CHOOSING A FILTER FOR YOUR HOME COFFEE MACHINE | SOFTENING

CONTENTS

1. Overview

Water filtration is often overlooked, but it is a hugely important factor to be considered when purchasing a coffee machine for home use. Given that 90% of an espresso is made up of water, the chemistry of the water has a huge impact on the quality of your coffee experience. The chemistry of your incoming water can also prove to be the difference between your espresso machine working for just a few months, or flawlessly for years to come.

2. Key Components of Filter Performance

When selecting a water filter for your home coffee machine, there are five key components of filter performance to be considered, which differ in importance from location to location depending on your water source. These key components are: sediment reduction, chemical reduction, total hardness reduction, total dissolved solids, and pH levels.

a. **Sediment Reduction** – Sediment reduction is the removal of small particles such as dirt, sand, grit, rust, and other particulate matter which helps to protect your coffee machine's parts, joints, and flow pathways. Removing these particles also acts as a catalyst for unwanted scale development and helps to prevent the boiler from accumulating sediment, which can form a build-up of sludge within the base of the boiler.

b. **Chemical Reduction** – The reduction of chemicals is essential to a quality cup of coffee, and allows for the natural aromas and flavours of your coffee to fully develop. When heated, chemicals such as chlorine greatly affect the taste of espresso and can also have a detrimental affect on stainless steel boilers.

c. **Total Hardness Reduction** – Total Hardness (TH) is the presence of calcium and magnesium salts within a water source. Calcium and magnesium salts can precipitate to form scale, and this process is exacerbated when water containing these elements is heated. Scale can coat boiler surfaces, elements, valves, solenoids, and water flow parts within a coffee machine, which adversely affects temperature, pressure, steam performance, flow rate, and aesthetics of the water within your machine. Whilst scale can be reduced by chemically descaling the machine, installing appropriate filtration will drastically slow the rate of scale accumulation.

While most filtration systems and cartridges can reduce the presence of sediment and chemicals quite successfully, it is the reduction of scale that creates the biggest challenge. The introduction of an independent water softener or use of a filtration product that is capable of all five of these components can reduce TH levels by up to 90%. Water softening filters and systems utilise ion exchange resins to prevent the formation of scale. The process of an ion exchange involves the swapping of magnesium and calcium ions for sodium ions. This reduces the TH down to a manageable level without greatly affecting the pH for serving espresso.

d. **Total Dissolved Solids** – Total Dissolved Solids (TDS) is the total measurement of all dissolved materials within your water source, including metals, salts, and minerals. A reading of over 250ppm means that you may require an alternative filter solution such as a Reverse Osmosis System (RO). In general, RO systems are not recommended for use with home espresso machines, as they can deplete your water source of essential minerals if used in the wrong environment. In some situations where extremely hard water is present, RO systems may be appropriate for home espresso machines, but only after discussion with a coffee water specialist.

e. **pH Levels** – Ideally, the pH of your water should be as close to neutral (7) as possible. Low pH in particular can occur in areas of high TH and TDS. Whilst some manufacturers produce water filters that contain buffering media, there are many areas within Australia where they are ineffective due to high TDS and TH. In these areas, RO filtration systems may be considered as suitable options.

3. Filter Options

Bombora Supplies stocks several options that are perfect for use with a domestic coffee machine. When choosing a filter that is right for you, it is important to take into account the levels of TDS and TH in your water supply.

Low-level TDS and TH systems are designed to work for an average of 12-months in a home situation, based on low-level readings of TDS (<150ppm) and TH (<75ppm). These locations will be predominately on the East Coast of Australia.

Mid-level TDS and TH systems are designed to work for an average of 12-months in a home situation, and are recommended to suit locations with mid-level readings of TDS (<250ppm) amd TH (<100ppm). These locations will predominantly be on the East Coast of Australia, but may include selected areas of South Australia, Western Australia, and the Northern Territory.

Locations with high-level TDS (>300ppm) generally will have high chloride levels with relatively low TH levels (<100ppm). This means that softening filters will not resolve the issue, with chlorides and chloramines being free to attack the boiler. In locations where there are high-level TDS readings, a RO filtration system would need to be considered. For these locations, please call our water filtration team on 1300 742 249 for a solution that is specific to your needs.

Listed below are four low-level and mid-level TDS and TH filtration kits that we recommend from Brita for home coffee machine use: C50KIT, C150PLVKIT, C150KIT-FINEST, and C150DIRECT-FINEST.

C50KIT

C150PLVKIT

C150KIT-FINEST

C150DIRECT-FINEST

a. C50KIT (Low-level TDS and TH)

The C50KIT uses the latest PURITY range of filters from Brita to deliver clean drinking water that has been softened to protect household appliances such as espresso machines, ions, kettles, and steamers.

Features:

- Three-stage Brita Purity filter for effective sediment, chemical and TH reduction

- Blending valve on the head to adjust for both soft and hard water areas

- DIY kit which includes all fittings for standard installation (suits any cold water connection, mixer tap or dishwasher)

- Shut-off valve on head for easy filter changes

- Quality designer gooseneck faucet for easy use pouring

- Multifunction Pressure Limiting T Valve for easy installation and protection from high pressure surges and backflow

- 10 test strips to monitor filter performance in the reduction of TH

- Filter suitable for 12-months for most household installations

C50KIT

b. C150PLVKIT (Low-level TDS and TH)

The C150PLVKIT uses the PURITY range of filters from Brita to deliver clean drinking water that has been softened to protect appliances such as espresso machines, ice machines, and combi ovens. This kit allows for easy installation to a 1/2” male tap for quick machine installations. It has a 350pka PLV, 1.5m of flexible high-pressure poly hose, PURITY C150 filter, and the head assembly. The outlet of the head is 3/8” male and fits most braided hoses that are standard with most espresso machines. This kit also includes a brass bush to allow the outlet to be a 1/2” male.

Features:
- Three-stage Brita Purity filter for effective sediment, chemical and TH reduction

- Blending valve on the head to adjust for both soft and hard water areas

- DIY kit which includes all fittings for standard installation (suits any cold water connection, mixer tap or dishwasher)

- Shut-off valve on head for easy filter changes

- Multifunction Pressure Limiting T Valve for easy installation and protection from high pressure surges and backflow

- Filter suitable for 12-months for most household installations

C150PLVKIT

c. C150KIT-FINEST (Mid-level TDS and TH)

The C150KIT-FINEST uses the latest ion exchange and carbon technology from Brita’s FINEST range of filters. This filter kit delivers clean, clear, and crisp drinking water that has been softened to protect household appliances including domestic espresso machines, irons, kettles, and steamers.

Features:
- Three-stage Brita FINEST filter for effective sediment, chemical and TH reduction

- DIY kit which includes all fittings for standard installation (suits any cold-water connection, mixer tap or dishwasher)

- Shut-off valve on head for easy filter changes
- Quality designer gooseneck faucet for easy use pouring

- Multifunction Pressure Limiting T Valve for easy installation and protection from high pressure surges and backflow

- 10 test strips that allow you to set your water filter and monitor the filter’s performance in the reduction of TH

- Filter suitable for 12-months for most household installations

C150KIT-FINEST

d. C150DIRECT-FINEST (Mid-level TDS and TH)

The C150 Finest Direct Kit provides all the benefits of the C150-FINEST including the latest ion exchange and carbon technology from Brita's FINEST range of filters. This kit also includes a tee-off and isolation valve to connect up your espresso machine for direct plumbing. The C150DIRECT-KIT-FINEST uses the latest FINEST range of filters from Brita to deliver clean drinking water that has been softened to protect household appliances such as espresso machines, irons, kettles, and steamers.

Features:
- Three-stage Brita FINEST filter for effective sediment, chemical and TH reduction

- DIY kit which includes all fittings for standard installation (suits any cold-water connection, mixer tap or dishwasher)

- Shut-off valve on head for easy filter changes
- Quality designer gooseneck faucet for easy use pouring

- Multifunction Pressure Limiting T Valve for easy installation and protection from high pressure surges and backflow
- Brass Tee with built-in isolation tap for direct connection to your machine.

- 10 test strips that allow you to set your water filter and monitor the filter's performance in the reduction of TH

- Filter suitable for 12-months for most household installations

C150DIRECT-FINEST

4. Filter FAQ's

Q: How do I find out my TH and TDS?

A: This information is freely available from your local water authority. It can usually be found on their website, or you can call and ask for their most recent results. Alternatively, Bombora Supplies provides a number of products that will allow you to test your water at home with ease. For more information on water testing and the best method that might be right for you, please visit our Water Articles section on our website.

Q: My water is not that hard; do I still need a water filter that softens the water?

A: The heating and cooling of water is what primarily facilitates the formation of scale to occur. Home-use coffee machines are generally turned on and off more often than commercial machines, making them more prone to scale development. This is still the case in areas which have relatively soft water. Smaller boilers can also accentuate this issue further. A good combination softening system can minimise any level of TH to make the issue of scale more manageable.