

## SOLVATTEN WATER PURIFIER



### **SAFE DRINKING WATER FROM THE SUN**

*WWF Climate Solver 2009*

The Swedish “Solvatten” water purification unit provides up to 20-30 liters of safe drinking water (<1 E-coli/100ml) per day from contaminated (non-saline) water sources.

**It is a cheap, effective, green and sustainable solution for remote areas, islands, disaster relief, community empowerment and CSR / Donor Programs.**

### **How does the technology work?**

Solvatten makes unsafe water drinkable by using solar energy. Put Solvatten in a sunny place, give it 2-6 hours and the water will be drinkable! This can be done twice, sometimes three times a day, producing 20- 30 liters.

It is common knowledge that boiling can make water safe to drink. But it is not as widely known that UV light also kills micro-organisms. Solvatten is a specially designed container that uses heat, UV and a built-in filter to clean contaminated water. The patented Swedish invention Solvatten inactivates micro-organisms that cause diarrhoea and disease, producing water which meets the WHO’s Guidelines for Safe Water (<1 E-coli/100ml water).

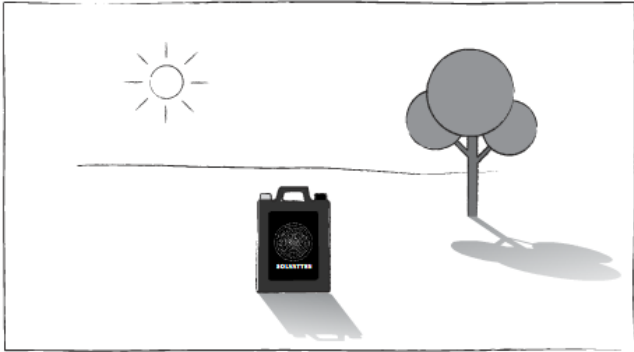
Solvatten can treat water containing bacteria, viruses and parasites. Solvatten don’t use the aid of any chemicals or any energy-source except the sun. Treated with care you can expect approximately 5 years of trouble-free use.

Solvatten has an indicator that shows the user that the water treatment process is complete.

Solvatten is easy to use, saves time, money and improve health. Using it reduces fire wood consumption and thus the deforestation, soil erosion as well as the CO2 emission. Solvatten contributes to the MDG, (The Millenium Development Goals).



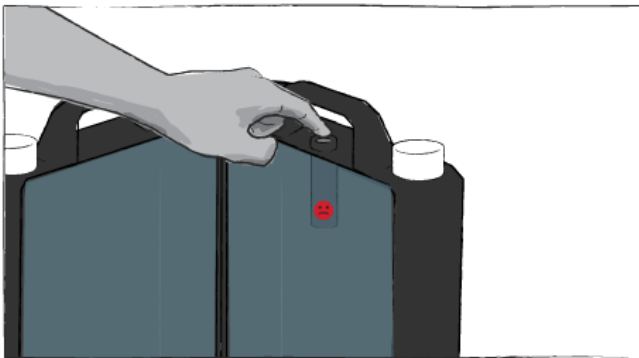
## Instructions for Use



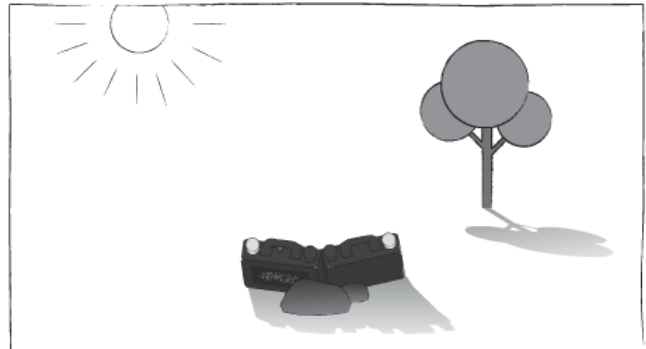
SOLVATTEN INSTRUCTIONS



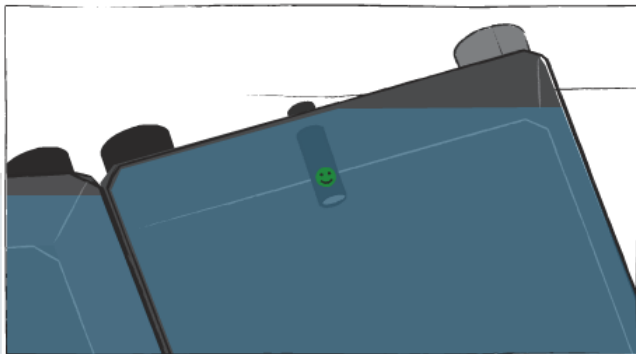
① USE BLACK OPENINGS TO FILL.



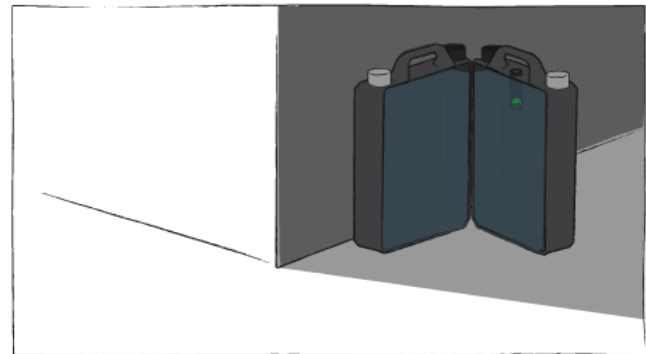
② PUSH THE BUTTON. THE INDICATOR SHOULD BE RED.



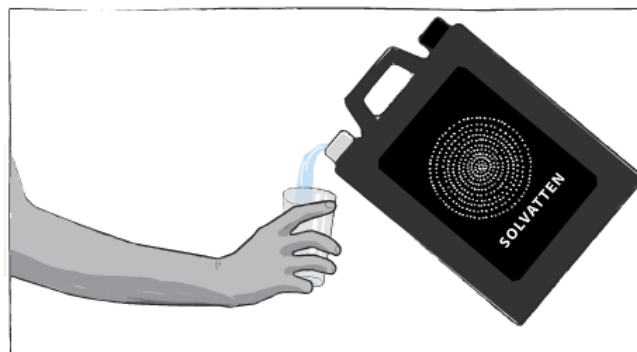
③ PLACE THE OPEN CONTAINER TOWARDS THE SUN



④ AFTER 3-4 HOURS THE INDICATOR TURNS GREEN. THE WATER IS SAFE.



⑤ PLACE IN SHADE TO COOL.



⑥ USE WHITE OPENINGS TO POUR. READY TO DRINK!



## FREQUENTLY ASKED QUESTIONS

### • Why Solvatten?

Solvatten can be a valuable water-treatment tool for vast numbers of people around the world where there is polluted water and energy sources are scarce, yet there is a lot of sun. Its use will bring health and environmental benefits and improve quality of life and opportunities for many.

### • What are the advantages with Solvatten?

The Solvatten system is: safe, reliable, simple, sustainable, cost-effective, socially and culturally acceptable.

### • How does it work?

Solvatten Solar Safe Water System uses energy from the sun to inactivate and kill the micro-organisms that cause water-borne diseases. The product's functionality is based on three well-documented methods for treating water – filtration, heat pasteurisation and UV-disinfection.

### • What kind of purification is achieved?

Solvatten inactivates micro-organisms which cause waterborne diseases and also filters out macro-organisms. The output is safe water according to WHO's guidelines (<1 E.coli/100ml water).

### • How much contamination can be treated?

Water samples with more than 200,000 E.coli/100 ml have successfully been treated.

### • How turbid can the untreated water be?

Turbidity up to 40 NTU and the filter reduces the turbidity by about 35%. If the water is very turbid, let it sediment or and pre filtrate.

### • What is the size and weight of a Solvatten?

The dimensions are 36 x 47 x 13 cm and the weight is about 2.70 kg.

### • How long does it take to get safe drinking water?

2-4 hours when the sun is shining, 5-6 hours when it is cloudy. During optimal conditions Solvatten can be used three times a day. 30 liters/ day. Solvatten does not work when it is raining – in these conditions we recommend rain-water harvesting.

### • How come it works so fast?

The containers have been specially designed to maximise the rate at which the water temperature rises, and amount of UV radiation to which the water is exposed.

### • Geographically, where can Solvatten be used?

In countries with a lot of sunshine but not necessarily warm weather. In mountain areas as well as lowlands. In cooler countries (e.g. Sweden) on sunny days in spring and summer.

### • How much water can you treat on one occasion?

10 litres, which is the capacity of the containers. If the weather is good Solvatten can be used two or three times a day.

### • Do you need any spare parts? Only the filter may have to be replaced.

This is easy to do and a folded piece of local fabric (eg sari) can be used.

### • How long does Solvatten last?

If handled with care, Solvatten will last for many years.

### • Does the water treatment affect the taste of the water?

No, there is no change.



• **Can you use Solvatten for other purposes?**

Yes, to warm water for personal hygiene, washing and rinsing food etc. This will help prevent infections and could be especially useful in health settings eg for midwives. You can use Solvatten to pre heat the water before cooking food.

• **What are the benefits for the environment?**

If the system is used to warm water then other energy sources (eg firewood or kerosene) can be replaced. This will bring environmental benefits such as reduced deforestation, soil erosion and green-house gas emissions. Also the plastic material can be recycled after long-term use and there are no chemicals involved in the water treatment process.

• **Is the material used FDA approved?**

Yes; the material used in Solvatten is approved by the FDA.

• **Are any harmful chemicals produced during exposure to the sun?**

No, the material used withstands the heat and the UV light without harmful side effects.

• **Is the technique for using Solvatten easy to learn?**

Yes, it is very straightforward and graphic instructions are attached to the Solvatten containers.

• **Where and how should Solvatten be positioned during use?**

Where there is no shade, no wind or draught. Directed towards the sun.

• **Is it necessary to re-position Solvatten during use?**

Not when the sun is high in the sky, but if the sun is lower (eg in winter or in more northerly countries) you have to change the position of Solvatten up to two times during use.

• **Is it reliable?**

Yes, the SVI-10 indicator shows when the treatment process is completed and the water is safe.

• **Is the water safe the day after treatment?**

Yes, however WHO recommends consumption within 24 hours for any treated water to avoid recontamination.

• **How do you clean Solvatten inside?**

By adding a handful of dry beans, rice or lentils with some water to the container, shaking and rinsing. Soft wool balls can also be used for this method. Do not use sand as it may scratch the surface. Do not use detergents.

• **Apart from households, where can Solvatten be used?**

The technology is suitable for use in many contexts e.g. schools, health centres, the tourist industry, disaster relief etc.

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