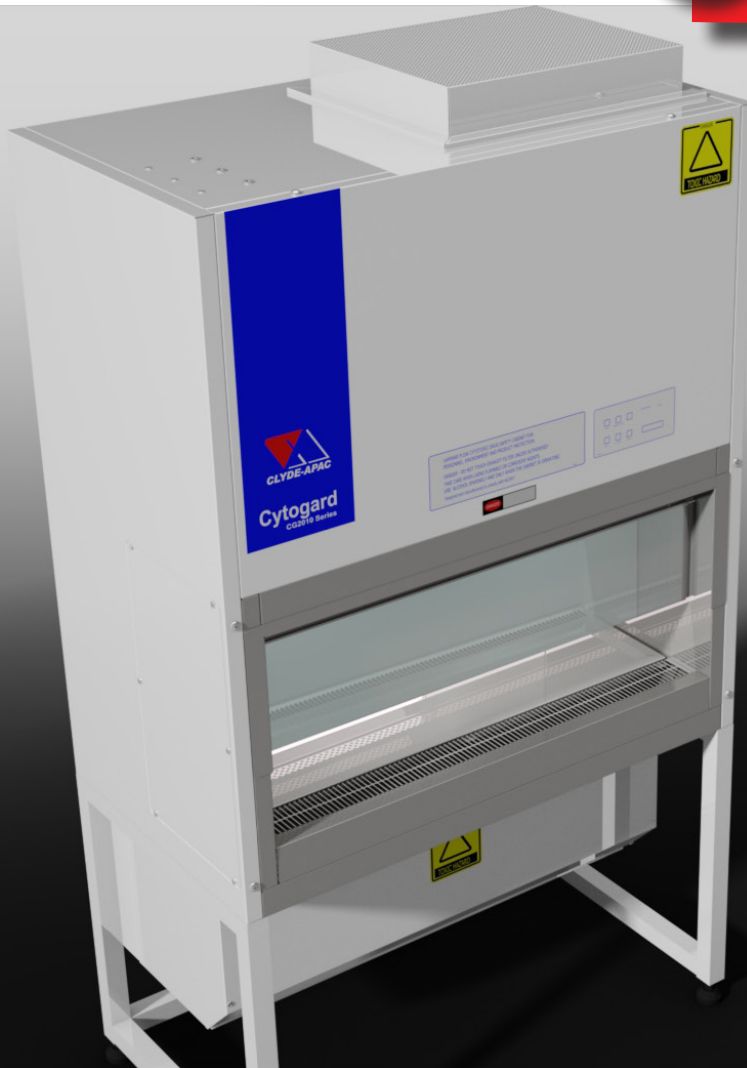
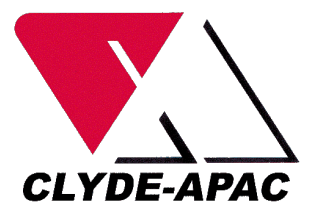




**ADVANCED TECHNOLOGY  
FOR SAFE HANDLING OF  
CYTOTOXIC DRUGS**



**CG200 CYTOGARD**  
CYTOTOXIC DRUG SAFETY CABINETS



## APPLICATIONS

Cytotoxic drug safety cabinets are defined in Australian Standard AS 2639:1994 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. These effects 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.



## DESCRIPTION

CG2000 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 AS 2567.

In operation, vertical laminar airflow through a HEPA filter bathes the work tray, dividing and passing around the perimeter, thus providing a biologically clean work area. In addition, an effective air barrier across the work access opening into the sump area reduces potential risks to personnel from airborne contaminants generated in the work zone.

The airflows combine in the sump area beneath the work floor and pass through a HEPA filter before recirculation via a return air plenum, to the top housing. A portion of air is exhausted from the cabinet in order to maintain the barrier airflow. Separate fan/filter arrangements and the inclusion of a return air plenum booster blower allow fully independent adjustment to maintain correct airflows.



AES Environmental maintains an ISO 9001:2008 quality management system to ensure process and product conformance.



## AUSTRALIAN STANDARDS

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CG2000 Cytogard™ drug safety cabinets are designed and manufactured to comply with all requirements of Australian Standard AS 2567.

Each cabinet is factory-certified by a NATA Accredited laboratory to meet the specified performance requirements. These cabinets may also be used where the handling of other drugs and chemical requires both containment and aseptic manipulation.

Cytotoxic safety cabinets are part-recirculating laminar air flow enclosures with high efficiency particulate air (HEPA) filtration of exhaust air and an air barrier at the work opening.

HEPA-filtered vertical laminar airflow which is recirculated in the work zone creates an ultra-clean work environment for product protection. An air barrier between the operator and the work zone is maintained by a flow of room air into a full width grille in the work opening.

The barrier air mixes with the recirculated laminar flow air in a sump underneath the work surface and is exhausted from the cabinet via a HEPA filter which is located directly under the work tray.

All positive pressure zones and filter seals are surrounded by negative pressure zones, so as to contain potentially hazardous aerosols.

Cabinets are available with the work zone width of 90cm, 120cm or 180cm and are free standing units that incorporate a floor stand.

Standard cabinets have exhaust discharge on the right hand side with optional left hand side or top exhaust available. Top exhaust is typically specified where cabinet exhaust air is to be entrained into the room exhaust in accordance with AS 2639.

These cabinets provide advanced system monitoring technology and a number of unique design features intended to enhance safety and ease of use.



## CONSTRUCTION

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### CABINET

Constructed in electro-galvanised 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. Exterior is finished in a high quality powdercoat 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.

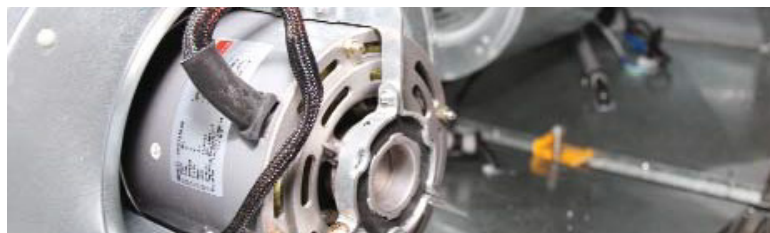
A pneumatic mechanism opens and closes the viewing window without the need for external fasteners or catches. The window is self supporting in the fully open position to facilitate cleaning and access for large items. Opening the window with the cabinet running automatically engages a boost mode for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

### HEPA FILTERS

Clyde Apac Microseal™ HEPA filters, are certified for compliance to AS 4260. 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.



### 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.

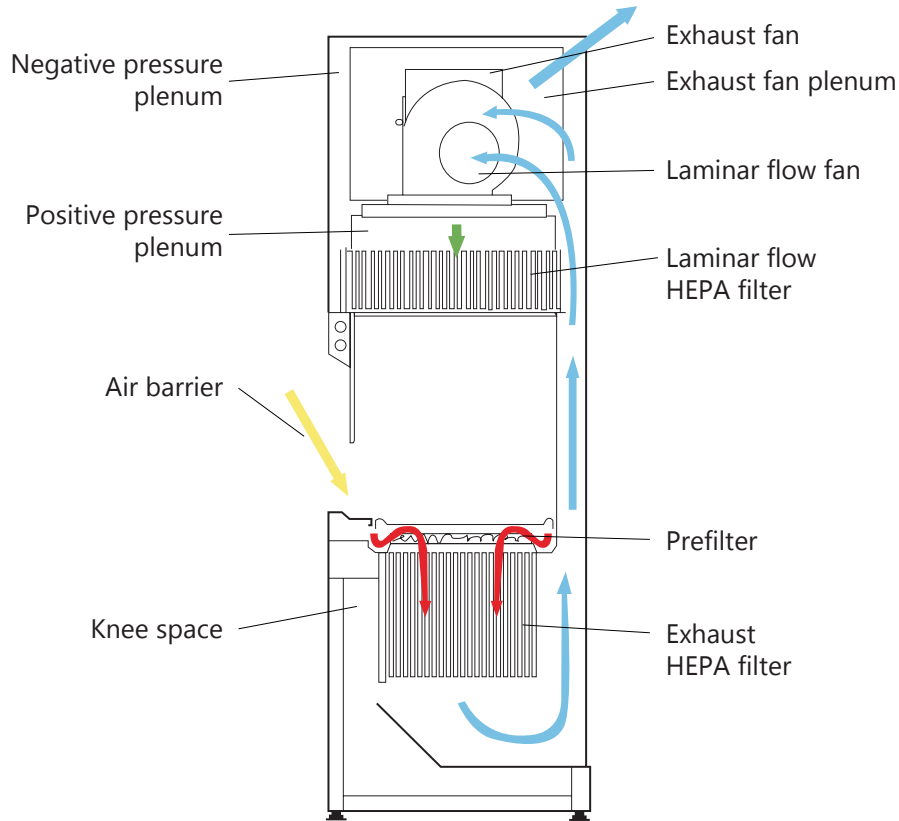
### ELECTRICAL

Cabinets operate on single-phase 240V, 50 Hz power via a 10A outlet. The electrical system complies with Australian Standard AS 3100.

A low voltage touch control panel is located on the front of the cabinet. The Optima 2000™ microprocessor-controlled control and diagnostic system provides continuous monitoring of critical cabinet functions with a digital display indicating the nature of any malfunction.



## 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
- Provision for interface with building energy management systems
- Pneumatically assisted viewing window
- Magnahelic gauge to monitor fan systems
- Fully-sealed work opening cover for testing procedures
- Comprehensive operation and maintenance manual

### OPTIONS

- Activated charcoal exhaust filter
- Work area power outlet
- Ultra-violet germicidal lamp
- Gas tap (solenoid-interlocked)
- Service taps (vac, air, CO<sub>2</sub>, etc.)
- Hanging rail in work area



Model	Overall Dimensions (mm)			Work Zone Dimensions (mm)			Weight (kg)
	W	D	H	W	D	H	
CGA90	1135	770	2310	880	560	610	326
CGA120	1440	770	2310	1180	560	610	372
CGA180	2050	770	2310	1790	560	610	487

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

## PERSONNEL PROTECTION

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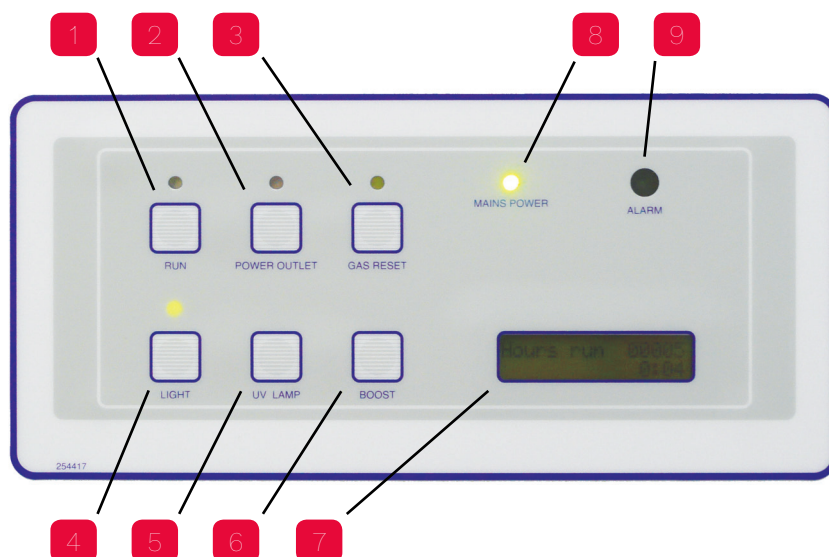


Cytotoxic cabinets provide protection for products or experiments, but do not protect personnel from aerosols of hazardous materials that may be handled in the cabinet. For applications where personnel and environmental protection is required, Clyde-Apac Class I or Class II biological safety cabinets, or cytotoxic drug safety cabinets (as applicable) should be considered.



## OPERATION

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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. Outer shells are gas-tight for safe decontamination.

In operation, vertical laminar airflow through a HEPA filter bathes the work tray, dividing and passing around the perimeter 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.



## OTHER PRODUCTS

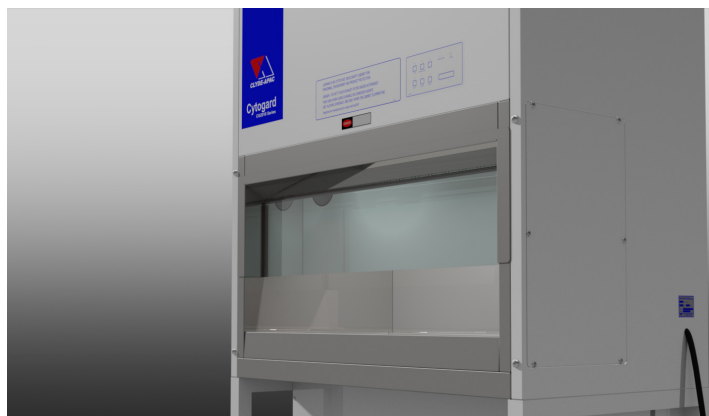
- HWS Series™ horizontal laminar flow cabinets.
- VWS Series™ vertical laminar flow cabinets.
- BSC2000™ Class I biological safety cabinets.
- BH2000™ Class II biological safety cabinets.
- PCR laminar flow cabinets.
- Recirculating fume cabinets.
- TFP™ Series HEPA filter clean room modules.



## ON-SITE TESTING

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, e.g. if faulty operation is suspected.



## THE COMPANY

AES Environmental is an Australian owned manufacturing business producing products under Clyde-Apac, Email Air Handling and Vokes brand names for industries that are as varied as industrial plants, commercial buildings, power stations, food processing, healthcare, science and electronics. AES Environmental considers the Australian Standards as a core component of its product mix and has developed an export market in 25 countries, promoting Australian Standards, engineering and manufacturing solutions. AES Environmental, a trusted manufacturer capable of delivering reliable product solutions to highly-critical applications, where the control of hazardous airborne contamination is often critical to process and personnel.

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



🏠 9A Pembury Rd, Minto.  
☎ 1300 550 116  
📠 1300 550 117  
✉ sales@aesenvironmental.com.au  
🌐 www.aesenvironmental.com.au

