

# Technical specifications

Description	Unit	ENVAIR eco Chem			
		0.6m	0.9m	1.2m	1.5m
Overall dimension WxHxD (1)	mm	595x760x1120	885x760x1120	1185x760x1120	1500x760x1120
Useful dimension WxHxD	mm	533x600x660	823x600x660	1123x600x660	1438x600x660
Working aperture	mm	200			
Max front aperture	mm	455			
Weight	kg	70	85	100	115
<b>Filter</b>					
Pre-filter (particulate)		1	2	2	2
Main filter (charcoal)		1	2	2	3
Weight filter		See the filter table	See the filter table	See the filter table	See the filter table
<b>AirFlow</b>					
Vol/air treated	m <sup>3</sup> /h	300	400	600	700
Average face speed	m/sec	>0,6	>0,6	>0,6	>0,6
<b>Controls</b>					
Version Top		<ul style="list-style-type: none"> <li>• Power on/off • Light on/off • Variable speed air regulation</li> <li>• Hour-counter • Stand-by green light</li> </ul>			
Version Elite		<ul style="list-style-type: none"> <li>• Power on/off • Light on/off</li> <li>• Microprocessor monitoring system checking airflow, pre-filter and filter efficiency</li> <li>• Variable speed air regulation</li> <li>• Audible and visual alarms alert the operator to low/high airflow, fan failure, filter and pre-filter condition, black-out, gas detector and anemometer failure.</li> </ul>			
<b>Construction</b>					
Head section		Epoxy coated zinc plate steel	Epoxy coated zinc plate steel	Epoxy coated zinc plate steel	Epoxy coated zinc plate steel
Base section		Anodized aluminium	Anodized aluminium	Anodized aluminium	Anodized aluminium
Spill tray		PVC Acid and solvents resistant	PVC Acid and solvents resistant	PVC Acid and solvents resistant	PVC Acid and solvents resistant
Fan motor		Centrifugal IP54	Centrifugal IP54	Centrifugal IP54	Centrifugal IP54

Legend:



Electrical sockets installed



Low power consumption



Work zone rear wall varnished

## Service in pure culture

Envair offers service in pure culture. We do not simply sell our units to you but will assist you gladly from A to Z.

### Delivery:

We deliver all units ex works. Set-up service and packaging disposal are included upon request.



### Maintenance:

- Microbiological Safety Cabinets DIN 12469
- Cytotoxic Dispensing Cabinets with KI-discus test DIN 12980
- Product Protection Cabinets
- Laboratory Fume Hoods
- Cytotoxic Dispensing Isolator EN 14644-7
- Isolator EN 14644-7
- Cleanrooms



### Service:

- 24h at site service and 24h free of charge phone hotline
- 7 days a week



Service by professional staff. All works are carried out by service technicians qualified by TÜV Nord

### Spare parts guaranty:

- 10 years
- Availability within 24h
- Ex stock Emmendingen



### Maintenance contract:

Regular terms of maintenance increase your safety. With a maintenance contract we guarantee the complete check of all functions of your units. We will contact you reliably in regular terms.



### Qualification:

- IQ/OQ
- GMP
- GAMP
- 21 CFR Part 11



### Guaranty and Warranty:

Combined with an ENVAIR maintenance contract we offer a 2-year warranty to all units. Excepted are consumables and wearing parts as well as compressed air components.



### Decontamination:

We carry out microbiological decontaminations with most modern H2O2 generators or Formalin units in Cleanrooms, Isolators and Safety Cabinets



# Laboratory Fume Cupboards ENVAIR eco Chem



Vertical  
Fume  
Cupboard

Standard  
**EN ISO**  
**14175-3**

Width (m)  
**0.6 / 0.9**  
**1.2 / 1.5**

## Clean technology for a clean environment

### ENVAIR eco Chem – Beyond minimum safety requirements

ENVAIR have designed and manufactured eco Chem Top and Elite ductless fume cupboards using the latest molecular filtration technology. This provides a safe working environment together with fume containment for protection from chemicals, vapours and aerosol in the laboratories.

ENVAIR eco Chem cupboards are available in two different versions:

- eco Chem Top series fume cupboards meet all routine requirements.
- eco Chem Elite series units have additional microprocessor control. This ensures that all functional and operational parameters are monitored, facilitating the correct operation of the fume cupboards. ENVAIR eco Chem fume cupboards are used for the containment and removal of toxic vapours and aerosol, providing operator safety in a wide range of disciplines.



**Multifunctional Keyboard**

**Upwards opening frontal screen**

**Back side hole to plug external devices**

**Cold rolled epoxy painted galvanized body**

**Acid resistant PVC work surface**



## Technology of today for the world of tomorrow

ENVAIR eco Chem Top is designed to meet all the routine safety requirements encountered by both the operator and the environment through the use of chemical reagents.

Units are equipped with a manual device to set the inlet air velocity when heavy or volatile chemicals are used and are supplied with fluorescent lighting.

The filters used in the fume cupboards are manufactured from high grade coconut shell charcoal.

All types of activated charcoal used in these filters are of amorphous structure obtained from the heat controlled oxidation of coconut shells. The cellulose structure of the coconuts provides the highest adsorption efficiency through a large surface area of up to 1050 m<sup>2</sup>/gm.

### Filter types

**a. Pre-filters:** High performance pre-filters are designed to remove particulates from the air stream. The filter material is based on electrets, which are permanently charged di-electrics. They remove particulates from polluted air by strong electrostatic forces generated by the fibres from which they are made. The combination of strong electric charges and open structure provides a filter with high efficiency, low airflow resistance and high loading capacity. Pre-filter efficiency is equal to 75÷85% dust weight arrestance (ASHRAE).

**b. Main filters:** Eight types of filter media are available. Most of these are impregnated activated carbon, to provide a higher filter capacity for lower molecular weight organic compounds and inorganic gases and vapours.

A number of filter efficiency studies have been carried out, and all results using single bed filters show efficiencies very close to 100%.

**1. A/C FILTER:** The A/C filter is the most widely used filter in the range, and is used primarily for solvent fume removal. It is manufactured from coconut-shell based activated carbon of 4 x 8 USS mesh size and surface area up to 1050 m<sup>2</sup>/gm. Filtration is achieved by the physical adsorption of molecules in the pores of the activated carbon by Van der Waals forces. Primary use: organic odours, hydrocarbons, aromatic solvents, animal odours, excrements, urines, acid odours, cadaverine, putrescine. Secondary use: oxygenated nitrogen compounds.

**2. ACR FILTER:** This filter is impregnated with halide salts and is used for the high efficiency removal of iodine and methyl iodine. It is frequently used for iodination reactions with low-level radioactive

iodine and efficiencies in excess of 99,99% have been measured. Primary use: radioactive iodine. Secondary use: hydrocarbons.

**3. FORM FILTER:** This filter is impregnated with an oxidizing agent to oxidise formaldehyde to form salts. It is widely used in hospital pathology and cytology laboratories. Primary use: formaldehyde. Secondary use: organic emissions, hydrocarbons, aromatic solvents, acid gases.

**4. SULF FILTER:** Primary use: acid odours, putrescine, cadaverine, acid gases, hydrogen sulphide, methyl mercaptan, sulphur compounds, sulphur dioxide, R.H.>85%.

**5. UR FILTER:** Primary use: acid odours, putrescine, cadaverine, acid gases, hydrogen sulphide, methyl mercaptan, sulphur compounds, sulphur dioxide, nitrogen oxygenated compounds. Secondary use: organic emissions, hydrocarbons, aromatic solvents, hydrocyanic acid, R.H. <85%.

**6. CYAN FILTER:** Primary use: hydrocyanic acid. Secondary use: organic emissions, hydrocarbons, aromatic solvents.

**7. MER FILTER:** Primary use: mercury vapours Secondary use: organic emissions, hydrocarbons.

**8. AM FILTER:** Primary use: ammonia and its derivatives. Secondary use: organic emissions, hydrocarbons, aromatic solvents, alkaline odours, excrement, urines animal odour.

**9. HEPA FILTER:** Primary use: powder and particulate.

#### Additional activated charcoal filters

ENVAIR eco Chem unit may be optionally fitted with additional charcoal filter whenever the application requires for simultaneous use of different kind of solvents which can not be retained by standard charcoal filter. The additional filter is located into an external housing made in epoxy painted steel which can be fitted with or without spigot for external ducting.

## Our technology protects human and environment

ENVAIR eco Chem Elite is designed with a microprocessor controlled system for a range of data which includes type and code number of the filter being used, installation date, maximum time allowance for filter use and a warning date for its replacement. Built in with five different languages like Italian, English, German, French and Spanish. Audible and visual alarms are also available to protect the operator. These alarms cover out of range minimum and maximum air velocity, filter saturation, prefilter clogging, anemometer failure, gas detector failure and motorfan malfunctioning. ENVAIR eco Chem Elite is equipped with fluorescent lighting as well as optional vacuum tap and power point.

A wide range of filters is available, from activated charcoal adsorbing filters to chemical adsorbing filters for specific applications such as the use of formalin, gluteraldehyde or radioactive iodine labelled compounds and for others applications.

The ENVAIR eco Chem 0.6 unit incorporates a carbon filter which weighs approximately 13-21, 5 Kg, the ENVAIR eco Chem 0.9 unit incorporates two carbon filters with a total weight of approximately 18-28,8 Kg and the ENVAIR eco Chem 1.2 unit incorporates two carbon filters with a total weight of about 26-43 Kg.

The ENVAIR eco Chem 1.5 incorporates three carbon filters with a total weight of about 35-58 Kg.

Life time of the carbon filters is proportional to the overall weight of the charcoal fitted inside the filter.

ENVAIR eco Chem is fitted with the biggest filters available in the market to house a large quantity of carbons thus expanding the filter life time.

Each fume cupboard is equipped with disposable type prefilters, with an efficiency of 75%-85% dust weight arresstance (ASHRAE) to protect the main activated charcoal filter.

### Optional

ENVAIR eco Chem cabinet may be optionally fitted with water tap and drain system. Work surface and all drain connections are made in AISI 304L stainless steel. Water tap can be positioned on the right or on the left hand side. The unit fitted with optional water tap is completed with an epoxy painted base stand mounted on castors with two hinged doors and handles.

Amenities for connection to the water building management system is not provided with the kit.



## Applications

Applications for ENVAIR eco Chem fume cupboards may be found in many laboratories, including those in clinical diagnostic testing, biological and medical research, analytical chemistry, Q.C., biotechnology, pharmaceutical industries, food, fine chemical, petrochemical, cosmetic, photographic laboratories and electronic industries.