



Cytogard

Cytotoxic Drug Safety Cabinets



INTRODUCTION

Introducing the Cytogard Cytotoxic Drug Safety Cabinet. CGA Cytogard drug safety cabinets are designed and manufactured in Australia in three nominal widths – a 900mm, 1200mm and 1800mm – and fully comply with all requirements of Australian Standard AS2252.5.

Cytotoxic cabinets are necessary for operator and product protection, in addition to the safe guards provided by an effective air barrier and Clyde-Apac Microseal HEPA filter technology, Cytogard series is also equipped with a carbon filter to remove harmful vapours that may be released during the compounding process. Cytogard series are essential for the protection of personnel, product and the environment.

Choose Cytogard for a safer, more efficient, and compliant laboratory environment.

USER-FRIENDLY

Cytotoxic drug safety cabinets are defined in Australian Standard AS2252.5 as the primary barrier against exposure to aerosols that are produced in the preparation, manipulation and dispensing of cytotoxic drugs. Many of these drugs are known to be mutagens and are suspected of being carcinogens and teratogens. Recent work involving prions has proven that exposure may result in effects that are insidious and may not manifest themselves for some years. The requirements for protection involve the following:



- › Protection of cabinet users and other staff from exposure to aerosols or vapours which may be generated in the preparation, manipulation, and dispensing of cytotoxic drugs;
- › Protection of drug products, so that they may be prepared in an environment which is essentially free from particulate and biological contamination;
- › Protection of cabinet maintenance personnel from the residue of drug particles which can contaminate filters, fans and other mechanical components.

CONSTRUCTION

SAFETY AND COMFORT

User safety and comfort is paramount with all Clyde APAC manufactured Cytotoxic Drug Safety Cabinets. The comfortable, 180mm front working aperture on the Ultrasafe does not compromise safety or sample containment while significantly reducing noise level. All our cabinets have been tested at nominal airflow velocities for added security.

CABINET

Constructed in zinc anneal steel with joints welded using a gas shielded arc process. This method produces a robust, leak free housing that is able to withstand the rigours of transport and handling. The exterior is finished in a high-quality powder coat which has been developed for laboratory equipment.

WORK ZONE

Constructed in grade 304 stainless steel with 2B finish. Corners are radiused and crevice-free for ease of cleaning and all surfaces are carefully dressed to remove sharp edges. The removable work tray is designed to allow cleaning access to its underside without removing it from the cabinet.

A pneumatic mechanism opens and closes the viewing window without the need for external fasteners or catches. The window is self-supporting in the fully open position to facilitate cleaning and access for large items. Opening the window with the cabinet running automatically engages a boost mode for enhanced containment by activating a maximum exhaust airflow and the alarm systems.



CONSTRUCTION

FANS

Separate direct drive fans are provided for the exhaust and laminar flow HEPA filters. Fans are fitted with speed controllers to enable airflows to be maintained through filter life. The fan control circuits are interlocked so that the laminar flow system will not operate until the exhaust system has achieved a containment condition. Audible and visible alarms with rechargeable battery back-up signify any reduction in barrier containment or laminar airflow.

HEPA FILTERS

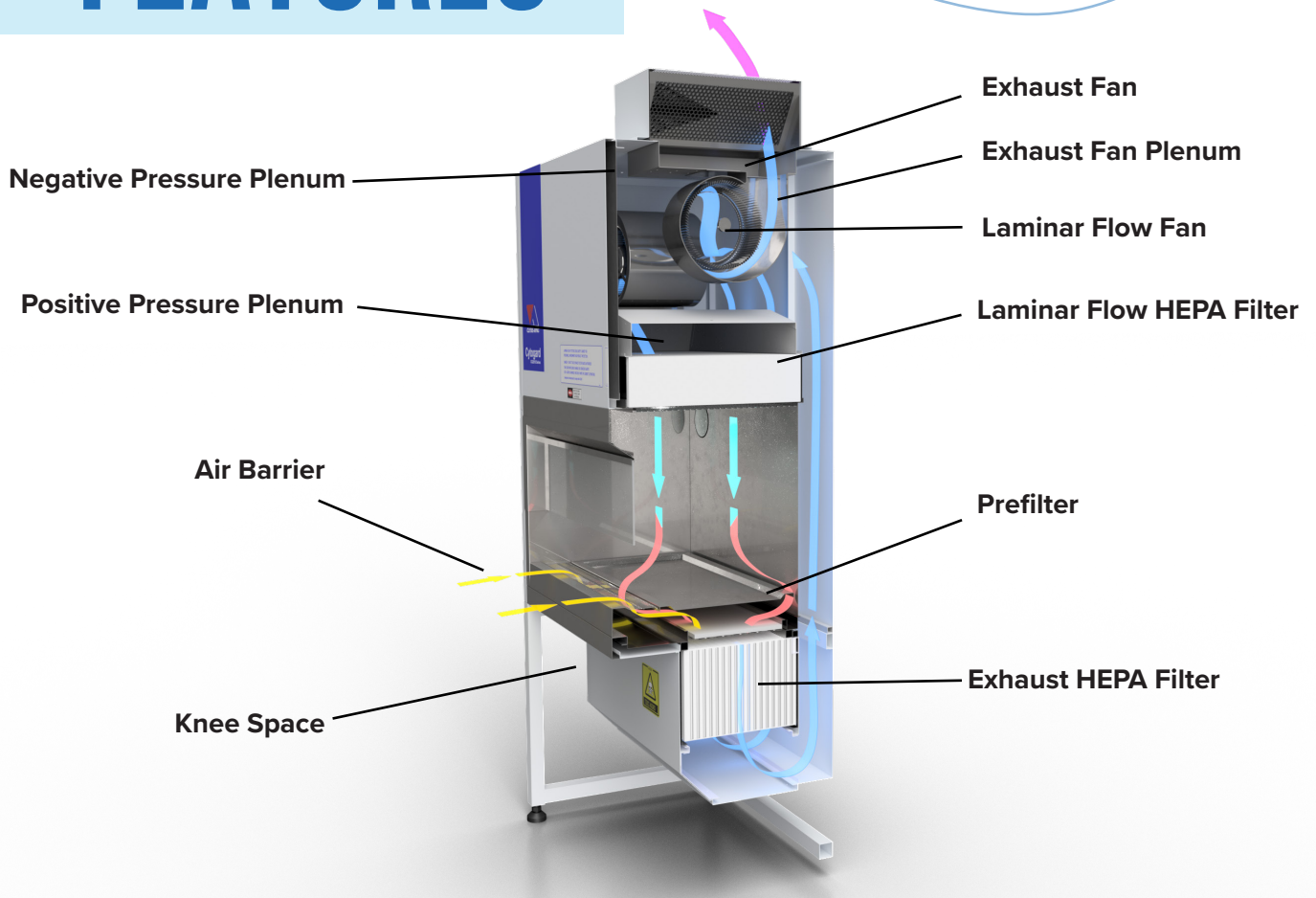
Clyde Apac Microseal™ HEPA filters, are manufactured to meet requirements of AS4260. Each filter is individually certified to be leak free in accordance with AS 1807.6. A manufacturer endorsed test label fitted with an extract of the test report is affixed to each filter. A prefilter extends the life of the exhaust HEPA filter and protects it from mechanical damage during cleaning of the work zone.

CUSTOMISABLE ADJUSTABLE BASE

Cytogard cabinets can also be supplied with a bespoke base to suit the cabinet. The base's height can be easily adjusted from 560 to 1210 mm with a simple button press. Quiet and safe motors ensure smooth operation even when the cabinet is in use. Customizable presets allow you to save your preferred heights for quick access. The control panel is designed for easy use, cleaning, and protection against splashes.



FEATURES



STANDARD FEATURES

- › Optima 2000™ prorammmable control and diagnostic system with digital display
- › Low voltage touch controls
- › Alarms and boost mode automatically engaged when viewing window is open
- › Boost mode selectable at control panel
- › Selectable post-use over-run timer
- › Hour meter to record operating time
- › Activated charcoal exhaust filter
- › Pneumatically assisted viewing window
- › Magnahelic gauge to monitor fan systems
- › Fully-sealed work opening cover for testing procedures
- › Comprehensive operation and maintenance manual

OPTIONAL FEATURES

- › Work area power outlet
- › Ultra-violet germicidal lamp
- › Gas tap (solenoid-interlocked)
- › Service taps (vac, air, CO₂, etc.)
- › Hanging rail in work area
- › Provision for interface with buildin energy management systems

PIC/S (COMPLIANCE SOLUTIONS)

REDUCED CONTAMINATION RISK WITH REMOTE SUPERVISION

The installation of cameras within the workzones of our cytotoxic drug safety cabinets offers an enhanced level of quality assurance and operational efficiency for pharmaceutical aseptic processing.

Remote observation cameras allow for real-time monitoring and cross-referencing of work without the need for a second operator to enter the sterile room, significantly reducing the risk of contamination.

With high-definition video capture, operators and quality control personnel can remotely verify procedural accuracy and adherence to protocol, ensuring product safety and consistency. This camera system supports audit trails, enhances accountability, and aligns with stringent safety and quality standards.



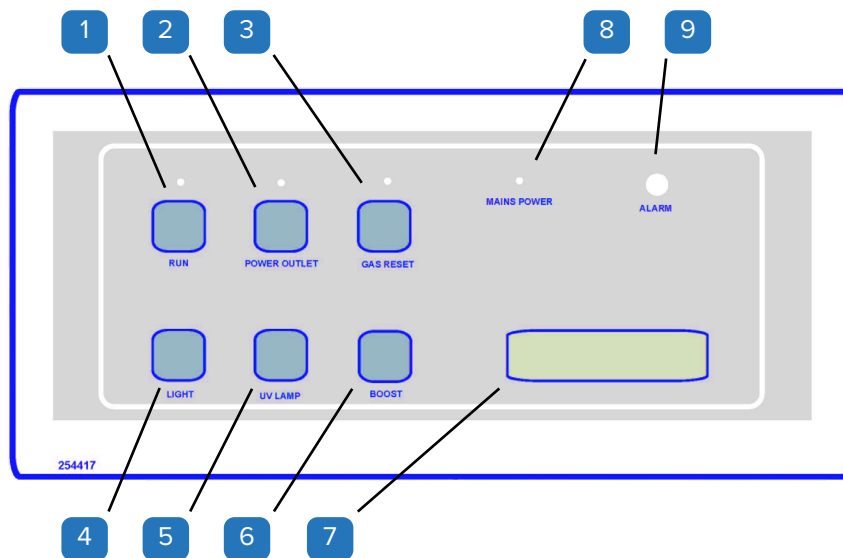
PRECISE PARTICLE MONITORING FOR CLEAN ENVIRONMENTS

Under PIC/S GMP guidelines, continuous or frequent particle monitoring is crucial, especially in Grade A zones, to ensure that air quality remains within permissible levels during production. Particle counters help in detecting airborne contamination in real-time, allowing for immediate response if particle counts exceed established limits, thereby helping maintain a sterile and compliant environment. While not all setups must have in-line particle counters as a requirement, it's generally recommended or required for high-risk operations, such as cytotoxic drug processing, where product sterility and operator safety are paramount.

By capturing particle data directly from the work zone, operators and quality control teams can proactively identify potential contamination risks and take corrective action immediately. This system, in partnership with Particle Measuring Systems (PMS), not only supports compliance with stringent industry standards, such as PIC/S GMP but also enhances the safety and reliability of the aseptic processing environment, making it a crucial tool for maintaining product integrity in critical applications.



OPERATION



Control Panel

1. Fan/post-use over-run switch
2. Power outlet switch
3. Gas reset switch*
4. Fluorescent light switch
5. UV lamp switch*
6. Boost mode switch
7. Display panel
8. Mains power indicator
9. Alarm indicator

*optional function

High-efficiency filters and fans deliver quiet operation and safety. Negative pressure zones surround all positive pressure areas, eliminating the possibility of contaminated air bypassing the filter or escaping from the cabinet.

In operation, vertical laminar airflow gently passes from the Laminar HEPA filter to the sump HEPA filter to create a biologically clean work area.

IN CYTOTOXIC CABINETS

An air barrier across the work access opening, into the sump, reduces potential risks to personnel from airborne contaminants in the work zone.

In Cytotoxic models, the airflows combine in the sump area beneath the work floor and pass through an extra HEPA filter before recirculation via a return air plenum, to the top housing.

Separate fan/filter arrangements allow independent adjustment to maintain an effective air barrier.

A microprocessor is used to control the speed of the blower motors. This microprocessor also allows fingertip control of functions and status including:

- > Cabinet performance and status clearly displayed in plain English.
- > Boost mode.
- > Built-in stopwatch.

TESTING AND SERVICE

From years of experience in the design and manufacture of cabinets in Australia, the new generation Cytogard cabinets have been designed with the end user in mind. Simple to operate and encompassing safety and reliability, this stylish new cabinet is supported by our nationally focused spare parts and service divisions located in all major centres.

AUSTRALIAN STANDARDS

Ctyogard Cytotoxic Drug Safety cabinets comply with AS 2252.5 in all three vital areas:

- Cabinet design/construction
- Cabinet performance
- Air filter performance

Some cabinets on the Australian market do not comply in all of these areas. A decision to use such equipment should be taken only after careful consideration of the risk posed by the materials to be handled and with the agreement of those who will operate the equipment. (See current and proposed Health and Safety Regulations).



CERTIFICATION

Cytotoxic drug safety cabinets are factory tested and certified by a NATA-Accredited laboratory. Additional testing and certification is recommended as follows:

- > On site prior to use
- > After maintenance
- > After filter replacement
- > After re-location
- > At least annually

In special circumstances, such as significant change in the work programme, or where unsafe cabinet operation is suspected.



AES Environmental maintains an ISO 9001:2015 quality management system to ensure process and product conformance.

Please note: Specifiers and intending users should see AS2252.5 which sets out the intended applications and limitations of these cabinets.

Model	Overall Dimensions (mm)			Work Zone Dimensions (mm)			Weight (kg)
	W	D	H	W	D	H	
CGA90 SIDE EXHAUST	1235	765	2310	876	560	585	220
CGA90 TOP EXHAUST	1035	765	2510	876	560	585	220
CGA120 SIDE EXHAUST	1540	765	2310	1180	560	585	300
CGA120 TOP EXHAUST	1340	765	2510	1180	560	585	300
CGA180 SIDE EXHAUST	2150	765	2310	1790	560	585	400
CGA180 TOP EXHAUST	1950	765	2510	1790	560	585	400

Model	RHS exhaust	LHS exhaust	Top exhaust
CGA90	2030021	2030022	2030023
CGA120	2030201	2030202	2030203
CGA180	2031201	2031202	2031203

PERSONNEL PROTECTION



Cytotoxic drugs and prions are hazardous to human health. It is necessary to protect both users and service personnel. For those applications where personnel and environmental protection is required, Clyde-Apac Class I or Class II biological safety cabinets, or cytotoxic drug safety cabinets (as applicable) should be considered.

GENERAL SPECIFICATION CGA TOP & SIDE EXHAUST

Model		CGA 90	CGA120	CGA180
Part No.		TOP: 2030023 LHS: 2030022 RHS: 2030021	TOP: 2030203 LHS: 2030202 RHS: 2030201	TOP: 2031203 LHS: 2031202 RHS: 2031201
Nominal Size of Sump and Cabinet Assembled External Dimensions (WxDxH)		TOP: 1035x765x2510 mm SIDE: 1235x765x2310 mm	TOP: 1340x765x2510 mm SIDE: 1540x765x2310mm	TOP: 1950x765x2510 mm SIDE: 2150x765x2310 mm
Internal Work Zone Dimensions (WxDxH)		876 x 560 x 585 mm	1180 x 560 x 585 mm	1790 x 560 x 585 mm
Test Opening		185mm	185mm	185mm
Working Opening		185mm	185mm	185mm
Fans: 240V single phase direct drive		240V	240V	240V
Average Airflow Velocity	Inflow to grille	0.6 m/s	0.6m/s	0.6m/s
	Downflow	0.4 - 0.45m per second		
Sound Emission		65 dBA	65 dBA	65 dBA
HEPA Filter Typical Efficiency	Downflow	H14 99.995% at 0.1 to 0.3 microns to AS4260/EN1822		
	Exhaust	H14 99.995% at 0.1 to 0.3 microns to AS4260/EN1822		
HEPA Exhaust Outlet Flow into Capture Hood (l/s)		270 l/s	350 l/s	450 l/s
Germicidal UV Lamp AS1807.15		minimum 600mW/m2		
Fluorescent Lamp Intensity AS1807.15		800 Lux	800 Lux	800 Lux
Certification to Australian Standards		AS 2252.5 / AS 1807:2021 Cl. 4.1, 4.3, 4.4, 4.9, AS/NZS ISO 14644.1, AS 3760		
Cabinet Construction AS2252.5 - 2009	Main Body	1.2mm 18 gauge powder coated zinc anneal steel		
	Work Surface	1.2mm 18 gauge type 304 stainless steel with 2B finish		
	Side Walls and Sump	1.2mm 18 gauge type 304 stainless steel with 2B finish		
Front viewing window		6mm toughen glass		
Electrical 220-240V AC 50Hz	Cabinet Power/Amp	875	875	1200
	Outlet Amp Fuse	10 Amps		
	Full Load Amps	0.5v		
	Power Consumption	0.75Kw	0.75Kw	750W 0.75Kw
Cabinet Net Weight (kg)		220kg	300kg	400kg
Cabinet Sump (kg)		60 kg	80 kg	100 kg



AES Environmental is a family owned, engineering and manufacturing business. The company comprises of major brands situated in the Air Filtration, Pollution Control and Life Sciences markets. Those brands and products are market-leading names within their fields ensuring that AES Environmental is capable of fulfilling its goal of providing the market with a single, integrated source for air filtration, clean room and pollution control needs.

Whatever business area you operate in, effective air filtration and pollution control is vital for your products, processes and people. All our products are manufactured in Australia and along with that, we offer installation and service Australia wide, that you can always rely on.

GET TO KNOW US

AES Environmental consists of an Australian head office and manufacturing location in Sydney, NSW, manufacturing and service operations in Perth, WA, Adelaide, S.A. and service operations in Melbourne, Vic. Internationally the business operates manufacturing facilities in Bangkok, Thailand and Newcastle Upon-Tyne, UK.

However large or small the need, with expertise in just about every area of industrial and process filtration and separation, we're ready to help to deliver the products and 'hands-on' support to help you build a better future.

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In keeping with our policy of continuing product improvement, we reserve the right to alter specifications without notice.

GET IN TOUCH!

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