

Chemical Risk Assessment of PET Bottles

Several studies have been conducted and published with the objective of a risk assessment of organic compounds migrating from PET into water. None of the studies has detected a health risk in the use of SODIS for drinking water preparation. Laboratory and field tests have shown that photoproducts are generated only on the outer surface of the bottle. No migration of photoproducts into the water was observed.



Materials Science & Technology

APPROVED!

User Experience - a Case Study

"I have spent much money for the treatment of my stomach ulcer and diarrhoea. The Doctor advised me to drink boiled water, but the cost of firewood is about Rs.75 per month. Then I attended an awareness programme about SODIS, during which a water test was conducted on tap water and our household drinking water. This test showed uncountable colonies of E. coli in all the sources. Now I drink SODIS water regularly, and my stomach ulcer is cured. During the



last 10 months I have saved more than Rs.2000 by using SODIS water and I remit monthly Rs.100 as a recurring deposit on my daughter's name in the post office. I am also propagating the usage of SODIS water to my friends and school going children. Presently in our village out of 98 families 69 were committed to use SODIS. Even Dr. Manohar, a private practitioner in Gujiliamparai, was convinced about the technology of SODIS and started recommending SODIS water to his patients."

Contact Information

SODIS was developed and tested at the Swiss Federal Institute for Aquatic Science and Technology (Eawag) by its Department of Water and Sanitation in Developing Countries (Sandec). It is promoted worldwide through local partner organisations.

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Pure Drinking Water For Free!

SODIS

Solar Water Disinfection

The method

Clear water is filled into transparent PET bottles and exposed to full sunlight for six hours. After this, the water is safe to drink!

What is SODIS?

SODIS (Solar Water Disinfection) is a simple low cost solution for water treatment at household level to improve the microbiological quality of drinking water. It is used worldwide in over 20 countries by more than two million people!

How it works

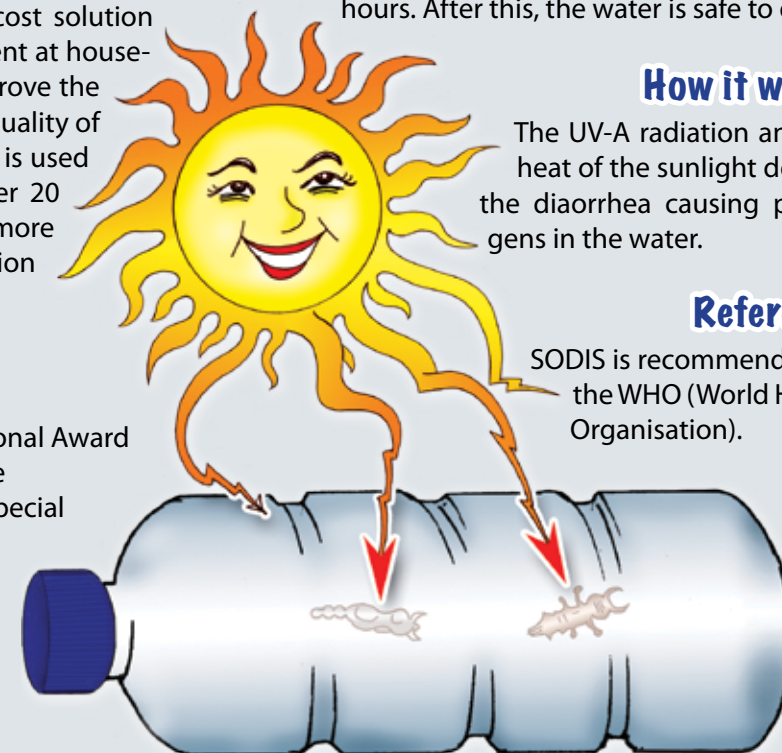
The UV-A radiation and the heat of the sunlight destroy the diarrhoea causing pathogens in the water.

Reference

SODIS is recommended by the WHO (World Health Organisation).

Awards

- » Dubai International Award for Best Practice
- » Energy Globe Special Award
- » Swiss Red Cross Prize



The Cause of Waterborne Diseases



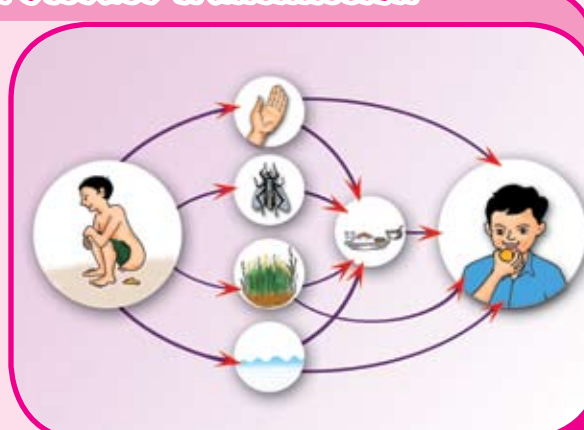
Pathogens are not visible for us because they are microorganisms, which can only be seen through a microscope. This is how they look:

contaminated raw water contains pathogens (E.coli)

SODIS treated water is free of pathogens!

Ways of Disease-Transmission

Diarrhoea causing pathogens follow different transmission routes from the place of contamination to the next person (through hands, insects, environment, food and water).



Always Remember!

- » Wash your hands with soap...
 - › after using the toilet!
 - › before cooking and eating!
- » keep your water sources clean and avoid water contamination!
- » dispose excreta and household waste safely and away from water!



Advantages of SODIS

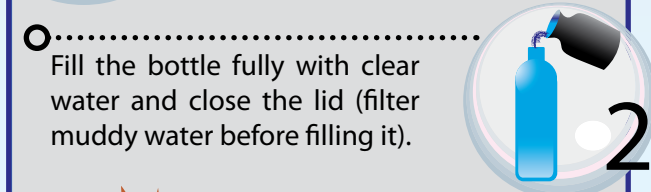
- » prevents you from waterborne diseases like diarrhoea, dysentery, cholera and typhoid
- » improves your family health situation
- » reduces fuel expenses and health costs
- » does not change the taste of the water
- » is simple to use and free of cost



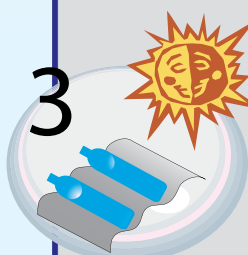
The SODIS Steps



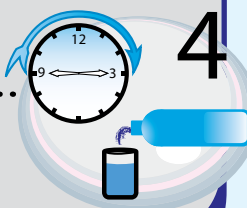
1 Take a transparent PET bottle and clean it with soap the first time you use it.



2 Fill the bottle fully with clear water and close the lid (filter muddy water before filling it).



3 Expose the bottle to the sun in the morning on the roof, on a corrugated iron sheet or on a dark surface.



4 After 6 hours in the full sun the water is safe to drink!

Important Notes!

1. use only unscratched transparent (not colored) PET bottles of max. 2 litres. The bottles should be clean and undamaged.
2. In the case of stagnant water fill the bottle only $\frac{3}{4}$ with water, close it and shake it for 20 seconds before filling it fully and closing the lid.
3. Place the bottles horizontally (flat) and make sure they have full sunlight during the whole day and will not be shaded after some time.
4. The exposure time depends on the weather:
 - › sky is clear or up to 50% cloudy: **6 hours!**
 - › sky is 100% cloudy: **2 consecutive days!**
 - › water reaches 50°C: **1 hour is sufficient!**
 - › During rainy days SODIS does not perform sufficiently! Rainwater harvesting or boiling is recommended during these days.



Water-Turbidity-Test

Only clear water can be used for SODIS. Turbid water reduces the efficiency of the sunlight. Therefore turbid (i.e. muddy) water has to be filtered through a clean cloth before it can be used for SODIS.

To determine whether the water is clear enough for SODIS, place the bottle filled with water upright on the SODIS logo at the front page of this brochure.

Now look through the bottle opening: if you can read the letters through the water, it is clear enough for SODIS.

