

Safedevelop™



34S



Fingerprint Development Chamber

- Detect Quality Latent Prints on Porous Surfaces with Reproducible Results



SD-34S



Air Science®

"The World's Most Extensive Selection of Containment Solutions."



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INTRODUCTION

Safedvelop™ Fingerprint Development Chambers are designed to accelerate the processing of latent fingerprints on porous surfaces using DFO, Ninhydrin and other development chemicals within a controlled environment for optimum effectiveness where moisture, temperature and time are critical factors.

Safedvelop Fingerprint Development Chamber controls all functions from start-to-finish, permitting the investigator to initiate an unattended cycle, establish the proper development intensity and duration, and to return upon completion to collect results. The resulting prints will fluoresce with the use of various lasers and light sources.



Deep into its second generation, Air Science embraces the diversity and cultural heritage of the founders and co-workers who are continuing a tradition of excellence. Demonstrating a commitment to adaptation, inclusion, and quality output from a United States-based company with a domestic and global reach.

APPLICATIONS

Using innovative filtration technology, the Safedvelop Fingerprint Development Chamber creates a safe work environment over the widest range of applications in the industry.

State and Federal Crime Laboratories \ Crime Scene Investigation \ Law Enforcement Agencies \ Medical Examiners' Programs \ Criminal Justice Education

KEY FEATURES

- The professionally designed automatic development chamber eliminates reliance on do-it-yourself systems that lack user-safety allowances and controls needed for repeatable results.
- To change between profiles requires only the press of a few buttons on an easy to use LED display.
- The chamber features rapid condition recovery following a door opening.
- The wide temperature and humidity range allows fingerprints to be processed in a matter of minutes - not days like some conventional methods.
- The steam generator produces humidity by a sealed, automatic, steam injection system, ensuring only vaporized water enters the sample chamber to eliminate the possibility of contaminating samples with water droplets.
- The chamber's generous working area and flexible shelving and rod system enable large batches of operational material to be processed quickly and easily.

SAFEDEVELOP TECHNOLOGY

DFO and Ninhydrin fuming are the most effective techniques for detecting latent prints on paper and similar porous surfaces. Safedvelop performs well with DFO and Ninhydrin, however is not limited in scope and can also utilize other chemical developers, allowing illumination with various lasers and light sources to make the resulting prints fluoresce.

Development Chamber Process Table on [page 6](#).



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Safedvelop SD-34S with optional Vent-Box

DESIGN FEATURES

- A. Door Key:** Chamber access keys prevent unauthorized removal of evidence or accidental operator exposure to chemical fumes or high heat.
- B. Control Panel:** Front-mounted control panel with electronic On/Off switch, lights, temperature and humidity controller, cycle complete lamp and low water alarm lamp.
- C. Glass Door:** Multi-pane, heated glass door minimizes condensation and activates automatically whenever humidity is used.
- D. Low Water Light:** Low water level warning light notifies the operator when to add water.
- E. Push-Pull™ Shelving:** Perforated Push-Pull™ shelves can slide in or out with one hand.
- F. Lighting:** Dual LED light strips on the door provide a large illumination area to watch fingerprints being developed.
- G. Hanging Rods:** Removable stainless steel hanging rods with clips.
- H. Water Carboy:** Side mounted, 1 gallon (4 liter). Easy to visualize water levels and quick release coupling for simple removal and filling.
- I. Chamber:** Corrosion-resistant insulated internal chamber.
- J. Levelling:** Adjustable leveling feet.
- K. Stand:** Optional mobile cart with locking casters.
- L. Modular Filtration:** Optional Vent-Box™ filtration unit available with Multiplex™ filtration technology, a unique configuration that includes a pre-filter and main carbon filter. Optional HEPA/ULPA filtration is also available.

ADDITIONAL FEATURES

Quality Door Construction: The large viewing area offers easy observation of critical samples along with dual vertical LED lights. The multi-pane, heated glass door minimizes condensation.

Steam Generator: The Air Science® steam generator adds heat while humidifying, providing for quick ramp-up and rapid condition recovery after door openings. Advanced humidity sensors with built-in temperature compensation provide accurate readings at all temperatures.

Preset Profiles: Safedvelop cabinets are constructed of polypropylene that does not absorb liquids, is easily cleaned with household detergents and can be sprayed with a 10% bleach solution to eliminate biological contaminants.

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Each Air Science SafeDevelop Fingerprint Development Chamber includes features expressed through sound design and certified quality construction. Options and accessories add functional performance to meet specific applications.

PERFORMANCE

The Air Science [Multiplex Filtration System](#) offers a range of options for high performance protection.

- Multiplex filter configuration permits a customized combination of filter media for a broad range of chemical families and biological agents if required.

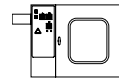
DESIGN

Professional quality Air Science SafeDevelop Fingerprint Development Chambers comply with current technical and safety regulations. The cabinet frame and work surfaces, comprised of industrial components, are durable and chemically resistant.

The Air Science filter assembly is easy to access, easy to change, plus a unique filter clamping design eliminates bypass leakage outside the cabinet.

RELIABILITY

Internal systems are isolated from fumes, extending product life.



345

SELECTION

Fingerprint development chambers are available in 2 electrically specific sizes, totaling 2 standard models.



SafeDevelop SD-345 with optional Vent-Box



FSA/Autocal Control Panel with On/Off switch for unit, lights, temperature and humidity controller, cycle complete lamp and low water alarm lamp. Also incorporates profile select and emergency stop switches to ensure complete unit control.

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FILTRATION

At the heart of the optional Vent-Box product line is innovative filtration technology. **The Multiplex Filtration System** consists of a pre-filter, main activated carbon or HEPA/ULPA filter and safety activated carbon or HEPA/ULPA filter. The system permits a customized combination of filter media and configuration for chemical and physical adsorption specific to each application need.

The Air Science **carbon filtration technique** is based on enhanced, activated carbon particle formulations from specially selected, naturally occurring raw material that is superior to wood or other organic sources. The carbon is treated to attain the proper porosity and aggregate surface area and to react with several ranges of aerosolized chemicals moved through the filter by an air handling blower.

View available filters and descriptions on [page 8](#).

FILTER CONFIGURATION

The Multiplex feature permits one or more filtration options to be combined to meet a wider range of multiple-use applications.

The vented chemical storage cabinet can be equipped with a single activated carbon main filter or with a stacked configuration which combines two main filters, each activated to adsorb one or more specific vapors or family of vapors. For safety against particulates, an optional HEPA or ULPA can also be added.

The carbon filter is sized to fit the specified product model number and configured to optimize airflow across 100% of the filter surface area. The self-contained assembly maximizes filter efficiency, prolongs filter life, optimizes diffusion and saturation and improves user safety.

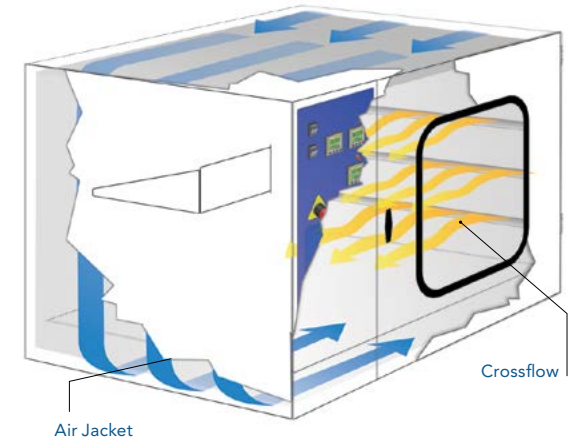
P. Electrostatic Pre-Filter: Protects the main filters from aerosols, mists, dust and particulates.

C. Activated Carbon Main Filter: A single, blended or stacked filter configuration.

H. HEPA/ULPA Filter, Optional: Both HEPA and ULPA filters use micro-glass fiber media designed to capture fine particles and biologicals. Both filters can capture particles smaller than the micron size for which they are tested. HEPA and ULPA filter efficiencies are 99.995% at 0.3 microns and 99.9995% at 0.12 microns respectively.

AIRFLOW

The optional Vent-Box filtration unit maintains a constant face velocity in compliance with USA and international standards for safety and performance, creating uniform conditions within the chamber. Contaminated air is pulled through the Multiplex Filtration System; clean air is returned to the room.



MULTIPLY FILTRATION SYSTEM, SUMMARY

Application	Chemical	Powder/ Biological	Chemical & Powder	Chemical Within Cleanroom
Secondary/ Stacked Filter, Optional	C	H	C	H
Primary Filter	C	H	H	C
Pre-Filter	P	P	P	P

The system can be configured for the capture of acids, bases and particulates, such as biological aerosols, when paired with HEPA or ULPA filters.



Filter disposal services are available in selected markets providing responsible destruction or recycling of used saturated filters in authorized facilities.

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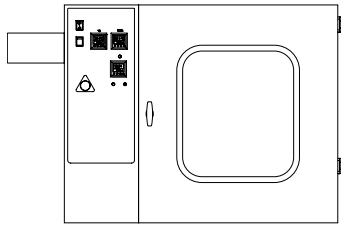
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PROCESS TYPE	DEVELOPMENT CHAMBER PROCESS TABLE - PROFILE SET UP CHARACTERISTIC						
	Evidence Preparation	Temp C°	RH %	Time (min)	Print Results	Photography	Unit Profile
Ninhydrin (2,2-Dihydroxyindane-1, 3-dione)	Follow proper safety precautions. Using a fume hood, apply chemical to specimen (spray, dip, brush). Completely dry before processing in chamber.	80	65	3	Purple. Repeat process as needed.	530-555 nm light source with no filter	Ninhydrin
DFO (1,8-Diazafluoren-9-one)	Follow proper safety precautions. Using a fume hood, apply chemical to specimen (spray, dip) for 5 seconds. Completely dry before processing in chamber.	100	–	20	Yellow.	495-550 nm light source with orange filter	DFO
Nickel Nitrate	Apply only after processing specimen with Ninhydrin. Follow proper safety precautions. Using a fume hood, apply chemical to specimen (spray). Completely dry before processing in chamber.	80	65	20	Ridge detail enhancement.	Green filter or 530 nm light source with no filter	Ninhydrin
5-MTN (5-Methylthioninhydrin)	Follow proper safety precautions. Using a fume hood, apply chemical to specimen (spray, dip) for 5 seconds. Completely dry before processing in chamber.	80	65	3	Strong purple, repeat if needed or try with Nickel Nitrate. Repeat process as needed.	Green filter	Ninhydrin
1,2-Indanedione	Follow proper safety precautions. Using a fume hood, apply chemical to specimen (spray, dip, wash). Completely dry before processing in chamber.	100	–	10	Pale pink. Repeat process as needed.	515 nm light source with orange filter	DFO
Zinc Chloride	Apply only after using Ninhydrin or 5-MTN to enhance prints. Follow proper safety precautions. Using a fume hood, apply chemical to specimen. Completely dry before processing in chamber.	80	65	20-40	Orange if prints previously treated with Ninhydrin. Red if prints previously treated with 5-MTN. Repeat process as needed.	Orange filter	Ninhydrin

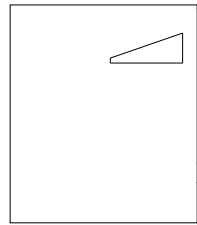
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SD-34S with Optional Vent-Box



Sideview



MODEL	DIMENSIONS				WEIGHT (LBS/KG)	
	Internal Height	Work Space (W x D x H)	External (W x D x H)	Shipping (W x D x H)	Net	Ship
Safedvelop						
SD-34S	19.5" / 495 mm	18.25" x 20.5" x 19.6" / 464 x 521 x 495 mm	36.25" x 25.5" x 29.25" / 921 x 648 x 743 mm	40" x 48" x 45" / 1016 x 1219 x 1143 mm	200 / 91	245 / 111
SD-34S (with optional Vent-Box)	49" / 1245 mm	18.25" x 20.5" x 19.6" / 464 x 521 x 495 mm	36.25" x 25.5" x 42.25" / 921 x 648 x 1073 mm	40" x 48" x 63" / 1016 x 1016 x 1600 mm	232 / 105	279 / 127

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PRODUCT SPECIFICATIONS

Construction

Airflow	<... Crossflow. ...>
Controls	<... Programmable heat and humidity controllers. Lights On/Off. ...>
Electrical	<... 120V, 60Hz or 230V, 50Hz voltages available. Specify when ordering. ...>
Monitoring	<... Audio and visual, timer cycle complete, low water level. ...>
Lighting	<... LED. ...>
Temperature Range	<... Up to 100°C (depends on profile). ...>
Relative Humidity	<... Up to 65% RH (depends on profile). ...>
Shelves	<... 2 Push-Pull, perforated on sliding rails. ...>
Hanging Rods	<... 4 stainless steel rods with 8 clips. ...>
Alarms (Audio and Visual)	<... Timer Cycle Complete, Low Water Level. ...>
Water Bottle	<... Carboy, water fill bottle with cap, 1 gallon (4 liters). Universal side mount holder mounts on side or top of unit. Includes all tubes and quick release fittings. ...>

Specifications are subject to change without notice

FILTER SUMMARY*

Formula	Description
GP Plus!	The most widely used filter in the range, primarily for solvent, organic and alcohol removal.

*Other formulas may be available.

FILTER SPECIFICATIONS

Safedvelop Model

34S with Optional Vent-Box Only

Secondary/Stacked Filter, Optional*	(1)
Primary Filter*	(1)
Pre-Filter*	(1)

* For specific examples refer to Multiplex filtration system summary on [page 5](#).



Through our partner company [Filtco Filters](#), Air Science is a single source supplier of all pre-filters, carbon filters and HEPA/ULPA filters used in our products.

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OPTIONS & ACCESSORIES

Safedevelop Model		SD-34S
Vent-Box Filtration	Modular ductless filtration system. Utilizes the Multiplex carbon filtration system with a pre-filter and main filter. Optional HEPA/ULPA filters are also available.	VB-24
Heavy Duty Base Stand	Provides a lower storage half shelf; accommodates wheelchair access. Locking casters.	CART-30

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WARRANTY

This product is protected by the Air Science **Legacy Lifetime Warranty™** which starts on the date of shipment from our factory. This limited warranty is the result of thousands of successful Air Science production applications in pharmaceutical, laboratory, forensic, industrial and educational applications.

This warranty covers defects in materials and workmanship. Our liability under the Legacy Lifetime Warranty is, at our option, to repair or replace any defective parts of this equipment if you document that these parts were defective at the time we sold the product to you. Normal conditions apply.



For details visit the [Service section](#) of our website at www.airscience.com.

STANDARDS & COMPLIANCE

Quality Management Systems	ISO 9001 : 2015
Environment	ISO 14001: 2015 ENERGY STAR® Partner



120 6th Street \ Fort Myers, FL 33907
T. 239-489-0024 \ **Toll Free.** 800-306-0656 \ **F.** 800-306-0677
www.airscience.com

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