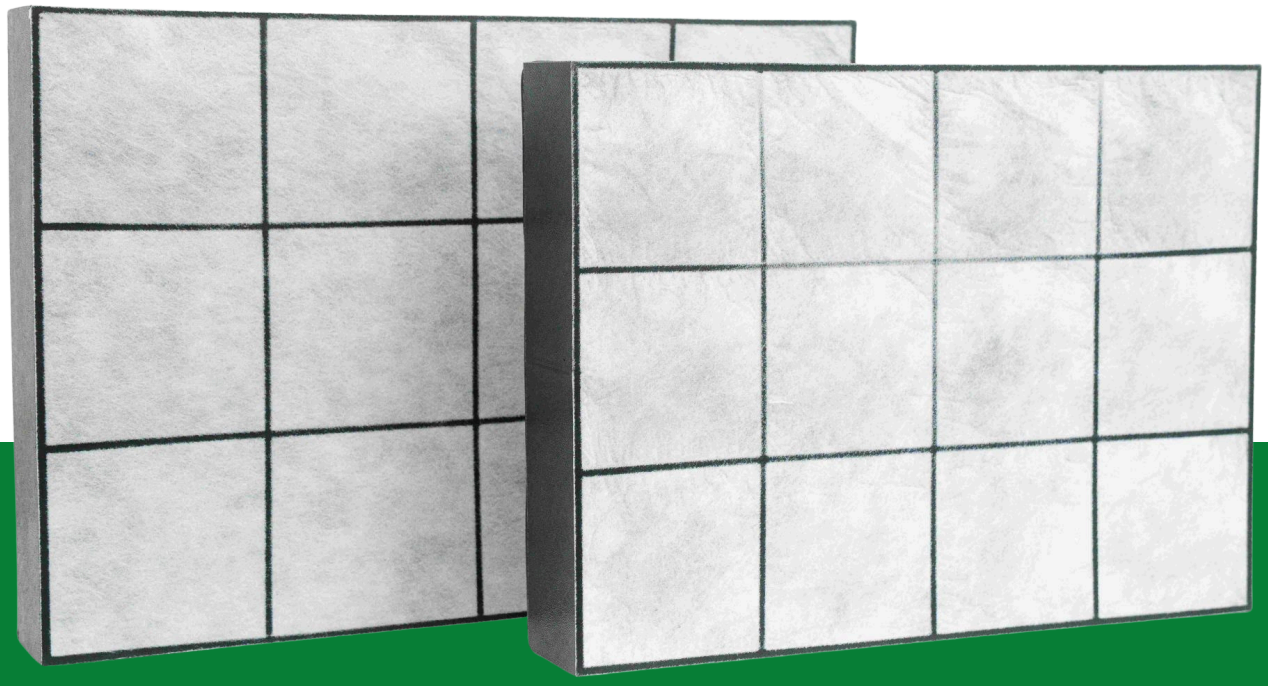
Filter Replacement & Selection Guide

Carbon, HEPA, and specialist filters for laboratory equipment



Replacement filter support for Safelab and third-party laboratory cabinets

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Safelab supplies and fits replacement filters for a wide range of Safelab and third-party laboratory equipment, including recirculating fume cupboards, safety cabinets, downflow benches, laminar flow systems, chemical storage cabinets, and forensic drying cabinets.

Our team can advise on suitable carbon, HEPA, and specialist filter options based on the equipment, application, and substances being handled.

Suitable For

- Recirculating / ductless fume cabinets
- Chemical storage cabinets
- Forensic drying cabinets
- Downflow benches
- Laminar flow cabinets
- Safety cabinets
- Safelab and many third-party systems

▲ Filters are available for recirculating cabinets such as the Airone C700

Why Filter Selection Matters

Correct filter selection helps maintain equipment performance and supports safe, reliable laboratory operation. Filter choice should be based on the equipment, substances handled, usage levels, and any applicable testing or certification requirements.

Carbon Filters for Chemical Vapours and Gases

Activated carbon works by adsorbing gases and vapours onto the surface of the carbon. Its microporous structure creates a large internal surface area, allowing many commonly used chemicals and solvents to be captured as contaminated air passes through the filter.

Some substances require chemically impregnated carbon, which is treated to help neutralise and bind specific contaminants more effectively. Filter life depends on the substances handled, volumes used, frequency of use, and operating conditions.

> Safelab can advise on the most appropriate filter type based on the substances handled, usage levels, and application. A general filter selection guide is provided on the following page.

Filter Selection Guide

Carbon, HEPA, and Specialist Filter Options

The guide below gives an overview of common filter types and typical applications. Final filter selection should always be confirmed against the equipment, substances handled, and usage levels.

Carbon & Specialist Filter Selection

Filter type	Typical use
CMS	Industrial and education laboratory applications up to and including A Level curriculum
C-100	General organic chemicals, solvents, hydrocarbons, odours and many common laboratory substances
C-100E	Ether-based substances
CI-200	Formaldehyde, formalin, and glutaraldehyde-type applications
CI-300	Ammonia and amines
CI-400	Acid gases, acid vapours and related reactive substances
CI-410	Sulphur compounds, mercaptans, hydrogen sulphide and mercury-related applications
CI-420	Cyanides and certain highly reactive/toxic gases
Carbon / HEPA combinations	Applications where both vapour/gas and particulate control are required

▲ This table is a general guide only. Safelab holds detailed chemical compatibility information by filter type and can advise on the most appropriate filter based on the specific substances, volumes, and application.

HEPA, EPA, and Particulate Filters

HEPA and EPA filters are used where particulate control is required, including clean air cabinets, laminar flow systems, safety cabinets, and downflow benches.

Key Features Can Include:

- High-efficiency EPA / HEPA filtration
- H13 and H14 filter options
- Minipleat technology for laminar flow applications
- Low pressure drop
- Leak-free construction
- Test reports and product identification where applicable

H13 / H14 efficiency

H13 filters offer efficiency greater than 99.95%, while H14 filters offer efficiency greater than 99.995% at MPPS.

Appendix A:

CMS Carbon Filter Compatibility

The following list gives examples of substances suitable for Safelab CMS carbon filters. This list is not exhaustive. Please contact Safelab for guidance if a substance is not shown or if application details need to be reviewed.

Inorganic

- Aluminium Chloride and Bromide
- Ammonia
- Ammonia Chloride
- Bromine
- Chlorine
- Chromyl Chloride
- Hydrochloric Acid vapour
- Hydrogen Chloride
- Hydrogen Sulphide
- Iodine
- Iodine Chlorides
- Lead Bromide fumes
- Lead fumes
- Mercury and its compounds
- Nitric Acid vapour
- Nitrogen Oxides (acidic)
- Phosphine
- Phosphorus Chlorides and Bromides
- Phosphorus Oxides
- Phosphorus (white)
- Silicon Tetrachloride
- Sulphur Dioxide
- Thionyl Chloride
- Tin (IV) Chloride
- Titanium Tetrachloride
- Zinc Chloride fumes

Organic

- Acid Amides
- Acid Anhydrides
- Acid Chlorides
- Alcohols
- Aldehydes
- Aliphatic Amines and their salts
- Aliphatic Hydrocarbons
- Aromatic Amines and their salts
- Aromatic Hydrocarbons
- Aromatic Nitro compounds
- Carboxylic Acids
- Esters
- Ethers
- Ketones
- Nitriles
- Organo Halogens
- Phenols
- Pyridine

Dusts and other substances

- Dyes
- Enzymes
- Smoke

Appendix B:

C-100 Carbon Filter Adsorption Guide

The following list gives typical adsorption ratings for substances handled using C-100 carbon filtration. Ratings are provided as a guide only and final filter selection should be confirmed against the equipment, substances handled, volumes, frequency of use, and application.

Adsorption Index Key

A = Very good, 15-20%
B = Good, 5-20%
C = Moderate, <5%
D = Poor, <1%

Filter Notes

1 = Use CI-200 filters
2 = Use CI-300 filters
3 = Use CI-420 filters
4 = Use SM filters
5 = Use CI-410 filters

Aromatic Hydrocarbons

A. Benzene
A. Naphtalene
A. Styrene Monomer
A. Toluene
A. Toluidine
A. Xylene

Aliphatic Hydrocarbons

D. Acetylene
B. Iso Butane
B. Butylene
C.Butadiene
A. Cyclohexane
C. Heptylene
B. Hexane
C. Hexylene
D. Methane
B. Pentane
C. Propane
B. Propylene

Acids

A. Acetic
A. Acetic Anhydride
A. Acrylic
A. Butyric
A. Caprilyc
A. Carbolic
B. Formic
A. Lactic
A. Palmitic
A. Phenol
A. Proprionic
A. Valeric

Alcohols

A. Amyl
A. Butyl
A. Cyclohexanol
A. Ethyl
A. Isopropyl
B. Methanol (Methyl)
A. Propyl

Aldehydes & Ketones

C. Acetaldehyde 1/
B. Acetone
B. Acrolein
B. Acrylaldehyde
A. Benzaldehyde
B. Butyraldehyde
A. Caproaldehyde
A. Crontonaldehyde
A. Cyclohexanone
A. Diethyl Ketone
A. Dipropyl Ketone
C. Formaldehyde 1/
B. Glutaraldehyde 1/
A. Mesityl Oxide
A. Methyl Butylketone
A. Methyl Ethylketone
A. Methyl Isobutylketone
B. Propionaldehyde
A. Valeraldehyde
B. Valeric Aldehyde

Appendix B continued:

Adsorption Index Key

A = Very good, 15-20%
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Filter Notes

1 = Use CI-200 filters
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Esters

A. Butyl Acetate
A. Cellosolve Acetate
A. Ethyl Acetate
A. Ethyl Acrylate
B. Ethyl Formate
A. Isopropyl Acetate
B. Methyl Acetate
A. Methyl Acrylate
B. Methyl Formate
A. Propyl Acetate

Ethers — C-100E Filter

A. Amyl
A. Butyl
A. Cellosolve
A. Dioxane
B. Ethyl
B. Ethylene Oxide
A. Isopropyl
B. Methyl
A. Methyl Cellosolve
A. Propyl

Halogens

A. Bromine
A. Butyl Chloride
A. Carbon Tetrachloride
B. Chlorine
A. Chlorobenzene
A. Chlorobutadiene
A. Chloroform
A. Chloro-Nitropropane
B. Chloro Picrin
A. Dibromoethane
A. Dichlorobenzene
A. Dichlorodifluoro-Ethane
B. Dichlorodifluoro-Methane
A. Dichlorethane
C. Dichloroethyl-Ether
A. Dichloroethylene
A. Dicholoromethane
A. Dichloromonofluoro Methane
A. Dichloropropane
B. Dichlorotetrafluoro Ethane
A. Ethane
B. Ethyl-Bromide
B. Ethyl Chloride
A. Ethylene Chlorohydrine
A. Ethylene Dichloride
B. Fluortrichloromethane
C. Freon
C. Hydrogen Bromide
C. Hydrogen Chloride
C. Hydrogen Fluoride
B. Hydrogen Iodide
A. Iodine
A. Iodoform
B. Methyl-Bromide
A. Methyl Chloride
A. Methyl Chloroform
A. Monochlorobenzene
B. Monofluorotrichloro Methane
A. Paradichlorobenzene
C. Perchloroethylene
A. Phosgene
A. Propyl Chloride
A. Tetrachloro Ethane
C. Tetrachloro-Ethylene
B. Trichloro-Ethylene
A. Vinyl Chloride

Appendix B continued:

C-100 Carbon Filter Adsorption Guide

Adsorption Index Key

A = Very good, 15-20%
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Nitrogen Compounds

D. Ammonia 2/
A. Amines 2/
A. Aniline
A. Diethyl-Amine
D. Dimethyl-Amine
D. Ethyl-Amine
A. Hydrogen Cyanide 3/
A. Indole
A. Nicotine
B. Nitric acid fumes

Need help confirming filter compatibility?

This list is provided as a guide only. Final filter selection should be confirmed against the equipment, substances handled, volumes, frequency of use, and application.

Need help selecting a replacement filter?

Contact Safelab with your equipment details and substances handled, and our team will advise on the most suitable filter option.

Detailed chemical compatibility information is available on request.

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