

LIFESAVER[®]

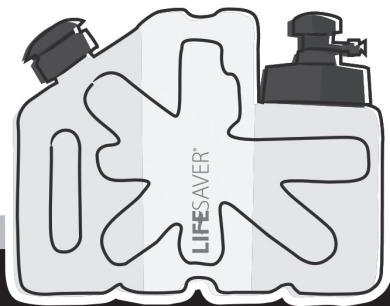
cube[™]

**FILTER
CLEAN WATER
INSTANTLY**

**FILTERS OUT
VIRUSES,
BACTERIA, CYSTS &
PARASITES**



**INVENTED, DESIGNED
AND MANUFACTURED
IN GREAT BRITAIN
PATENTED WORLDWIDE**



- The LIFESAVER® cube™ filters out bacteria, viruses, cysts, parasites and fungi from water.
- LIFESAVER® water filters meet an adaption of NSF Protocol 231 based on recommendations of the U.S. Environmental Protection Agency (EPA). The LIFESAVER® cube filters bacteria to a minimum of Log 6 (99.9999%), viruses to a minimum of Log 4 (99.99%) and cysts to a minimum of Log 3 (99.9%).
- LIFESAVER® cube™ incorporates FAILSAFE™ technology - an automatic indicator of when the cartridge needs replacing. When the service life of the cartridge has been fulfilled, the filter stops passing water, taking away the guess work of knowing if your filter is still effective in filtering out contaminants.

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IMPORTANT

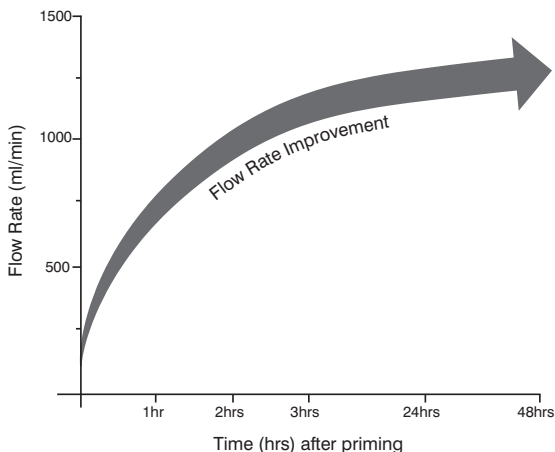
Please read this manual before using the LIFESAVER® cube™

PRIMING THE LIFESAVER® CUBE™

Priming is an essential step that must be performed within 3 years* from the date of manufacture and before you start to use the cube to drink from. The cartridge membranes are infused with glycerin during the manufacturing process to keep them hydrated up until the cube is primed. During priming you are flushing water through the cartridge, which removes this glycerin. Glycerin is a natural food source and whilst the presence of glycerin is not harmful, you should not drink the water used for priming the cube. It is imperative to follow the priming instructions to ensure that you flush all of the glycerin from the cube; this will mitigate the risk of bacteria forming on the output side of the cartridge.

*Except where foil wrapped cartridges are purchased.

IMPROVED FLOW RATE OF THE LIFESAVER® CUBE™ OVER TIME



PRIMING - BEFORE FIRST USE



- 1 Unscrew and remove the pump from the cube™. Completely fill the cube with clean water. Screw the pump firmly back into place and leave to stand for 10 minutes.



- 2 After 10 minutes empty the water out of the pump end and refill.



- 3 Pump 30-40 times approximately and turn the tap to the open position. Lay the cube on its side (tap facing down) to encourage water to flow. Allow the cube to drain on its side for approximately 10 minutes, until flow stops.

- 4 Repeat step 3 until approximately 1 inch/2.5cm of water remains in the cube. Empty the remaining water out of the pump end.



- 5 Your cube™ is now primed and ready for routine use. Leave approximately 1 inch/2.5 cm of water in the cube at all times.



- 6 If you are not using immediately, leave the cube full of clean water and allow to soak for a further 24 - 48 hours to achieve a faster flow rate. Discard the water used in the soaking process to prevent bacteria growing in the glycerin water which could prematurely block the cartridge.

ROUTINE USE - AFTER PRIMING THE LIFESAVER® CUBE™

After priming, fill the cube with water. Cleaner water will result in a faster flow rate and longer cartridge life. When filling the cube with water, keep the tap area clean and free from contamination.



- 1 Fit an activated carbon filter to the cube (if required). See page 9 for instructions for how to install.



- 2 Unscrew and remove the pump from the cube. Completely fill with water. Screw the pump back into place.



- 3 Ensure the tap is closed and pump 30 - 40 times.



- 4 Turn the tap to open position* to enable clean drinking water to flow.



- 5 Continue to pump whilst the tap is open at a rate of approximately 1 pump per second to maintain flow. Turn the tap off after use.

⚠ CAUTION

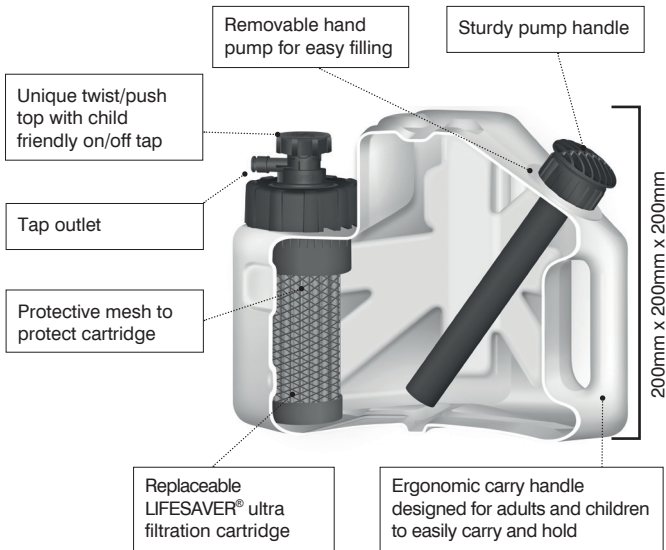
- Keep the membranes of the cartridge in the cube hydrated by storing at least 1 inch/2.5 cm of water in the cube at all times whilst keeping the cube sealed with the pump and cartridge in place. Failure to do so will cause the membranes to dry out, the nano-filter pores to close and the system to shut down. This is not covered under your warranty and you will need to purchase another cartridge (see page 15 for storage instructions).
- Do not pump if water is not flowing from the cube; this will over pressurise the cube, which will result in the product becoming over stressed. To release pressure from the cube unscrew the pump slowly by $\frac{1}{4}$ turn until you hear a hiss sound. Hold on to the pump firmly whilst unscrewing.
- Do not operate the pump whilst the cube is empty

● Helpful tips

- The flow rate will be faster when the cube™ is full of water.
- The flow rate will be faster when the cube™ is used with warmer water therefore glacier meltwater will slow the flow.
- The cube™ is designed to be used on a table and also to be held by hand to pour water into a glass. As the water level becomes low, pick up the cube and use the cube like a jug or lay the cube on its side, with the tap facing downwards. Both methods will increase water flow.
- *To open the tap either:
 - Push down on the tap for an instant flow of water.
 - Twist the tap clockwise and lock into position for a continuous flow of water. To release the tap from the lock twist anti-clockwise to return the tap to the closed position.

THE CUT AWAY OF THE LIFESAVER® CUBE™

THE CUT AWAY OF THE LIFESAVER® CUBE™



ACTIVATED CARBON FILTER

How to install a new activated carbon filter

The high specification activated carbon block will improve the palatability of water by removing chlorine, taste and odour.

- Unscrew the pump to release pressure and empty the cube of water through the pump hole. ①
- Unscrew and remove the tap cap ② and tap. Leave the cartridge in place; do not touch the sterile face of the cartridge.
- Remove the old activated carbon filter by gently tapping the side of the tap on a solid surface. The carbon filter will start to fall out of the tap, hold the side of the carbon filter to completely remove from the tap. Insert a new activated carbon filter into the tap and re-screw on to the cube. ③
- Ensure the tap and cap are well sealed and the cube operates without leaks.

When fitted, you may notice that the water flowing out of the cube contains grey / black particles. This is harmless carbon dust and once the activated carbon filter has been used 2 - 3 times, this will disappear.

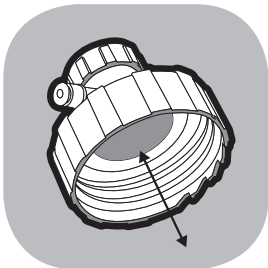
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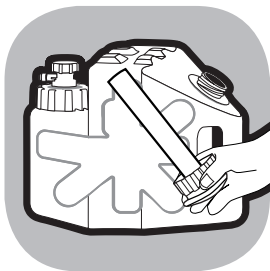
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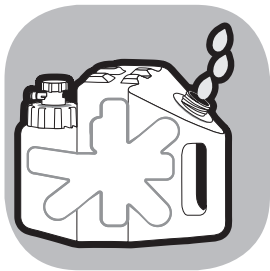
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MAINTENANCE AND CARE

Over the life of the cartridge, dirt and debris will build up on it's surface. To reduce this build-up, clean the cube on a regular basis.

How to clean the cube, whilst outdoors

- With the tap in the closed position, unscrew and remove the pump. **1**
- Fill the cube $\frac{1}{2}$ full with the cleanest water available and gently swirl around the cube to remove large pieces of debris and dirt lying at the bottom of the cube. Empty the water through the pump hole.
- Refill the cube $\frac{1}{2}$ full with the cleanest water available and re-fit the pump. **2**
- Continue to swirl the water around the cube™, turning the cube upside down to distribute the water around the cube. Continue for at least 1 minute.
- Unscrew and remove the pump and empty the water through the pump hole. **3**
- Continue this process until the water being tipped away is visibly clean.

⚠ CAUTION

Do not attempt to touch the membranes of the cartridge through the protective mesh as this can cause damage and will void your warranty. Keep the cartridge free from dirt and debris.

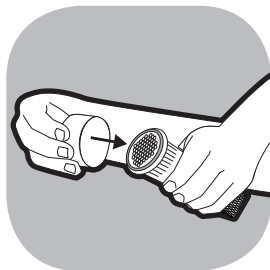
How to clean the cube, whilst indoors in a clean environment

- Unscrew and remove the pump
- Unscrew and remove the tap cap and tap. **1**
- Remove the cartridge from the cube by prising under the flange (the lip of the filter). Remove the two O-rings from the cartridge.
- Place the protective cap provided over the end of the cartridge, this will prevent contaminated water from entering the clean water area of the cartridge during cleaning. **2**
- Soak the cartridge in a basin of warm water for 30 minutes. Gently move the cartridge through the water to dislodge any dirt or debris.
- Rinse the cartridge with clean running water and leave to drain for 4 hours in cool conditions. **3**
- Whilst the cartridge is removed wash all of the plastic components in warm water with a mild detergent solution using a soft cloth. Rinse thoroughly with running water and leave to drain for 1 hour.
- Fit a new O-ring on the underside of the cartridge. The top O-ring can be cleaned and reused. Now remove the protective cap and re-assemble the cube. The cube comes with a service pack containing 5 spare O-rings.

1



2



3



How to check for cartridge damage

The ultra filtration membranes have been integrated into a robust cartridge and have been designed for a long service life. If treated incorrectly the filter is liable to break.

The membrane integrity check should be performed every time the cube has been subjected to shock or when you suspect damage may have occurred to the cube.

⚠ CAUTION

Do not subject the cube to shock or misuse the cube by inserting objects into the cartridge.

1



Membrane Integrity check

- Unscrew and remove the pump from the cube. 1/2 fill the cube with water. Screw the pump back into place.
- Ensure the tap is closed and pump 30-40 times to pressurise the cube.
- Turn the tap to the open position to enable water to flow
- Continue to pump whilst the tap is open at a rate of approximately 1 pump per second to maintain flow. Turn the cube slowly through 180° until upside down and monitor water flow.
- If the cube spits water from the tap in any of the positions and does not flow freely than air is being expelled from the tap along with water. This means that the cartridge is damaged. Stop using the cube and replace the cartridge following instructions on page 13.
- If water isn't spitting from the cube, ¹ but water flow is slower than normal despite the cube being 1/4 full at either the horizontal or vertical position, clean the cube as dirt and debris maybe causing slower water flow. If the cube has been cleaned and water flow remains slower than normal, the cartridge may be reaching the end of its life (see page 16 for FAILSAFE™ TECHNOLOGY).

How to install a new cartridge

- Unscrew the pump and empty the cube of its water through the pump hole.
- Unscrew and remove the tap cap and tap.
- Remove the cartridge from the cube by prising under the flange (the lip of the cartridge) and discard as recyclable plastic waste.
- Once the cartridge is removed wash all of the plastic components in warm water with a mild detergent solution using a soft cloth. Rinse thoroughly under running water and leave to drain for 1 hour.
- Remove the new cartridge from its packaging and ensure that the two O-rings are positioned tightly against the flange (lip) of the cartridge. Insert the new filter **1** into the cube and press down to fix into place.
- Screw the tap cap and tap onto the cube. Ensure that the tap cap is tightened firmly with the tap pointing straight forward. **2**
- You are now ready to prime the cartridge. (See page 5 for priming - before first use).

Installing a new cartridge whilst outdoors causes a heightened risk of cross contamination. When changing the cartridge ensure you have clean, dry hands and the tap and cartridge remain clean.



SHELF LIFE

Standard packaged cartridge

The cube can be stored unused for up to 3 years from the date of manufacture. Priming is an essential step that must be performed within 3 years from the date of manufacture and before you start to use the jerrycan to drink from.

If stored longer than 3 years the cube membranes will dry out, causing the membranes pores to close and the system to shut down.

Aluminium foil sealed cartridge

An aluminium foil sealed cartridge provides the lowest moisture transition rate available. This protection means that if sealed in the condition it was purchased the shelf life of the product can be extended up to 10 years from the date of manufacture.

Standard packaged activated carbon filter

An activated carbon filter, if sealed in its original polythene wrapping, can be stored for approximately 3 years from the date of manufacture subject to storage conditions. If left unsealed the activated carbon filter can be stored for up to 2 months before expiry. Carbon is a natural absorbent, so if left unsealed it will be absorbing all pollutants in the air around it.

Aluminium foil sealed activated carbon filter

An aluminium foil sealed carbon filter provides the lowest moisture transition rate available. This protection means that if sealed in the condition it was purchased the shelf life of the product can be extended up to 10 years from the date of manufacture. On opening of the foil sealed packaging, the activated carbon filter can be stored for 3 years if sealed in the zip lock foil bag it was supplied in.

SERVICE LIFE

Cartridge

In ideal conditions the cartridge will process the number of litres specified. As an example the 5000 litre cartridge will last approximately 4 years & 6 months. This is based on the user filtering 3 litres per day; as per the WHO guidelines for drinking water recommendations *

Activated carbon filter

Each activated carbon filter will process 100 litres of water. If the cube is used to process 3 litres of water per day, each activated carbon filter will last approximately 1 month before a replacement activated carbon filter is recommended.

*These are approximate life spans dependent on the cartridge in the cube being kept hydrated as per the storage instructions and well maintained as per the maintenance and care instructions.

STORAGE

The cube

Before first use, the cube should be kept in a dry place. After first use, protect the cube against extreme temperatures.

Keep the membranes of the cartridge hydrated by storing at least 1 inch/2.5 cm of water in the cube at all times whilst keeping the cube sealed with the pump and tap in place. Failure to do so will cause the membranes to dry out, the nano-filter pores to close and the system to shut down. This is not covered under your warranty and you will need to purchase another cartridge

To ensure the cube remains in the best condition use on a regular basis. Always store the cube in a cool dry place when not in use, ideally between 5-20 °C.

Activated carbon filter

After opening a pack of activated carbon filters ensure that you store the additional, spare activated carbon filters within the foil zip lock bag or within a sealed container. This will preserve their shelf life for up to 3 years. If left unsealed, the activated carbon filters will expire within 2 months.

When storing the cube for a period of 1 month or more, the activated carbon filter should be removed and discarded. Replace with a new carbon filter before next use.

LONG-TERM STORAGE – 1 MONTH OR MORE

Before storing the cube:

- Remove and discard the activated carbon filter from the cube and clean the cube (see page 10 for how to clean the cube).
- Store at least 1 inch/2.5 cm of water in the cube at all times.
- Release pressure from the cube by unscrewing the pump slowly by $\frac{1}{4}$ turn until you hear a hiss sound. Hold on to the pump firmly whilst unscrewing. After pressure is released screw the pump back into place.
- Ensure the pump and tap are sealed.

Before re-using the cube:

- Clean the cube before re-use (see page 10 for how to clean the cube).
- Replace with a new activated carbon filter before re-use (see page 9 for how to install an activated carbon filter).

How to prevent hardness salts building up on the cartridge during long-term storage

Prolonged storage in areas of hard water will result in the crystallization of calcium, magnesium and salts on and within the membranes of the cartridge. To prevent this from happening, keep the membranes of the cartridge in the cube hydrated by storing at least 1 inch/2.5 cm of water in the cube at all times whilst keeping the cube sealed with the pump and tap in place. Failure to do so will cause the membranes to dry out, the nano-filter pores to close and the system to shut down. This is not covered under your warranty and you will need to purchase another cartridge.

EXTREME TEMPERATURES

Cold temperatures

After first use the LIFESAVER[®] cube™ should be protected from freezing. Freezing can compromise the integrity of the cartridge. If you suspect the cube has been frozen, perform a membrane integrity check, page 12.

Hot temperatures

Do not leave the LIFESAVER[®] cube™ in direct sunlight for long periods of time.

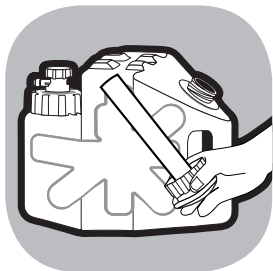
For minimum and maximum operating and storage temperatures refer to Performance and Technical data, page 19.

Transporting your LIFESAVER[®] cube™

When taking the cube on an aeroplane ensure that:

- Release pressure from the cube by unscrewing the pump slowly by $\frac{1}{4}$ turn until you hear a hiss sound. Hold on to the pump firmly whilst unscrewing.
- Remove the pump. **1**
- Completely drain the cube of water. **2**
- Screw the pump back in place.
- Ensure the pump and tap are correctly sealed. **3**
- Pack the cube securely in the hold or within hand luggage.
- Pour 1 inch/2.5 cm of water into the cube when the destination is reached.
- Perform a membrane integrity check before re-use.

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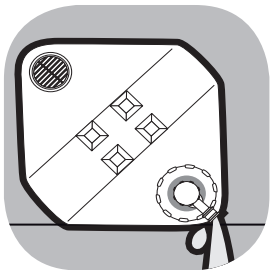


FAILSAFE™ TECHNOLOGY

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FAILSAFE™ TECHNOLOGY

The cube™ incorporates FAILSAFE™ technology - an automatic indicator of when the cartridge needs replacing. When the service life of the cartridge has been fulfilled, the pores in the membranes will be blocked by contaminants. The filter stops passing water taking away the guess work of knowing whether your filter is still effective in filtering out contaminants. At this point you should replace your cartridge.

As the cartridge reaches the end of its life, a greater number of pumps are required to induce water flow. There will come a point at which despite the recommended maximum number of pumps water does not flow. Before you install a new cartridge, check:

- The level of water in the cube. As the water level becomes low, flow rate will reduce. Pick up the cube and use it like a jug ① or lay the cube on its side, with the tap facing downwards ②. Both methods will encourage water to flow faster.
- Clean the cube as the cartridge may be covered in dirt and debris causing flow rate to be reduced (See page 10 for how to clean the cube)

PERFORMANCE DATA

Minimum operating temperature	>0 °C (32 °F)
Maximum operating temperature	50 °C (122 °F)
Minimum storage temperature*	-10 °C* (14 °F)
Maximum storage temperature	50 °C (122 °F)
Initial flow rate** (water of 20 °C/68 °F)	1.25L/min @ 0.85bar (g)
Cartridge service rating**	5,000 litres (1325 US gallons)
Dry weight of cube inc. cartridge	1.2kg (42 oz)
Cube storage capacity	5L (168 US oz)

Product materials and water effluent BPA and BPS free

MICROBIOLOGICAL FILTRATION EFFICACY

Bacteria retention***	>99.9999 % (Log 6)
Virus retention***	>99.99 % (Log 4)
Cyst retention***	>99.998% (Log 4.7)
Chemical reduction	Activated carbon filter improves the palatability of water by removing chlorine, taste and odour from water.

LIFESAVER[†] CUBE TEST COMPLIANCE

Testing is based on a suitable adaption of NSF/ANSI P231. These units are tested with two different types of water to challenge the filtration capability beyond the standard use. All figures quoted are taken from the stressed challenge phase of the test imitating sewage contaminated water.

* After first use the product should be protected against freezing

** Flow rates and service rating dependant on the composition, temperature and turbidity of the feed water

*** Tested by BCS laboratories issued 18/02/16 based on an adaption of NSF/ANSI P231 Protocol

FAQ'S:

Q. Where do I purchase additional cartridges?

A. Replacement cartridges and accessories are available for purchase from www.iconlifesaver.eu and www.iconlifesaver.com

Q. Where do I dispose of used cartridges?

A. The cartridge is made of recyclable plastic and should be disposed of at a recycling centre. If this is not possible, you can dispose of it in your normal household waste.

Q. Can the LIFESAVER® cube™ remove other liquids apart from water?

A. The LIFESAVER® cube™ is designed to filter water only. It is not designed for filtering sugared or carbonated drinks, alcohol or any other liquids.

Q. How long does an activated carbon filter last?

A. Each activated carbon filter will process 100 litres of water. If the cube is used to process 3 litres of water per day, each activated carbon filter will last approximately 1 month before a replacement activated carbon filter is recommended.

Q. Could the LIFESAVER® cube™ be used to filter and drink urine?

A. You can filter urine with the LIFESAVER® cube™ and it will remove all the microbiological contamination however as there is a certain amount of salts in urine the resulting water will have a level of salts dissolved into it that the LIFESAVER® cube™ will not remove. This will increase as the urine is repeatedly filtered.

We suggest you could potentially do this up to four times before the salts levels become dangerous. However it is recommended that you seek alternate water sources before using the LIFESAVER® cube™ this way.

Q. Does the LIFESAVER® cube™ filter salt from sea water?

A. The cube will not filter seawater or any other salts from water; because salt is in solution. LIFESAVER® technology only removes particles held in suspension.

INTERNATIONAL LIMITED WARRANTY:

Thanks again for purchasing LIFESAVER® cube™. If you have any questions relating to this or any other product in our range please contact us via our website where we will be more than happy to help.

If purchased from Icon Lifesaver Ltd directly or an authorised LIFESAVER® reseller the LIFESAVER cube comes with a 2 year international warranty from the date of purchase against defects in materials and workmanship. Should your LIFESAVER® cube™ prove defective within 2 years from the date of purchase you should return it to the retailer that you originally purchased it from. Icon Lifesaver Ltd will, at its sole discretion, repair or replace the damaged item(s).

You should ensure that you retain your proof of purchase showing the date on which you purchased your LIFESAVER® cube™. Without it we are unable to offer warranty assistance. This International Limited Warranty does not affect your statutory legal rights.

The warranty is non-transferable and does not apply to second hand purchases.

DISCLAIMER

The information and data contained in this document are based on our general experience and are believed to be correct. They are given in good faith and are intended to provide a guideline for the selection and use of our products. Since the conditions under which our product may be used are beyond our control, this information does not imply any guarantee of final product performance and we cannot accept any liability with respect to the use of our products. The quality of our products is guaranteed under our conditions of sale. Existing industrial property rights must be observed.

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All details given on and in this manual are believed to be correct at the time of going to press. We reserve the right to make improvements and/or modifications to the equipment herein.

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