essencia

Carbon Filter System

Preferred by top distillers, the essencia Carbon Filter System purifies alcohol like no other system, with its high-end multi-stage dual-cartridge system.

Clean and simple to use. No need for messy carbon. Simply pour alcohol into the system, allow it to filter, then draw it from the tap.

The multi-batch Carbon Cartridge will treat 5 batches, and the Ceramic Cartridge will treat 50 batches before replacement.

The unique essencia Carbon Filter System produces the best results by combining the sub-micron properties of ceramic filtration with effectively packed beds of activated carbons made specifically for alcohol treatment.

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ON GOING USE

STEP 1

Dilute the alcohol prior to carbon treatment.

Dilute your alcohol with water to 40% ABV (if you have just primed your cartridges or system with water, see "priming adjustment" below). Unless high strength alcohol is specifically required for a liqueur etc, your alcohol should be watered down to normal drinking strength (40% ABV) before treatment using the essencia Carbon Filter. There are two key reasons for this:

1. The essencia Carbon Filter has been specially designed to treat the water as well as the alcohol, which means the entire end product has been treated to ensure maximum quality with no contaminants.
2. The highly specialized carbon used to treat the alcohol is more efficient at removing the impurity particles when the alcohol is diluted. This is simply because these particles become more soluble in higher strength alcohol.

PRIMING ADJUSTMENT:

If you have primed the cartridges and/or flushed the filter with water, there will be water remaining in the system. Over a 9L alcohol batch, you can expect this extra water to reduce the ABV by approximately 5%. To equalise this over the batch, add 45-50% ABV alcohol at the start to allow for the water in the cartridges. Adjust ABV by adding water or undiluted alcohol to the filter system.

TEMPERATURE ADJUSTMENT:

Whenever alcohol is watered down a chemical reaction occurs which will cause the temperature of the mix to increase. It is therefore important to measure the temperature of the alcohol whenever you are measuring alcohol strength. A spirit hydrometer is usually calibrated at 20°C (68°F). 90% ABV alcohol will read 90% at 20°C (68°F). If the alcohol temperature is lower than 15°C (59°F) or higher than 25°C (77°F). Adjust readings using temperature correction according to your hydrometer instructions.

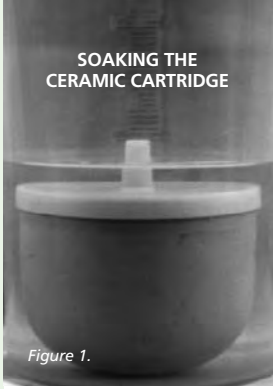

Figure 1.

Figure 2.

FILTER PARTS

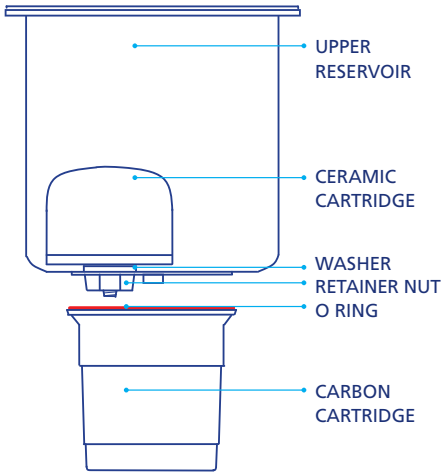

Figure 3.

WARNING

- **Do not tip the unit to empty the lower reservoir as this may damage the upper reservoir.**
- **The Carbon Cartridge is a disposable item and cannot be refilled.**
- **To enable this cartridge to work effectively, a specific and special activated carbon is used.**
- **Once five batches have been processed it may appear that the Carbon Cartridge is still working because the alcohol will smell clean. This is because the odour producing particles are removed by the Ceramic Cartridge. Failure to replace the Carbon Cartridge after five batches will result in untreated alcohol.**

STEP 2

Filter your alcohol.

The essencia Carbon Filter System uses gravity to filter alcohol. It filters alcohol when the volume of fluid in the upper reservoir is more than the volume of fluid in the lower reservoir. As the level of product in the upper reservoir drops, the flow rate will gradually reduce. The system stops processing when the volume in each reservoir is the same. The maximum flow rate (approx. 500ml per hour) occurs when the upper reservoir is full and the lower reservoir is almost empty. The tap is left open and spirit is being collected in another vessel (See option 2. Continuous processing). Because of this, there are three options for processing your alcohol.

Option 1: Batch processing

a) Fill the upper reservoir with approximately 4.5L of alcohol. If alcohol is over 45% ABV the blue lid must not be fitted as the vapour may cause damage to the lid (cover the filter with a dinner plate or similar if filtering high strength alcohol).

b) Filtered product will emerge into the lower reservoir from the bottom of the Carbon Cartridge.

c) Filtered product can be drawn off through the tap as required.

d) Top up the upper reservoir as the level drops.

Option 2: Continuous processing (maximum flow rate)

Process with the tap open. Filtered product will flow from the tap as it is filtered and can be collected in another vessel underneath the open tap.

Option 3: Store and process as required

Store your alcohol in the filter until you are ready to use it. Continue to top up the upper reservoir until both reservoirs are full. Draw off filtered product as required for use, topping up the upper reservoir as the level drops.

IMPORTANT TIP - stalled flow: A stalled flow or unusually slow flow rate is when there is no flow or almost no flow when the upper reservoir is full and the lower reservoir is empty. This can occur if an air lock forms in the Ceramic Cartridge. If this occurs, prime the Ceramic Cartridge as in Step A to remove the airlock.

STEP 3

Storing your filter system.

When filtering is complete, approximately 400ml remains in the lower reservoir below the level of the tap. This should be left in the reservoir to prevent the carbon from drying out. Do not tip the unit to empty it as this may cause damage. A very small amount of unfiltered product will remain in the upper reservoir. This should also be left until re-using the filter as the small amount of alcohol vapour is a good mould inhibiter. If the system is completely emptied for some reason, please return to System Set Up, Step A.

FILTER MAINTENANCE

If used in accordance with these instructions, the essencia Carbon Filter System requires very little maintenance. To ensure optimum performance, the cartridges need replacing at different intervals. The Ceramic Cartridge may need cleaning periodically.

CLEANING THE CERAMIC CARTRIDGE.

Carefully remove the cartridge (the Carbon Cartridge must be removed first), then scrape the surface with either a hard bristle brush or a pot scrubber under running water, until the white ceramic material is visible again. Care must be taken when handling the cartridge as it is fragile.

REPLACEMENT INTERVALS OF THE CARTRIDGES

The Carbon Cartridge has been designed to treat approximately 45 litres (five batches only) of alcohol at 40% ABV. The Carbon Cartridge must then be replaced to ensure a quality product is maintained. The Ceramic Cartridge will treat approximately 450 litres (50 batches) before replacement is required.

Note: Replacement intervals will be affected by the quality of the product being filtered. Running high strength alcohol through the filter is not more economical.

The alcohol carbon in the Carbon Cartridge will only treat a certain amount of alcohol, ie 45 litres at 40%, or 33 litres at 55%. Higher strength alcohol merely reduces the effectiveness of the alcohol carbon at removing the impurities.

TO REPLACE THE CARBON CARTRIDGE.

- Simply un-screw the used cartridge and screw in the new one (after priming), being careful not to damage the nylon thread.
- Do not over tighten the Cartridge.
- Tighten only until the '0' ring just seals against the upper reservoir.

Replacement parts: Over time some plastic parts may get damaged. To extend the life of your essencia Carbon Filter System, most parts are generally available as replacements.

Alcohol treatment using the *essencia* Carbon Filter System

SYSTEM SET UP

STEP A

Prime the cartridges before use.

Before the two filter cartridges are used for the first time, they need to be primed overnight with water to prevent an airlock or potential mineral salt haze. It is important to carefully follow these instructions.

a) If attached, carefully remove both the Ceramic and Carbon Cartridges from the Upper Reservoir. Handle the Ceramic Cartridge with care as it is fragile.

b) Soak the Ceramic Cartridge in a jug or pot of cold water overnight (a 3 lt. plastic jug is ideal) *(see figure 1, opposite page)*. Ensure the plastic nozzle of the cartridge is pointing upwards and is above the water level. This allows the air to more easily escape therefore avoiding the chance of an airlock.

c) Immerse the Carbon Cartridge in a separate jug or pot of cold water and soak overnight *(see figure 2, opposite page)*.

d) Drain the excess water from the Carbon Cartridge by leaving it upside down in the sink for a few minutes.

Be sure to always support the Carbon Cartridge when handling the upper reservoir with the cartridges fitted.

STEP B

Set up the essencia Carbon Filter System.

a) Place the base on a firm surface.

b) Fit the lower reservoir (main unit) onto the base.

c) Remove the plastic retainer nut from the Ceramic Cartridge screw. Fit the Ceramic Cartridge inside the Upper Reservoir, inserting the screw into the hole in Upper Reservoir *(see figure 3, opposite page)*.

Ensure the washer sits between the base of the cartridge and the inside of the upper reservoir.

Fit the retainer nut to the outlet of the Ceramic Cartridge underneath the Upper Reservoir being careful not to over-tighten it.

d) **Lightly** screw the Carbon Cartridge to the underside of the Upper Reservoir ensuring the o-ring is in place. Tighten until the o-ring just seals against the Upper Reservoir. **Be careful not to over-tighten or damage the thread.**

Figure 4.

f) Fit the complete upper reservoir/cartridge assembly into the lower reservoir (main unit).

STEP C

Flush the system with 3L of water.

Flush the filter with water before use to flush any mineral salts in the carbon, and to prime the cartridges. Mineral salts are sometimes present in the activated carbon of a new cartridge. Whilst they are harmless, they can be absorbed into the alcohol becoming insoluble and forming a fine sediment, crystals or haze (especially at lower temperatures). If this occurs, run the spirit through the filter once again and the Ceramic Cartridge will remove the mineral salt haze.

a) Pour three litres (3L) of water into the upper reservoir so that the Ceramic Cartridge is completely covered. Water will begin to emerge from the Carbon Cartridge.

b) Leave overnight or until the water has passed through both cartridges into the lower reservoir.

c) Check for any leaks around the tap. Empty the upper and lower reservoirs. It may be necessary to rinse the lower reservoir as a small amount of carbon may be present.

d) Check that 3L of water has collected in the lower reservoir. If not, you may have an airlock. If this occurs, re-prime the Ceramic Cartridge as in Step A to remove the air.