” x 25”</td>
<td>23.5” x 24” x 24”</td>
<td>8” x 24”</td>
<td>80 CFM FPM</td>
<td>HEPA 8” Pre-Filter and HEPA Filter: up to 350 CFM</td>
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<td>SS-330-IV</td>
<td>24” x 32” x 25”</td>
<td>23.5” x 30” x 24”</td>
<td>8” x 30”</td>
<td>65 CFM FPM</td>
<td>HEPA (99.97% efficiency on particles down to 0.3 microns) or ULPA filters (up to 99.995% efficiency on particles down to 0.12 microns)</td>
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<td>SS-340-IV</td>
<td>24” x 42” x 25”</td>
<td>23.5” x 40” x 24”</td>
<td>8” x 40”</td>
<td>80 CFM FPM</td>
<td>HEPA 8” Pre-Filter and HEPA Filter: up to 350 CFM</td>
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</table>

About Sentry Air Systems

Founded in 1983, Sentry Air Systems designs and manufactures high quality air purification systems in order to provide engineering control devices for clean air for a variety of applications. Our patented line of quiet, compact and durable air cleaners offers simple and effective solutions to control and extract harmful fumes and particulates in the workplace environment.

Our diverse line of fume extractors includes floor, benchtop, mounted, and portable units as well as solutions for mist collection, portable clean rooms, and ductless/ducted fume hoods. Our products can be utilized in various applications including but not limited to: welding, soldering, manufacturing, laboratory and pharmaceutical operations. Most products have the option of high quality filters including ULPA, HEPA, ASHRAE, Carbon, Acid Gas and other specialty blended filters. At Sentry Air, we stringenty test our filter media against a variety of chemicals and use only flame retardant materials to improve safety.