

LIFESAVER[®]

jerrycan

FOR A HOSTILE WORLD[™]

Dear user

I originally developed the LIFESAVER bottle after I saw the tragic waste of life and serious problems caused by the lack of safe drinking water in the wake of the tsunami in December 2004 and then again the following year on August 29, 2005 when Hurricane Katrina hit Louisiana. It took a little while and some very frustrating prototypes but eventually I did it. And the rest, as they say, is history.

As far back as the Second World War jerrycans have been used for transporting water. LIFESAVER systems have revolutionised this 60 year old storage technology. We have completely redesigned it from the ground up. The LIFESAVER jerrycan incorporates LIFESAVER's famous filtration technology allowing users to process up to 20,000 litres of clean sterile drinking water without the use of chemicals.

The LIFESAVER jerrycan bridges the gap between hand held water filtration and the tap. Like the LIFESAVER bottle the LIFESAVER jerrycan uses a highly advanced ultra filtration system. LIFESAVER jerrycan will remove bacteria, viruses, cysts, parasites, fungi and all other microbiological waterborne pathogens. It does all this without the aid of any foul tasting chemicals like iodine (which is now banned for use in drinking water within Europe).

I designed the LIFESAVER jerrycan to be used in many different markets including Aid, Military, Consumer, Traveller and Emergency preparedness. Treated with care and respect you can expect many years of trouble-free use. Should you have any questions or concerns please feel free to contact me at info@lifesaversystems.com

A handwritten signature in black ink, reading "Michael W. Pritchard". The signature is stylized with a large, sweeping initial 'M' and a long horizontal line extending from the end of the name.

Michael W. Pritchard M.W.M.Soc
LIFESAVER systems
Inventor – CEO

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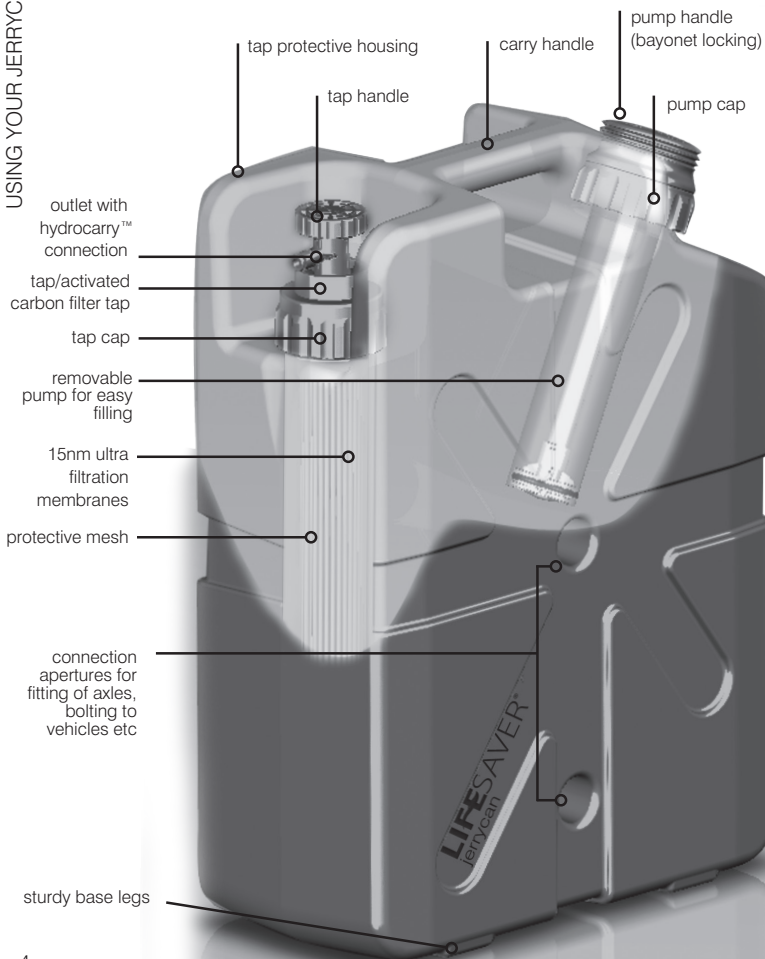
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First time use

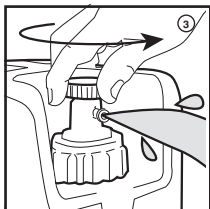
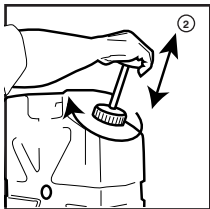
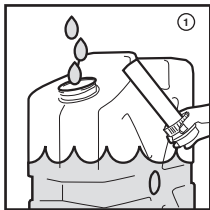
Priming the cartridge

In order to use LIFESAVER jerrycan you must first prime the UF cartridge which is supplied pre-installed.

To prime the UF cartridge:

- Ensure the tap cap is firmly tightened.
- Ensure the tap is in the open position.
- Unscrew the pump cap and remove the pump.
- Fill to the top with tap water, camp water or water from any other clean source.①
- Screw pump firmly back into place.
- Allow to stand for 5 minutes.
- Push pump handle down slightly and turn anti-clockwise to unlock.
- Pump several times② until water starts to flow.*③
- Discard the first 2 litres of water.**
- Your LIFESAVER jerrycan is now ready to use.

When priming you may notice the water takes a while to come through. This is normal and part of the priming process. After 3-4 litres, the water will flow freely.

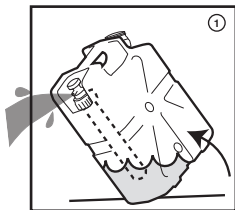


**Do not over pump your LIFESAVER jerrycan. It is effectively a pressurised vessel and should be handled with caution. You will discover in a very short time that only a few pumps are needed to induce water flow. If you require an increased flow rate then more pumping will be required. The jerrycan may remain pressurised when not in use. This means that you can turn the tap on and off several times without having to re-pressurise the jerrycan.*

IMPORTANT!

You may notice on priming that the water contains white/grey/black particles. This is simply harmless carbon and membrane dust from the filter and/or activated carbon tap filter (if fitted) and once a few litres of water has passed through the cartridge this will disappear.

*** In order to maintain the quality of the membranes after manufacture a small amount of glycerine is used to coat their surface. Priming the cartridge removes the glycerine.*



Drinking from the LIFESAVER jerrycan

Having primed the cartridge, refill your LIFESAVER jerrycan and familiarise yourself with it. The LIFESAVER jerrycan is designed to remain pressurised.

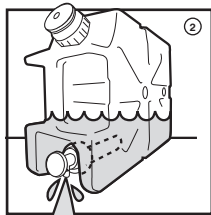
When pressurised you can turn the tap on and off and water will flow.

ANYWAY® technology

LIFESAVER jerrycan has been designed to work at any angle ① and on any axis.

It incorporates ANYWAY® technology.

This means that in effect it will work in any position. When the level of the water in the jerrycan gets low, turning it on its side ② will improve the flow rate.



Transport

When taking your LIFESAVER jerrycan on an aeroplane ensure that it is completely drained of water and that it is packed securely within your luggage. Protect from freezing. Ensure that the jerrycan is de-pressurised before your trip.

Refilling your LIFESAVER jerrycan

This is a straight forward exercise but you should be careful when filling not to contaminate the tap. Remember always fill from the cleanest water source available.

Before you undertake any trip...

It is important that you follow these few simple steps:

- Ensure that the cartridge is correctly and firmly in place. ('How to install or replace a LIFESAVER jerrycan UF cartridge' - page 11)
- Check the pump is working smoothly and add a small amount of silicone grease (provided) to the piston head as required. ('Maintenance and care' - page 9) Failure to do this will result in the premature wearing of the o-ring.
- Perform a membrane integrity check. (Membrane integrity check - page 15)
- If you think that the area you are visiting may have chemical contamination in the water you should install a LIFESAVER activated carbon tap before your trip. This will avoid the risk of performing this operation in the field.

IMPORTANT!

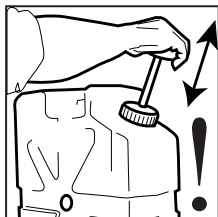
Always keep the tap cap firmly screwed on when in the field. Do not remove cap unless changing the activated carbon filter tap or the LIFESAVER cartridge and then only after following instructions (How to install or replace a LIFESAVER jerrycan UF cartridge - page 11).

CAUTION When removing the pump unscrew ¼ turn and allow any pressurised air still within the jerrycan to escape. Failure to do this could result in the pump being forced out of the jerrycan at speed and could cause serious injury.

IMPORTANT!

Do not allow grit, sand or other abrasive matter to enter the jerrycan. If this happens it should be removed.

The LIFESAVER jerrycan is designed to collect small amounts of particulate matter at its base. This along with a small amount of water will remain at the bottom of the jerrycan and will not pass through the filter. This is designed to prolong the life of your filter.



! **Do not over pump your LIFESAVER jerrycan. It is effectively a pressurised vessel and should be handled with caution. You will discover in a very short time that only a few pumps are needed to induce water flow. If you require an increased flow rate then more pumping will be required. The jerrycan may remain pressurised when not in use. This means that you can turn the tap on and off several times without having to re-pressurise the jerrycan.*

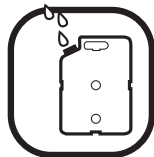
Instructions for routine use

Once you are familiar with your LIFESAVER jerrycan, the instructions are simple. **FILL • PUMP • DRINK™**

- Unscrew and remove the pump.
- Fill to the top with water.
- Screw pump cap firmly back into place.
- Ensure the tap is in the closed position.
- Push pump handle down slightly and turn anti-clockwise to unlock.
- Pump several times.* (If jerrycan is full you will only need a few pumps to pressurise it)
- Push pump handle down and turn clockwise to lock.
- Turn tap on and water will flow.
- Turn tap off when finished.

Choosing your water source

Always choose the cleanest water source available. LIFESAVER jerrycan will work with high turbidity water though the dirtier the water, the quicker the cartridge will expire.



Maintenance and care

The unique ultra filtration membranes used in the LIFESAVER jerrycan have been developed to deliver a high volume of throughput at very low pressures. The flow rate and capacity of your LIFESAVER cartridge will depend on the water quality.

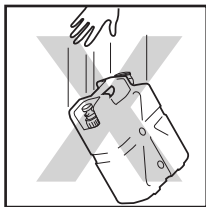
LIFESAVER jerrycan is designed to filter water only. It is not designed for filtering sugared or carbonated drinks, alcohol or any other liquids.

LIFESAVER jerrycan will not filter out salts.

If you suspect the cartridge has been damaged in some way perform a Membrane Integrity Check (page 15)

If it fails then replace the cartridge following the instructions on page 11 - How to install or replace a LIFESAVER UF cartridge.

LIFESAVER jerrycan has a long shelf life. It can be stored unused for up to 3 years. Once the jerrycan has been used, the cartridge will last up to a further 2 years dependent upon usage conditions.



IMPORTANT!

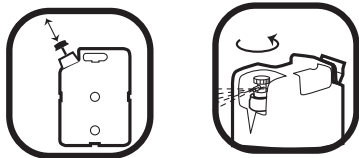
DO NOT subject the LIFESAVER jerrycan / cartridge to shock or other misuse such as inserting objects into the cartridge or mishandling.

DO NOT fill the LIFESAVER jerrycan with any liquids other than water as this will cause irreparable damage and in any event will void your warranty.

DO NOT allow large, sharp or abrasive matter such as stones, glass, metal and other detritus to enter the jerrycan.

DO NOT use detergents or other cleaning agents to clean your LIFESAVER jerrycan/ cartridge except where specified.

CAUTION When removing the pump unscrew $\frac{1}{4}$ turn and allow any pressurised air still within the jerrycan to escape. Failure to do this could result in the pump being forced out of the jerrycan at speed and could cause serious injury.



Front-side washing LIFESAVER jerrycan

Over the life of the membranes particulate matter will build up on its surface. The filter cartridge's unique design induces particulate matter to form a caking layer on its external surfaces. To reduce this build-up you should perform a front-side wash on a regular basis.

To perform a front-side wash:

In the field

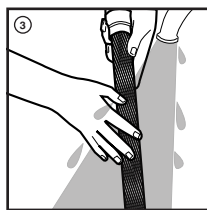
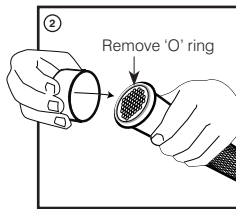
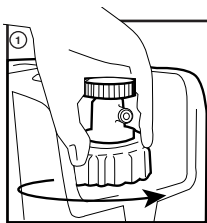
With the tap in the closed position remove the pump. Fill with 2-3 litres of the cleanest water available and gently swill out any debris that has collected at the bottom of the jerrycan. Now fill the jerrycan ½ full with the cleanest water available. Gently swill the water around for a minute or two. Invert the jerrycan several times. Empty and repeat as necessary. It is always a good idea to keep the membranes as free from particulate matter as possible.

IMPORTANT!

The protective cap must be firmly closed over the end of the cartridge. Do not attempt to touch the membranes through the protective mesh as this could cause damage and will void your warranty.

At home

1. Empty the jerrycan of water.
2. Unscrew and remove the tap cap and tap. ①
3. Remove the filter from the jerrycan and remove the rubber 'O' ring (keep the 'O' ring clean and safe).
4. Put the protective cap provided over the end of the cartridge ② (THIS IS VERY IMPORTANT as it prevents contaminated water from entering the clean water area within the cartridge. If you fail to do this you risk contaminating the safe water area of the cartridge and the cartridge may need to be replaced.)
5. It is now safe to soak the cartridge in a basin of water. By gently agitating the water, dirt and other matter will be dislodged from the surface of the membranes. When washing keep one hand on the protective cap to prevent it from slipping off. ③
6. Flush this water away and repeat several times as necessary. You may use warm (not hot) water for this process and you may also run the tap over the cartridge.
7. Leave the cartridge to drain for 1 hour.
8. Re-assemble the jerrycan (Long term storage - page 15)



How to install or change a LIFESAVER jerrycan UF cartridge

Before changing your cartridge, try front-side washing first to remove particulate matter (page 10). This may just extend the life of your cartridge long enough to meet your requirements.

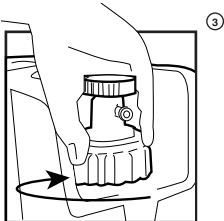
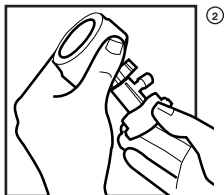
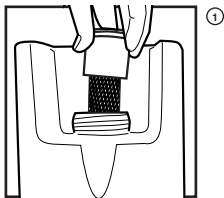
As the LIFESAVER jerrycan has been designed for exceptional service life, it is rare that you will need to change the cartridge whilst in the field. However, should it be necessary, it is very important that you follow these instructions carefully:

- Empty the jerrycan of water.
- Unscrew & remove tap cap and tap.
- Remove the old cartridge ① and discard it responsibly.
- Thoroughly clean the LIFESAVER jerrycan and pump by washing it with mild washing up liquid in warm water (use a soft cloth for this). Ensure that all dirt is removed and the jerrycan is thoroughly clean. Rinse thoroughly and allow to dry.
- Remove the new LIFESAVER jerrycan UF cartridge from its packaging.
- Insert the new cartridge into the jerrycan.
- Insert the tap into the tap cap ② and thread onto the jerrycan. ③ Ensure that the tap cap is tightened firmly.
- You now need to prime the cartridge. (see page 5 for priming)

Your LIFESAVER jerrycan is now ready to use again.

IMPORTANT!

Changing your LIFESAVER cartridge in the field causes a heightened risk of cross contamination during cartridge change over. Should you need to replace your cartridge, ensure you have clean, dry hands. Once the expired cartridge is removed, clean, disinfect and dry the jerrycan before inserting the new cartridge. This will reduce the risk of cross contamination.



Installing or replacing an activated carbon filter tap

The activated carbon filter incorporated into the tap housing is made of high specification activated carbon which reduces a broad spectrum of chemical residues including pesticides, endocrine disrupting compounds, medical residues and heavy metals.

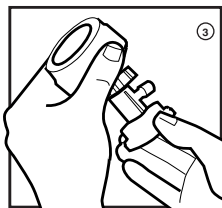
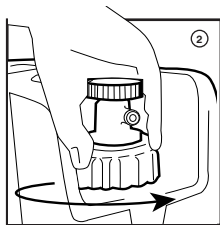
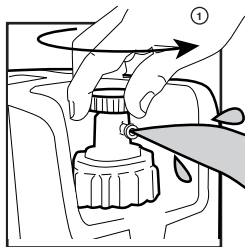
The activated carbon filter is incorporated into the tap housing. This is not designed to be removed. Attempting to do so will damage the carbon.

1. Empty the jerrycan of water.
2. Unscrew & remove tap cap and tap.
3. Insert your new activated carbon filter tap into the tap cap and thread onto the jerrycan. Ensure that the tap cap is tightened firmly.

After any long trip and or when storing LIFESAVER jerrycan the activated carbon tap filter should be removed and discarded and replaced with the standard tap provided. Only replace with a new activated carbon filter tap immediately before your next trip.

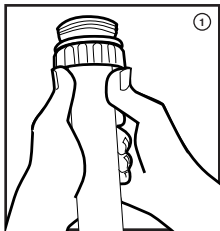
Flow rate with carbon filter tap

To reduce chemical contamination within the water it needs a contact time with the activated carbon. With a carbon filter tap fitted the flow of water will slow significantly. This is normal.



IMPORTANT!

You only need to fit a LIFESAVER jerrycan activated carbon filter tap when you suspect that the water may contain chemical contamination. In most water courses this is generally not the case. Retain your original tap for future use.

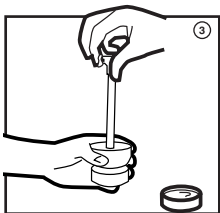
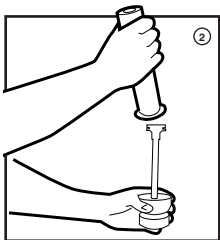


Maintaining the pump

LIFESAVER jerrycan's pump has been designed for high workloads. The o-ring inside the pump is designed to glide easily up and down the tube. A small amount of silicone grease should be added to the o-ring of the pump plunger from time to time.

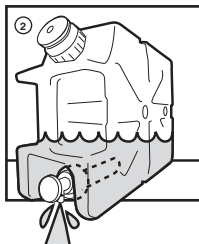
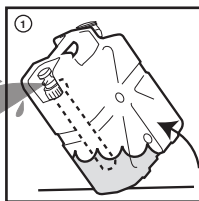
To maintain the pump follow these instructions:

1. Unscrew the pump.
2. With both thumbs push the threaded cap upwards away from the pump tube. ①
3. Remove the pump tube. ②
4. Place a small amount of silicone grease around the o-ring at the end of the pump piston. ③
5. Reassemble by locating the x shaped guide pins into the holes in the pump cap.



FAILSAFE™ technology

There are several aspects of this technology that increase the safety and reliability of your LIFESAVER jerrycan.



Auto Shut Off

As the LIFESAVER cartridge nears the end of its service life a greater and greater number of pumps are required to induce water to flow. There will come a point at which despite continuous pumping water does not flow. **DO NOT** confuse this with the level of water getting low within the jerrycan. Try changing the orientation as in ① & ② to improve the flow.

If changing the orientation does not improve the flow and there is still plenty of water in the jerrycan then this is the auto shut off feature of FAILSAFE working. Your cartridge has now expired and you must now change it. Before changing however, perform a front side wash as the membranes may just be covered with particulate matter. (Front-side washing - page 10).

Membrane Integrity

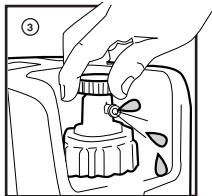
The ultra filtration membranes used in your LIFESAVER jerrycan have been precision engineered. They have been integrated into a robust cartridge format and have been designed for long service life. If treated incorrectly or without care they are liable to break. There are several reasons why a membrane might break. **DO NOT** subject the jerrycan/cartridge to shock or drops or other misuse such as inserting objects into the cartridge or filling the jerrycan up with anything other than water. **DO NOT** allow large, sharp or abrasive matter such as stones, glass, metal etc. to enter the cartridge.

IMPORTANT!

This integrity check should be performed on a regular basis and every time the jerrycan has been subjected to shock or you suspect damage may have occurred for any reason to the jerrycan or cartridge membranes.

Membrane Integrity check

Your LIFESAVER jerrycan has been designed to work in the vertical position or horizontal position with the jerrycan tap facing downward. Please refer to drawing 1 & 2 on page 14. If water does not flow freely despite being $\frac{1}{4}$ full at these angles then the membranes have become damaged in someway. If the membranes have been compromised in anyway a large amount of air will be expelled from the tap rather than water ③. You must stop using your jerrycan and replace the cartridge immediately.



Long term storage

If storing LIFESAVER jerrycan for a prolonged period of time (i.e. between trips) you should always perform a front-side wash. Ensure that no water remains in the tap housing. You will need to discard the activated carbon filter tap. It is also advisable to sterilise the jerrycan. To keep your LIFESAVER jerrycan in tip top condition you should flush through with water on a regular basis. DO NOT allow the filter to dry out.

Preventing 'hardness salts' build-up on the filter.

In hard water areas calcium, magnesium and other salts are in solution within the water. They are perfectly normal. However if you are storing your jerrycan for prolonged periods it is important that it is not left to dry out. If it does and the water is from a hard water area then these salts will come out of solution and crystallize on and within the filter membrane. This will significantly reduce the performance of the membranes and in some cases cause the membrane to stop working. You

will NOT be able to make a claim under your warranty.

Sterilisation

- Empty the jerrycan and flush out any debris.
- Turn tap to off position.
- Fill your jerrycan $\frac{1}{2}$ way with clean tap water and add 35ml of Milton Fluid (or compatible sterilising fluid) to make a sterilising solution.
- Continue filling to the top.
- Screw pump firmly back into place.
- Gently invert the jerrycan several times to agitate the sterilising solution.
- Allow to stand for 60 minutes.
- Turn tap to on position Pump several times until water starts to flow. Allow at least $\frac{1}{2}$ litre to flow.
- Turn tap to off position and leave to stand for a further 60 minutes.
- Turn tap to on position and pump the remaining sterilising solution out. Some will still remain and this is normal.
- Discard the remaining sterilising solution.
- Re-fill with clean tap water.
- Pump this water through the jerrycan.
- Your LIFESAVER jerrycan has been sterilised and is ready to be used again.

When you plan to use LIFESAVER jerrycan again just flush a couple of litres of water through and it is ready to use again.

If you notice any bacteriological growth on the inside of the jerrycan then clean both jerrycan and cartridge as advised, (How to install or replace a LIFESAVER jerrycan UF cartridge - page 11) and perform sterilisation again.

Before first use LIFESAVER jerrycan should be kept in a dry place. After first use the product should be protected against drying out and freezing.

Frequently Asked Questions

Q. Where do I purchase additional cartridges?

- A. Replacement cartridges and other LIFESAVER jerrycan consumables are available from the dealer where you purchased your LIFESAVER jerrycan.

Alternatively go to our website www.lifesaversystems.com and buy online.

Q. Where do I dispose of spent 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 I am pumping but no water is coming out

- A. Your cartridge may have expired or may require a front-side wash (page 8).

Q The pumping action has become stiff

- A. The most likely reason for this is a lack of silicone grease in the pump tube (maintaining the pump - page 14).

Q Where can I get replacement parts?

- A. LIFESAVER jerrycan has been engineered so that all parts are replaceable. Please go to the dealer where you purchased your LIFESAVER jerrycan.

Alternatively go to our website www.lifesaversystems.com and buy online.

For a list of these and other frequently asked questions please visit our website www.lifesaversystems.com.

Performance and technical data

Minimum operating temperature	>0 °C (32 °F)
Maximum operating temperature	50 °C (140 °F)
Minimum storage temperature	-10 °C* (14 °F)
Maximum storage temperature	50 °C (140 °F)
Initial flow rate	2L/min@1.0 Bar ¹
Cartridge service rating	10,000 litres (2650 US gallons) 20,000 litres (5300 US gallons)
MWCO	200kDa – on dextrans
Bacteria retention	>99.999995 % (log 7.5)
Virus retention	>99.999 % (log5)
Chemical reduction	Activated carbon reduces chemical residues, inc; pesticides, endocrine disrupting compounds, medical residues and heavy metals
LIFESAVER jerrycan US compliance	EPA - US National Primary Drinking Water Regulations under the Safe Drinking Water Act 93-523
LIFESAVER jerrycan UK compliance	Water Supply (Water Quality) Regulations 2000
LIFESAVER jerrycan EU compliance	European Drinking Water Directive Council Directive 98/83/EC
LIFESAVER jerrycan WHO compliance	Guidelines for Drinking-water Quality First Addendum 3rd Edition
Membrane approvals/compliances	CE, EPA, NSF, WHO, WRAS, DVGW, KIWA, KTW
jerrycan storage capacity	18.5 litres approx (5 US gallons approx)
Warranty:	2 Year international limited warranty

¹ Flow rates and capacity depend on the quality of the feed water

* After first use the product should be protected against freezing

International Limited Warranty

Thanks again for purchasing LIFESAVER jerrycan. 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.

LIFESAVER jerrycan comes with a 2 year international warranty from the date of purchase against defects in materials and workmanship. Should your LIFESAVER jerrycan prove defective within 2 years from the date of purchase you should return it to the retailer that you originally purchased it from. LIFESAVER systems 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 jerrycan. Without it we are unable to offer warranty assistance. This International Limited Warranty does not affect your statutory legal rights.

Contact LIFESAVER systems Ltd.

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