

# AIR FILTRATION

PRODUCTS LINEUP

MICRO ELECTRONIC

COMMERCIAL BUILDING

PHARMACEUTICAL

REFINERY

GAS TURBINE

PULP AND PAPER

HEPA/ULPA  
FILTER SERIES

MEDIUM HIGH EFFICIENCY  
AIR FILTER SERIES

PRE FILTER  
SERIES

POWER PLANT  
SERIES

GAS PHASE  
SERIES

EQUIPMENT  
SERIES

FILTER  
SELECTION



*Malaysia Factory*

# About Us

Japan Air Filter (JAF), Founded in 1960, has provided extensive Air Purification Products & Solutions across the world. JAF is firmly committed towards the mission of being one of the leading air filtration companies by supplying genuine products that can contribute to preserve global environment and demonstrate the Best Performance in the Air Purification Industry. JAF Emphasis on Continuous Improvement in its product line through the qualified Research & Development Team to have the available technologies updated to contemporary requirements. JAF offers the Best Air Purification Products & Services to the customers with highest satisfaction guarantee.

*Japan Factory*





## COMMERCIAL BUILDINGS:

In our Daily life, Air Filtration industry plays a significant role. Whether it is rural or urban or most of the areas, the climate of residential, commercial and industrial buildings is highly a requirement rather than a comfort or luxury. The air is conditioned (heated or cooled) in accordance with the preference of the dwellers.

Since the world's population has always been growing ever since its existence, there is always a demand for construction of buildings with HVAC requirements, so this industry has plenty of room to improve, grow and expand.

JAF is well known in this market by its vast experience for more than 60 years and through its extensive involvement in the industry, can offer best recommendations for any of the dust & energy saving requirements. JAF products undergo extensive quality compliance to meet the international standards.

Tokyo Sky Tree Town



Marunouchi Park Building



Haneda International Airport



## MICROELECTRONICS:

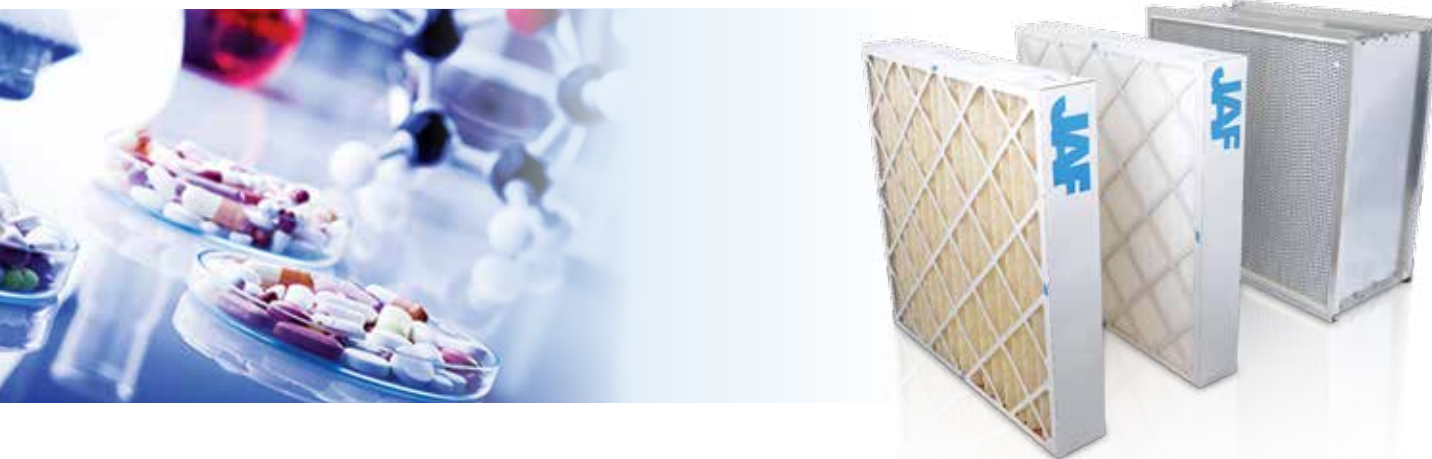
Extreme Cleanliness is the necessity while manufacturing Semiconductors, hard disks etc., since even a few particles at Micro levels and chemical contaminants at Nano levels may cause a major failure and subsequent losses to the manufacturer by affecting their production yield and product let-downs.

Cleanliness of the design of cleanrooms are quantified by standards such as ISO 14644, US Federal Standard 209E and others. To achieve them according to the design requirements as per the regulations & standards, the particulate and chemical filters must be properly selected, installed & maintained throughout the usage of controlled ambient of those cleanrooms.

The impact to environment and its resultant damages in case of some emergencies, due to the products used in the design of cleanrooms are governed by standards such as FM, UL & others.

JAF have more than 6 decades of experience and through its extensive involvement in the industry, can offer best recommendations for both particulate and molecular control in the field of microelectronics and semiconductor contamination control. JAF products undergo extensive quality compliance while manufacturing for this industry to meet the international standards.





## PHARMACEUTICAL INDUSTRY:

Every single process here will have a requirement of controlled ambient due to its products being used for active consumption of human beings. Pharmaceutical facilities usually have a more involved HVAC system, due to the strict air quality standards they need to achieve & maintain. Proper Air filtration is a necessity in these applications to minimize downtime and streamline production within the clean rooms, while capitalizing on energy savings within budget limitations.

Typically, HVAC systems in Pharma industry, use air handlers with a variety of filters to treat the air before it enters the clean room. So, choosing the correct combination of the filters with low pressure drops is very important to save the operational expenses and energy consumption, subsequently, reducing the carbon foot print.

JAF have the expertise and proven references & clients in this industry due its vast experience of more than 60 years. JAF products undergo extensive quality compliance to meet the various international standards.

## HOSPITALS & HEALTHCARE FACILITIES:

Many contagious phenomena can occur easily in Hospitals & Healthcare facilities, when proper control of microorganisms is not taken care in the HVAC due to the usage of the ambient by different patients having complex & unique medical requirements. Also, must consider the safety of healthcare workers who are spending most of working hours inside the facilities. So, Clean, healthy air should be the highest priority in any hospital or medical facility.

Proper identification and usage of air filtration products provides patients, staff and visitors with a high degree of protection from airborne pollutants and microorganisms that can cause infection, disease and even death.

JAF having the expertise and know how in this industry, can supply filters that can contain the growth of microorganisms in the Air Handlers. The filtration products meet to the industry requirements, most reliable and proven with existing list of project references and case studies.





## CHEMICAL CONTAMINATION REMOVAL SYSTEMS:

Chemical Pollutants are contaminants at molecular levels ( $10^{-9}\text{m}$  to  $10^{-10}\text{m}$ ), that are not visible to naked eyes, even to microscopes. Only it's effects can be known, odours (or) smell, corrosion of metal surfaces and unwanted results in some controlled & mission critical requirements, sometimes, even toxic & chronic effects.

To effectively filter & protect the users from chemical pollutants and to have the desired operations uninterrupted, we, JAPAN AIR FILTER (JAF), have appropriate and optimum Gas Phase filtration solutions for all the diversified requirements in the filtration industry.

The entire range of Gas Phase Filtration can be grouped as below:

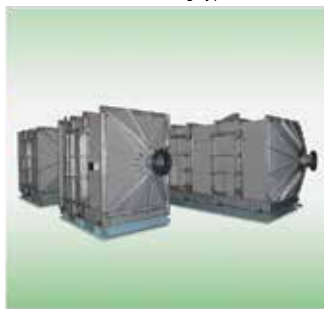
- Commercial HVAC for Indoor Air Quality (IAQ) requirements such as odour control, kitchen exhaust purification, offices, hospitals and others.
- Semiconductor, Microelectronics & Pharmaceutical cleanrooms.
- Industrial Laboratories, gas storage areas & other emergency scrubbing requirements.
- Industrial HVAC & Data Centres for corrosion control requirements to comply as per ISA standards of Control Room designs.
- Odour control in Sewage, Waste Water Treatment Plants & Water Treatment Plants.
- Toxic gas purifications such as Military & Radio Active (Nuclear power plants) gases.



Auxiliaries on gas-turbine power generator



Pulse cleaning type intake filter



SGTS for nuclear power plants

## GAS TURBINE AIR INTAKE SYSTEMS

This department deals in the intake filter systems for gas turbines, thermal power plants, petrochemical plants and specific air purification systems essential to nuclear applications. JAF provision not only limited to single filtration system but a total entire system including air-inlet and exhaust systems, silencers, air coolers and etc. JAF engineering capabilities together with our past products supply are highly appreciated and is recognized domestically and abroad.

In 1969, JAF supplied the very first nuclear power plant in Japan with our air purification system. Since then, JAF have supplied a number of products such as air inlet and ventilation systems, HEPA filters and carbon filters to various nuclear power plants and facilities.

As a Japanese engineering firm, JAF focus very much into our customers' needs. JAF major customers of this department have successfully expanded their business abroad, allowing our products to also penetrate to those markets and it has been increasing every year.

## HEPA / ULPA FILTER SERIES



High Air Capacity HEPA Filter

### LunaCel TS

- H10, H11, H12, H13, H14
- Ultra-fine fire retardant fibreglass
- Corrugated aluminium
- Low pressure drop
- Galvanized steel, Anodized aluminium, Stainless steel, MDF, Plywood
- Standard depth 149mm and 292mm
- Available in dry seal and gel seal to create leak-free connection to the hardware
- Energy saving and environmental friendly
- UL certified

High Air Capacity HEPA Filter

### LunaCel STD

- H10, H13, H14, U15
- Ultra-fine fire retardant fibreglass
- Corrugated aluminium
- Galvanized steel, Anodized aluminium, Stainless steel, MDF, Plywood
- Standard depth 149mm and 292mm
- Available in dry seal and gel seal to create leak-free connection to the hardware
- UL certified



High Air Capacity HEPA Filter

### LunaCel HC HT

- H10, H13, H14, U15
- Ultra-fine fire retardant fibreglass
- Corrugated aluminium
- Galvanized steel, Stainless steel
- Standard depth 149mm and 292mm
- Gasket Red Silicone
- Temperature Limit up to 250°C
- UL certified



High Air Capacity Mini-Pleat HEPA Filter

### LunaCel V

- H10, H13, H14
- Ultra-fine fibreglass
- ABS
- Standard depth 292mm
- UL certified



High Air Capacity Mini-Pleat HEPA Filter

### LunaCel VBX

- H13, H14
- Moisture resistant, fire retardant fibreglass
- Galvanized steel, Stainless steel
- Standard depth 292mm
- Auto gasket and neoprene gasket is available
- UL certified



## HEPA / ULPA FILTER SERIES



PTFE Mini - Pleat Filter

### TetraKleen

- H13, H14, U15
- Lower pressure drop than fiber glass
- Low off gassing
- High durability media
- High acid resistant to corrosive environment
- EDPM, jointless polyurethane gasket



PTFE Aluminium Separator

### TetraCel

- H13, H14, U15
- Lower pressure drop than fiber glass
- Low off gassing
- High durability media
- High acid resistant to corrosive environment
- EDPM, jointless polyurethane gasket

High Air Capacity Mini-Pleat HEPA Filter

### LunaCel VL

- H13, H14
- Ultra-fine moisture resistance and fire retardant fibre glass
- Galvanized steel, Stainless steel
- Standard depth 292mm
- UL certified



Standard Type Mini-Pleat Hepa/ULPA Filter

### LunaKleen

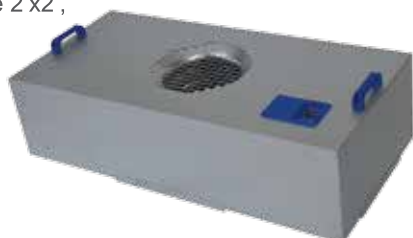
- H13, H14, U15, U16, U17
- Moisture resistant, fire retardant fibreglass
- Anodized extruded aluminium
- Standard depth 69mm, 81mm, 93mm and 117mm
- Gel seal
- Jointless polyurethane gasket
- UL certified



Fan Filter Unit

### LunaFan AC/EC

- LunaKleen as filter for Fan Filter Unit
- Moisture resistant, fire retardant fibreglass
- Aluminium, Stainless steel, Galvalume
- Standard module 2'x2', 2'x4' and 4'x4'
- UL certified
- Available in single phase (1p) and three phase (3p)
- With variable speed controller or Smart Electronic Control (EC) FFU system



Standard Type Ceiling Module

### LunaKleen Hood

- H13, H14, U15
- Ultra-fine fibreglass
- Anodized aluminium, Stainless steel
- Collar size 10", 12" and 14"
- Standard depth 152mm
- Disposable unit for optimum filter performance with an individual ducted system
- UL certified



## MEDIUM HIGH EFFICIENCY AIR FILTER SERIES



### Standard Type Medium High Efficiency Filter

#### Mirapack R Flange/Box Type

- M6, F8, F9
- 150Pa @ 2000CFM - refer to F9
- Galvanized steel
- Standard depth 150mm
- Environmental friendly
- Replace only with media pack

### Standard Type Medium High Efficiency Filter

#### MiraCel

- F6, F7, F8
- Dual density, ultra-fine fibreglass
- Corrugated aluminium
- Available in single header, double header and non header
- Galvanized steel, Anodized aluminium, Stainless steel, MDF, Plywood, Fire retardant plywood
- Standard depth 149mm & 292mm
- UL certified



### Mini-Pleat Type Medium High Efficiency Filter

#### MiraCel II

- F6, F7, F8
- Dual density, ultra-fine fibreglass
- Available in Beverage board, Water resistant board
- Standard depth 95mm
- UL certified



### High Air Flow Type Medium High Efficiency Filter

#### MiraCel HT

- F6, F7, F8
- Ultra-fine fibreglass
- Corrugated aluminium
- Available in single header, double header, and non header
- Galvanized steel, Anodized aluminium, Stainless steel, MDF
- Standard depth 149mm & 292mm
- Temperature Limit up to 250°C
- UL Certified



### Standard Type Medium High Efficiency Filter

#### MiraCel II MH

- F6, F7, F8
- Dual density, ultra-fine fibreglass
- Available in single header, double header & none header
- Aluminium, galvanized steel
- Standard depth 105mm
- UL Certified





## MEDIUM HIGH EFFICIENCY AIR FILTER SERIES



Energy saving | environmental friendly



Rigid Bag Type Medium High Performance Filter

### MiraDeep Borsa PS

- G4, M5, M6, F7
- 100% synthetic media
- Molded Header does not corrode and can be incinerated
- Low pressure drop design greatly reduce operating cost
- High dust holding capacity provided extended life

High Air Flow Type Medium High Efficiency Filter

### MiraCel II HT

- F6, F7, F8
- Dual density, ultra-fine fibreglass
- Stainless steel, Galvanized steel
- Temperature Limit up to 250°C
- Standard depth 105mm
- UL certified



High Air Flow Type Medium High Efficiency Filter

### MiraCel V

- F6, F7, F8, F9
- Ultra-fine fibreglass
- ABS
- Standard depth 292mm
- Longer life span due to mini pleated arranged in V-shape
- UL certified



Standard Type Medium High Efficiency Filter

### MiraCel MB

- M5, M6, F7, F8
- Galvanized steel
- Standard depth 292mm
- Meltblown synthetic media protected by scrim on the air-leaving side
- UL certified



Bag Type Medium High Performance Filter

### MiraDeep Borsa FG

- F6, F7, F8, F9
- Galvanized steel
- Standard depth 514mm and 920mm
- Unique fine fibre media to maintain efficiency
- Longer life span and high dust holding capacity
- Intercept is available
- UL certified



Bag Type Pre-Filter

### MiraDeep Borsa G

- G4
- Galvanized steel
- Standard depth 305mm
- High performance synthetic media pocket filter
- Unique pocket design enables the filter to have high dust holding capacity and long service life characteristics
- Intercept is available
- UL certified



Bag Type Medium High Performance Filter

### MiraDeep Borsa

- F6, F7, F8
- Galvanized steel
- Standard depth 12" , 15" , 21" , 24" , 30" and 36"
- Synthetic fibre media offers high product strength
- Longer lifespan and high dust holding capacity
- Intercept is available
- UL certified



## PRE FILTER SERIES

### Roll Type Pre-Filter

#### JS - FB Mat

- G3
- Fibre glass media
- 2.5 m/s
- DHC 475 g/m<sup>2</sup>
- White, impregnated with gel, scrim at clean air side



### Roll Type Pre-Filter

#### JS Mat EC/SD/SU

- G2, G3, G4, M5
- Standard length 20 m
- Synthetic fibre media
- Excellent in heat resistance and water resistance
- Inflammable



### Synthetic Fiber Pre-Filter

#### DeaKleen EC/SD/SU/SP/MG

- G4, M5
- Beverage board, Galvanized steel
- Standard depth 22mm, 44mm and 95mm
- Non-woven cotton synthetic blend
- Intercept is available
- UL certified



### Roll Type Ceiling Filter - Paint Booth

#### JS Mat GPM30 / GPM 60

- M5
- Standard length 2 x 20m
- Standard thickness 18mm, 22mm
- 100% Polyester Fibre
- Come with scrim



### Standard Synthetic Fiber Pre-Filter

#### DeaMat EC/SD/SU

- G2, G3, G4
- Standard depth 21mm, 46mm and 95mm
- Synthetic fibre pre-filter in the form of pad
- Size of the pad is customizable



### Standard Pre-Filter

#### DeaMat G50/G60/G85/G90

- G1, G2, G3, G4
- Standard depth 25mm, 50mm and 100mm
- Fibre glass media
- Size is customizable



### Glass Fiber Pre-Filter For Paint Mist Usage

#### DeaMat GPM

- Fibre glass filter with progressive density for paint mist.
- High capacity for overall size of 50mm thickness for paint mist
- Improve paint mist operation environment.



### Pre-Filter

#### Grease Filter

- Aluminium
- Multiple layers of corrugated and fine mesh expanded metal sheets
- Standard depth 46mm
- Washable and suitable for air or grease application



## GAS TURBINE

### Demister Coalescing Pad

#### DeaMat GDM

- Fiber glass filter mist removal
- Best for air intake with mist at off-shore platform and coastal area.



### Synthetic Fibre Pre-Filter

#### DeaKleen GT

- G4
- Beverage board
- Standard depth 95mm
- High loft media increase dust holding capacity



### Standard Type Medium High Efficiency Filter

#### MiraCel GT

- F6, F7, F8, F9
- Heavy duty filters for use in ventilation systems with high efficiency requirements, even under extreme conditions such as those found in gas turbines, centrifugal compressors and similar requirement
- Available in single header, double header and non-header
- Available also in dual layer media



### High Air Flow Type Medium High Efficiency Filter

#### MiraVee GT

- F6, F7, F8, F9
- Ultra-fine fiberglass
- ABS
- Standard depth 292mm
- Long life span due to mini pleated arranged in v-shape
- Come with 8 pieces of faceguard



### High Air Capacity Mini Pleat HEPA Filter

#### ZannaVee

- E10, E12
- Ultra-fine fiberglass
- ABS
- Standard depth 292mm
- Long life span due to mini pleated arranged in v-shape
- Come with 8 pieces of faceguard



### High Air Capacity Mini Pleat HEPA Filter

#### DeaMat G90 DMG-A90

- Progressively structured glass fibre filtermedia impregnated throughout with a harmless gel for the filtration of coarse dust-particles.
- Application: As a preliminary filter for the filtration of coarse dust-particles in general ventilation- and air conditioning equipment.
- Thickness: 4".

### Prefilter Equipment

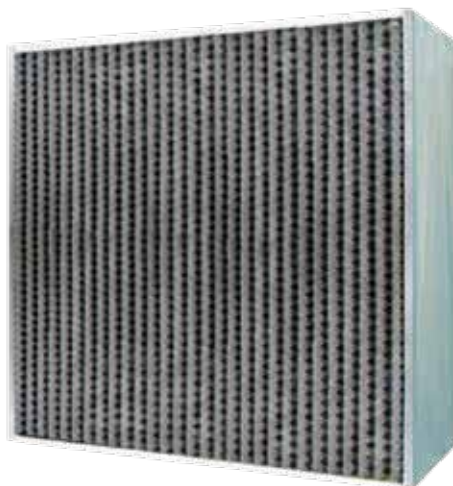
#### DeaVane Housings

- Inertial Separation of airborne Dust in Fresh Air intake
- Continuous Pre-Filtration of Dust in HVAC & Industrial Intake Systems
- Proven Pre-filtration efficiencies in areas with severe & extreme atmospheric conditions, such as continuous dust & sand storms
- Standard Size Housings for air flows from 500 – 80000CMH
- Pressure Drop range 100Pa – 300Pa based on air flow conditions selected





## GAS PHASE SERIES



### High Performance Chemical Filter

## Ion Exchange Laminated Activated Carbon

- Modular construction with Pleats & Separators in Metal Frames
- Sturdy Space Saving Design
- Customized Design suitable to remove Wide Range of Chemical pollutants
- Available in both standard & non-standard sizes

### Pleated Filter

## DeaCarb

- Combi Type, pleated Carbon Media with In-Built Particulate filter
- Self-Supporting, fully disposable, construction
- Suitable for all type of IAQ applications with various choice of chemical media
- Effectively removes both dust & odour / IAQ pollutants
- Available in standard, 1" (22mm), 2" (44mm) & 4" (95mm) depths



### Pleated Filter

## DeaSorb

- Pleated Carbon Media pack
- Self-Supporting, fully disposable, construction
- Suitable for all type of IAQ applications
- Effectively removes odour & IAQ pollutants
- Available in standard, 1" (22mm), 2" (44mm) & 4" (95mm) depths



### Pleated Filter

## MiraSorb

- V-Type Pleated Carbon Media pack
- Plastic, No Metal, fully disposable, construction
- Suitable for all type of IAQ applications with various choice of chemical media
- Effectively removes odour / IAQ pollutants
- Available in standard sizes



### Pleated Filter

## MiraSorb HC

- V-Type Pleated, Honey Comb, Carbon Media pack
- Plastic, No Metal, fully disposable, construction
- Suitable for all type of IAQ applications with various choices of chemical media
- Suitable for high air flows at low resistance
- Available in standard sizes



## GAS PHASE SERIES

### Cassette Modules

#### 18CS & 12CS

- Available in Plastic construction
- Contemporary, Low Resistance Design
- Optimized Design for Energy Efficient Performance.
- Available in 18" & 12" standard depths.
- Suitable to work up to 500FPM (2.54m/s)
- Recommended for Low PPM to PPB levels of contaminants.



### Honeycomb Grid

#### TerraGrid

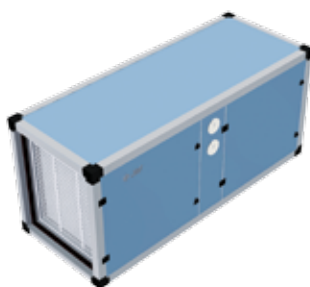
- Latest Technology in Chemical Filter Media
- Very Low Pressure Drop; High Energy Saving Potential
- Available in various specifications & sizes to Remove Wide Spectrum of Impurities
- ULTRA LOW DUST Carry over
- Space Savings
- Totally Safe & Non-Toxic Fresh (New) Media
- Easy to Install & Replace



### Air Purification Equipment

#### Side Access Purifier (SAP)

- Single & Double Wall Constructions
- Space Saving Side Access Design
- Customized Design to suit both Commercial & Industrial Requirements
- Available with all types of granular media
- Recommended for Low PPM to PPB levels of contaminants



### Air Purification Equipment

#### Stand Alone Purifier/Pressurizer

- Low Noise, Stand-Alone Construction
- Low Power AC or DC fans
- Multiple stages of both particulate and chemical filters
- Customized design based on requirements
- Recommended for Low PPM to PPB levels of contaminants



### Canister Modules

#### 18CT & 24CT

- Available as both Metal and Plastic Construction
- Contemporary, Low Resistance, Efficient Performance
- Available in 18" & 24" standard depths
- Suitable to work up to 500FPM (2.54m/s)
- Recommended for Low PPM to PPB levels of contaminants



### Air Purification Equipment

#### Electrostatic Precipitators

- High Collection Efficiencies to remove up to 99% of sizes down to 0.01µm particles.
- Effective to remove very small particles like smoke, mist & Fumes.
- Range of dust removal is sufficiently large (0.01 - 1µm).
- Low Pressure Drop.
- Proven Results on Kitchen Exhaust Purification



### Air Purification Equipment

#### Front Access Purifier

- Standard Size Housings with both Particulate & Chemical Media Cassette Modules
- Ideal to install in to any standard Air Handlers & Ducts
- Energy Saving Design for re-circulation requirements
- Available as Standard Size Housings in GI Steel Construction
- Other non-standard sizes & frame materials, also, available.



### Air Purification Equipment

#### Deep Bed Purifier (DBP)

- Single & Double Wall Constructions
- Customized Media Bed Design available to suit both Commercial & Industrial Requirements.
- Redundant fan options available
- Available with in-built control panels & online monitoring systems
- Recommended for High to Low PPM Levels of contaminants



## GAS PHASE SERIES



### High Performance Chemical Filter

## TetraCarb TY

- Exchangeable type Trays with various choices of special Chemical Media
- Customized Media Selection for every requirement Activated Carbon, Ion Exchange Resin and Impregnated Carbon
- Very Low Dust Emission & Very Low Pressure Drop
- Available with various Frame Material and Tray thickness options



### High Performance Chemical Filter

## TetraCarb CE

- Mini-Pleated, Compact & Rigid Construction with various choices of special Chemical Media
- Customized Media Selection for every requirement Activated Carbon Bead, Ion Exchange Resin
- Available as Standard 2" filter thickness in Aluminium Frames
- Other non-standard sizes & frame materials, also, available

### Pleated Filter

## MiraCarb

- Rigid Type Extended-Surface filter.
- Can remove both particulate and gaseous contaminant
- Activated carbon CTC 60% for remove VOCs
- Suitable for Low PPM to PPB levels of contaminants
- Available with all choices of JAF Chemical Media
- Single header, double header and non-header



### Carbon Tray Modules

## Ap Trays

- Metal Trays c/w granular media
- 4x8 Mesh or smaller Mesh sizes
- Suitable to work up to 500FPM (2.54m/s)
- Recommended for Low PPM to PPB levels of contaminants



### Air Purification Media

## Chemical Media

- Customized Chemical Media for all types of chemical pollutants
- Totally Safe & Non-Toxic Fresh (New) Media
- Suitable for all types of Installations, such as Deep Beds, Cassette & Canister Modules
- Easy to Install & Replace



### JAF Lab Services

## Life Analysis

- Reactivity Monitoring Kit (coupon) Analysis
- IQC analysis for chemical media
- Remaining Media Life Analysis
- Development of Online Corrosion Monitoring systems





## EQUIPMENT SERIES



**TERRAGRID**

### Air Purification Equipment

## Kitchen Ecology Unit

- Best choice for Exhaust ventilation in commercial & institutional kitchens.
- Utilizes effective particulate and gaseous removal filters to have proven results.
- Stable & effective for many years with very minimum Maintenance & Replacements.
- Minimum 5 to 6 stages of effective filtration to have assured removal efficiency and performance:
  - Grease Filters to remove the excessive oil grease & Mist.
  - Pre-Filters to remove any bigger size particles down to 10micron.
  - Electrostatic Precipitators to have effective removal of very small particles like Smoke, Mist & Fumes.
  - After-Filters to have all the particles after ESP collected before entering carbon media.
  - Effective Gas Phase Media filters based on type of kitchen and pollutant loads, choices as below:
    - JAF TERRAGRID
    - JAF CASSETTE MODULES
    - JAF CANISTER MODULES
- High Efficiency Final Filters before Exhaust fans to have all the dust and any escaping gas phase media due to abrasion dust.

### Standard Type Holding Frame

## Filter Holding Frame

- Accept any standard filters and depths from any manufacturer
- Pre-filters and final filters can be assembled together with appropriate latches
- Easy installation



### Standard Type Holding Frame

## HEPA Holding Frame

- Design for HEPA filters in built-up filter banks
- All filters are held in place with individual clip
- Standard depth 149mm and 292mm



### Permanent Housing Ceiling Module

## Luna Box

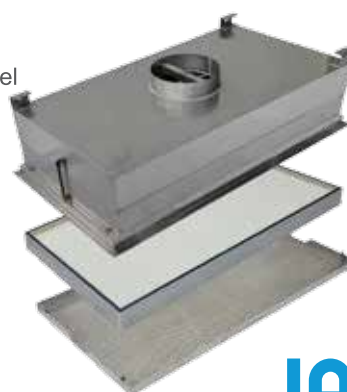
- H13
- 2' X 2', 2' X 4'
- G.I., Aluminium, Stainless steel, Powder baked
- Suitable with Lunakleen or Lunacel HEPA filter
- Room side changeable HEPA filter



### Terminal HEPA filter Module for Gel & Gasket Seal

## LunaPharm Hood

- Stainless steel, Aluminium and galvanised steel with epoxy powder coating
- 1 housing with 2 system applications, allow both gel and gasket seal filter
- Two test ports available, PAO injection port and sampling port
- Quick-connect air-tight to PAO injection and sampling ports



## EQUIPMENT SERIES

### Automatic Renewable Media Air Filter

#### ROTORO

- Heavy-duty, rigidly constructed automatic renewable media filter
- Easy to install, requires little maintenance
- Supplied with high quality filter media



### Automatic Renewable Media Air Filter

#### Cycleaner

- Average arrestance 85%
- IR 120Pa, 140Pa
- Good for high accuracy and storage limited area
- Media for antibacterial purposes



### Standard Type Air Shower

#### Air Shower

- Self-contained chambers
- Minimizes particulate matter entering or exiting the clean space
- High velocity HEPA-filtered air jets



### Standard Type Pass Box

#### Pass Box

- JAF Pass Box are specially designed for the safe transfer of materials between classified areas or between a classified area and a non-classified area.



### Standard Type Pass-Through

#### Pass Box Air Shower

- JAF Pass Box Air Shower are equipped with air jetting system which provides high velocity blower fan and HEPA filtration systems for the safe transfer of materials between classified areas or between a classified area and a non-classified area.



### Standard Type Clean Bench

#### Clean Bench

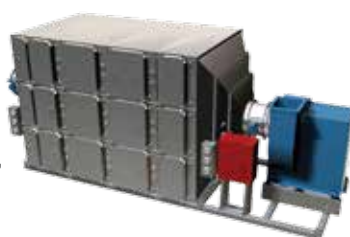
- Standalone adjustable filtered clean air supply
- Laminar air flow
- Ease of assemble and disassembly



### Safe Change Unit

#### BIBO

- Perfect airtight structure filter device to eliminate contamination due to leakage of radioactive dust gas
- Compatible with combination of pre-filter, carbon filter and HEPA filter according to the usage purposes



### Safe Change Housing

#### Safe Change Unit

- Standard, reliable design
- Safety assurance & total resistant proof from contaminations



# JAF AIR FILTER SELECTION GUIDE

Classification	EN 779 Standard			ASHRAE 52.2	Filter Type	JAF Product Selection
	Average Arrestance Efficiency of synthetic dust, AAE%	Grade	Average Efficiency for 0.4µm particles , E%	Minimum Efficiency Reporting Value,		
				MERV		
Pre-Filters Series	50 ≤ AAE < 65	G1	-	1	Grease Filters	Grease Filters, Deamat G50, Deamat G60
	65 ≤ AAE < 80	G2		2-4	Media Rolls	JS Mat
	80 ≤ AAE < 90	G3	-	4-5	Washable Filters	DeaMat S/P
					Media Pads & Rolls	Deamat G85, JS Mat, JS- FB Mat
	≥90	G4	-	6-7	Disposable Pleated Filters	Deakleen, Deakleen Anti-Microbial
					Washable Filters	DeaMat S/P, DeaMat GPM
					Media Pads & Rolls	Deamat G90, JS Mat
					Pocket Filters	MiraDeep Borsa G
Medium High Efficiency Filter Series	-	M5	40 ≤ E < 60	8-10	Media Pads & Rolls	JS Mat, DeaKleen SP, DeaKleen MG
	-	M6	60 ≤ E < 80	11-12	Box Type Filter	MiraCel, MiraCel MB
					Mini-pleated Filters	MiraCel II, MiraCel V
					Pocket Filters	MiraDeep Borsa FG, MiraDeep Borsa
	-	F7	80 ≤ E < 90	13	Box Type Filter	MiraCel, MiraCel MB
					Mini-pleated Filters	MiraCel II, MiraCel V
					Pocket Filters	MiraDeep Borsa FG, MiraDeep Borsa
	-	F8	90 ≤ E < 95	14	Box Type Filter	MiraCel, MiraCel MB
					Mini-pleated Filters	MiraCel II, MiraCel V
					Pocket Filters	MiraDeep Borsa FG, MiraDeep Borsa
	-	F9	≥ 95	15-16	Box Type Filter	MiraCel, MiraCel MB
					Mini-pleated Filters	MiraCel II, MiraCel V
Pocket Filters					MiraDeep Borsa FG, MiraDeep Borsa	
HEPA & ULPA Filter Series	EN 1822 Standard		IEST RP-CC-034.3			
	Most Penetrating Particle Size, Ë % @ MPPS	Grade	Ë % @ 0.3 µm	IEST-RP-CC001		
	≥ 85	H10	≥ 95	-		
					Mini-pleated Filters	LunaCel V
	≥ 95	H11	≥ 98	-	Box Type Filter	LunaCel, LunaCel TS
					Mini-pleated Filters	LunaCel V
	≥ 99.5	H12	≥ 99.95	-	Box Type Filter	LunaCel, LunaCel TS, LunaCel VBX
					Mini-pleated Filters	LunaCel V
	≥ 99.95	H13	≥ 99.99	C (0.3 µm) (≥99.99%)	Box Type HEPA Filter	LunaCel, LunaCel HC, LunaCel TS, TetraCel
					Mini-pleated HEPA Filters	LunaKleen, Lunakleen CF, LunaCel V, TetraKleen
					Module Type HEPA Filters	LunaKleen Hood, LunaFan RSC, LunaFan, LunaPharm Hood, Luna Box
	≥ 99.995	H14	≥ 99.999	D (0.3 µm) (≥99.999%)	Box Type HEPA Filter	LunaCel, LunaCel HC, LunaCel TS, TetraCel
					Mini-pleated HEPA Filters	LunaKleen, Lunakleen CF, LunaCel V, TetraKleen
					Module Type HEPA Filters	LunaKleen Hood, LunaFan RSC, LunaFan, TetraCel, LunaCel TS, TetraKleen LunaPharm Hood, Luna Box
	Ë % @ MPPS		Ë % @ 0.1-0.2 µm			
	≥ 99.9995	U15	≥ 99.999	F (0.1-0.2µm) (≥99.999%)	Box Type HEPA Filter	TetraCel, LunaCel
					Mini-pleated HEPA Filters	TetraKleen, LunaKleen
					Module Type HEPA Filters	LunaKleen Hood, LunaFan RSC, LunaFan, LunaPharm Hood, Luna Box
		≥ 99.99995	U16	≥ 99.9995	F (0.1-0.2µm) (≥99.995%)	Mini-pleated HEPA Filters
	Module Type HEPA Filters					LunaKleen Hood, LunaFan RSC, LunaFan, LunaPharm Hood, Luna Box
	≥ 99.999995	U17	≥ 99.9999	F (0.1-0.2µm) (≥99.9999%)	Mini-pleated HEPA Filters	TetraKleen, LunaKleen
					Module Type HEPA Filters	LunaKleen Hood, LunaFan RSC, LunaFan, LunaPharm Hood, Luna Box



# ACTIVATED CARBON ADSORPTION INDEX

Acetaldehyde	C <sub>2</sub> H <sub>4</sub> O	2
Acetic acid (vinegar)	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	4
Acetic anhydride	C <sub>4</sub> H <sub>6</sub> O <sub>3</sub>	4
Acetone	C <sub>3</sub> H <sub>6</sub> O	3
Acetone nitrile	C <sub>3</sub> H <sub>3</sub> NO	2
Acetylene	C <sub>2</sub> H <sub>2</sub>	1
Acrolein	C <sub>3</sub> H <sub>4</sub> O	3
Acrylic acid (acrylate)	C <sub>3</sub> H <sub>4</sub> O <sub>2</sub>	4
Acrylonitrile (vinycyanide)	C <sub>3</sub> H <sub>3</sub> N	4
Adhesives		4
Allyl chloride	C <sub>3</sub> H <sub>5</sub> Cl	4
Amines		2
Ammonia	NH <sub>3</sub>	2
Amyl acetate (isomers)	C <sub>7</sub> H <sub>14</sub> O <sub>2</sub>	4
Amyl alcohol (pentanol)	C <sub>5</sub> H <sub>12</sub> O	4
Amyl ether	C <sub>10</sub> H <sub>22</sub> O	4
Aniline	C <sub>6</sub> H <sub>5</sub> NH <sub>2</sub>	4
Antiseptics		4
Asphalt fumes		4
Benzene	C <sub>6</sub> H <sub>6</sub>	4
Blood odour		3
Body odour		4
Bromine	Br <sub>2</sub>	4
Butadiene	C <sub>4</sub> H <sub>6</sub>	3
Butane	C <sub>4</sub> H <sub>10</sub>	2
Butanone (MEK)	C <sub>4</sub> H <sub>8</sub> O	4
Butyl acetate	C <sub>6</sub> H <sub>12</sub> O <sub>2</sub>	4
Butyl alcohol (butanol)	C <sub>4</sub> H <sub>10</sub> O	4
Butyl cellosolve	C <sub>6</sub> H <sub>14</sub> O <sub>2</sub>	4
Butyl chloride	C <sub>14</sub> H <sub>9</sub> Cl	4
Butyl ether	C <sub>8</sub> H <sub>18</sub> O	4
Butylene/butane	C <sub>4</sub> H <sub>8</sub>	2
Butyraldehyde	C <sub>4</sub> H <sub>8</sub> O	3
Butyric acid	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	4
Camphor	C <sub>10</sub> H <sub>16</sub> O	4
Caprylic acid	C <sub>8</sub> H <sub>16</sub> O <sub>2</sub>	4
Carbolic acid (phenol)	C <sub>6</sub> H <sub>6</sub> O	4
Carbon dioxide	CO <sub>2</sub>	1
Carbon disulphide	CS <sub>2</sub>	4
Carbon monoxide	CO	1
Carbon tetrachloride	CCl <sub>4</sub>	4
Cellosolve acetate	C <sub>6</sub> H <sub>12</sub> O <sub>3</sub>	4
Chlorine	Cl <sub>2</sub>	3
Chlorobenzene (phenyl chloride)	C <sub>6</sub> H <sub>5</sub> Cl	4
Chlorobutadiene (chloroprene)	C <sub>4</sub> H <sub>5</sub> Cl	4
Chloroform (trichloro methane)	CHCl <sub>3</sub>	4
Chloromethane (methyl chloride)	CH <sub>3</sub> Cl	3
Chloronitropropane	C <sub>3</sub> H <sub>6</sub> ClNO <sub>2</sub>	4
Chloropicrin	CCl <sub>3</sub> NO <sub>2</sub>	4
Cigarette odour		4
Combustion fumes		3
Corrosive gases		3
Creosote		4
Cresol	C <sub>21</sub> H <sub>24</sub> O <sub>3</sub>	4
Cyclohexane	C <sub>6</sub> H <sub>12</sub>	4

Cyclohexanol	C <sub>6</sub> H <sub>12</sub> O	4
Cyclohexanone		4
Cyclohexene	C <sub>6</sub> H <sub>10</sub>	4
Decane	C <sub>10</sub> H <sub>22</sub>	4
Detergents		4
Dibromoethane	C <sub>2</sub> H <sub>4</sub> Br	4
Dichloro ethyl ether	C <sub>4</sub> H <sub>8</sub> Cl <sub>2</sub> O	4
Dichlorobenzene	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	
Dichlorodifluoromethane	CCl <sub>2</sub> F <sub>2</sub>	4
Dichloroethane	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	4
Dichloroethylene	C <sub>2</sub> H <sub>2</sub> Cl <sub>2</sub>	4
Dichloromonofluoromethane	CHCl <sub>2</sub> F	3
Dichloronitroethane	C <sub>2</sub> H <sub>5</sub> Cl <sub>2</sub> NO <sub>2</sub>	4
Dichloropropane	C <sub>3</sub> H <sub>6</sub> Cl <sub>2</sub>	4
Dichlorotetrafluoroethane	C <sub>2</sub> F <sub>4</sub>	4
Diesel fumes		4
Diethyl ketone	C <sub>5</sub> H <sub>10</sub> O	4
Dimethyl aniline	C <sub>8</sub> H <sub>11</sub> N	4
Dimethyl sulphate	C <sub>2</sub> H <sub>6</sub> O <sub>4</sub> S	4
Dimethyl sulphide	C <sub>2</sub> H <sub>6</sub> S	4
Dioxane	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	4
Dipropyl ketone	C <sub>7</sub> H <sub>14</sub> O	4
Epichlorohydrin	C <sub>3</sub> H <sub>5</sub> ClO	4
Ethane	C <sub>2</sub> H <sub>6</sub>	1
Ether	C <sub>4</sub> H <sub>10</sub> O	3
Ethyl acetate	C <sub>4</sub> H <sub>8</sub> O <sub>2</sub>	4
Ethyl acrylate	C <sub>5</sub> H <sub>8</sub> O <sub>2</sub>	4
Ethyl alcohol	C <sub>2</sub> H <sub>6</sub> O	4
Ethyl benzene	C <sub>8</sub> H <sub>10</sub>	4
Ethyl bromide	C <sub>2</sub> H <sub>5</sub> Br	4
Ethyl chloride	C <sub>2</sub> H <sub>5</sub> Cl	3
Ethyl formate	C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	3
Ethyl mercaptan	C <sub>2</sub> H <sub>6</sub> S	3
Ethyl silicate	C <sub>8</sub> H <sub>20</sub> O <sub>4</sub> Si	4
Ethylene	C <sub>2</sub> H <sub>4</sub>	1
Ethylene chlorohydrin	C <sub>2</sub> H <sub>5</sub> ClO	4
Ethylene dichloride	C <sub>2</sub> H <sub>4</sub> Cl <sub>2</sub>	4
Ethylene oxide	C <sub>2</sub> H <sub>4</sub> O	3
Fish/food/fruit odours		4
Formic acid	CH <sub>2</sub> O <sub>2</sub>	3
Freon 11/12/113		4
Gasoline		4
Heptane	C <sub>7</sub> H <sub>16</sub>	4
Heptalene	C <sub>7</sub> H <sub>14</sub>	4
Hexanol	C <sub>6</sub> H <sub>14</sub> O	4
Hexanone (MIBK)	C <sub>6</sub> H <sub>12</sub> O	4
Hydrogen	H <sub>2</sub>	1
Hydrogen bromide	HBr	2
Hydrogen chloride	HCl	2
Hydrogen cyanide	HCN	2
Hydrogen fluoride	HF	2
Hydrogen selenide	H <sub>2</sub> Se	2
Hydrogen sulphide	H <sub>2</sub> S	3
Iodine	I <sub>2</sub>	4
Iodoform	CHI <sub>3</sub>	4

# ACTIVATED CARBON ADSORPTION INDEX

Isopropyl acetate	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	4
Isopropyl alcohol propanol	C <sub>3</sub> H <sub>8</sub> O	4
Isopropyl chloride	C <sub>3</sub> H <sub>7</sub> Cl	4
Isopropyl ether	C <sub>6</sub> H <sub>14</sub> O	4
Kerosene		4
Kitchen odours		4
Krypton delay		4
Lactic acid	C <sub>3</sub> H <sub>6</sub> O <sub>3</sub>	4
Lysol		4
Menthol	C <sub>10</sub> H <sub>20</sub> O	4
Mercaptans (large molecules)	C <sub>2</sub> H <sub>6</sub> S	4
Mercury fumes	Hg	1
Mesityl oxide	C <sub>6</sub> H <sub>10</sub> O	4
Methane	CH <sub>4</sub>	1
Methyl acetate	C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	3
Methyl acrylate	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	4
Methyl alcohol methanol	CH <sub>4</sub> O	3
Methyl bromide	CH <sub>3</sub> Br	3
Methyl butyl ketone Hexanone	C <sub>6</sub> H <sub>12</sub> O	4
Methyl cellosolve (acetate)	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	4
Methyl chloride	CH <sub>3</sub> Cl	3
Methyl chloroform	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	3
Methyl cyclohexane	C <sub>7</sub> H <sub>14</sub>	4
Methyl cyclohexanone	C <sub>7</sub> H <sub>12</sub> O	4
Methyl ether	C <sub>2</sub> H <sub>6</sub> O	3
Methyl ethyl ketone (MEK)	C <sub>4</sub> H <sub>8</sub> O	4
Methyl formate	C <sub>4</sub> H <sub>4</sub> O <sub>2</sub>	3
Methyl glycol	C <sub>3</sub> H <sub>8</sub> O <sub>2</sub>	4
Methyl isobutyl ketone (MIBK)	C <sub>6</sub> H <sub>12</sub> O	4
Methyl mercaptan	CH <sub>4</sub> S	4
Methyl metacrylate ester		4
Methylene chloride	CH <sub>2</sub> Cl <sub>2</sub>	3
Monochlorobenzene phenyl chloride	C <sub>6</sub> H <sub>5</sub> Cl	4
Monofluorotrichloromethane	CCl <sub>3</sub> F	4
Naphta(lene)	C <sub>10</sub> H <sub>8</sub>	4
Nicotine	C <sub>10</sub> H <sub>14</sub> N <sub>2</sub>	4
Nitric acid	HNO <sub>3</sub>	3
Nitrobenzene	C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub>	4
Nitroethane	C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>	4
Nitrogen dioxide	NO <sub>2</sub>	2
Nitro glycerine	C <sub>3</sub> H <sub>5</sub> N <sub>3</sub> O <sub>9</sub>	4
Nitromethane	CH <sub>3</sub> NO <sub>2</sub>	4
Nitropropane	C <sub>3</sub> H <sub>7</sub> NO <sub>2</sub>	4
Nitro toluene	C <sub>7</sub> H <sub>7</sub> NO <sub>2</sub>	4
Octane	C <sub>8</sub> H <sub>18</sub>	4
Octene	C <sub>8</sub> H <sub>16</sub>	4

Oil fumes		4
Ozone	O <sub>3</sub>	4
Palmitic acid	C <sub>16</sub> H <sub>32</sub> O <sub>2</sub>	4
Para-dichloro benzene	C <sub>6</sub> H <sub>4</sub> Cl <sub>2</sub>	4
Pentane	C <sub>5</sub> H <sub>12</sub>	3
Pentanone	C <sub>5</sub> H <sub>10</sub> O	4
Pentene	C <sub>5</sub> H <sub>10</sub>	3
Pentyne	C <sub>5</sub> H <sub>8</sub>	3
Perchloroethylene Tetrachloroethylene	C <sub>2</sub> Cl <sub>4</sub>	4
Pesticides		4
Phenol	C <sub>6</sub> H <sub>6</sub> O	4
Phosgene	CCl <sub>2</sub> O	3
Poisonous gases		4
Propane	C <sub>3</sub> H <sub>8</sub>	2
Propionic acid	C <sub>3</sub> H <sub>6</sub> O <sub>2</sub>	4
Propyl acetate	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	4
Propyl alcohol propanol	C <sub>3</sub> H <sub>8</sub> O	4
Propyl aldehyde	C <sub>3</sub> H <sub>6</sub> O	3
Propyl chloride	C <sub>3</sub> H <sub>7</sub> Cl	4
Propyl ether	C <sub>6</sub> H <sub>14</sub> O	4
Propyl mercaptan	C <sub>3</sub> H <sub>6</sub> S	4
Sewer odours		3
Slaughter odours		3
Styrene monomer	C <sub>8</sub> H <sub>8</sub>	4
Sulphur dioxide	SO <sub>2</sub>	2
Sulphur trioxide	SO <sub>3</sub>	3
Sulphuric acid	H <sub>2</sub> SO <sub>4</sub>	4
Tar fumes		4
Tetrachloroethane	C <sub>2</sub> H <sub>2</sub> Cl <sub>4</sub>	4
Tetrachloroethylene Perchloroethylene	C <sub>2</sub> Cl <sub>4</sub>	4
Tetrahydrofuran	C <sub>4</sub> H <sub>8</sub> O	4
Thiophene	C <sub>4</sub> H <sub>4</sub> S	4
Toluene	C <sub>7</sub> H <sub>8</sub>	4
Toluene di-isocyanate	C <sub>9</sub> H <sub>6</sub> N <sub>2</sub> O	4
Trichloroethane	C <sub>2</sub> H <sub>3</sub> Cl <sub>3</sub>	4
Trichloroethylene	C <sub>2</sub> HCl <sub>3</sub>	4
Turpentine		4
Urea	CH <sub>4</sub> N <sub>2</sub> O	4
Uric acid	C <sub>5</sub> H <sub>4</sub> N <sub>4</sub> O <sub>3</sub>	4
Valeric acid	C <sub>5</sub> H <sub>10</sub> O <sub>2</sub>	4
Valeric aldehyde	C <sub>5</sub> H <sub>10</sub> O	4
Vinegar Acetic acid	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>	4
Vinyl acetate	C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>	4
Vinyl chloride monomer (VCM)	C <sub>2</sub> H <sub>3</sub> Cl	4
Xenon delay		4
Xylene	C <sub>24</sub> H <sub>30</sub>	4

The capacity index has the following meaning:

- 4 = High capacity for all material in this category. One kg take up about 20% to 50% of its own weight-average about 1/3 (33 1/3%). This category includes most of the odour causing substances.
- 3 = Satisfactory capacity for all items in this category. These constitute goods applications but the capacity is not high as for category 4. Absorbs about 10 to 25% of its weight-average about 1/6 (16.7%).
- 2 = Includes substances which are not highly absorbed but which might be taken up sufficiently to give good service under some condition of operation. These require individual checking.
- 1 = Adsorption capacity is low for this compound. Activated carbon cannot be satisfactorily used to remove them under ordinary circumstances.



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