FREQUENTLY ASKED QUESTIONS (FAQs)

Q1. What is SODIS?

Ans: Solar Water Disinfection (SODIS) is a simple, environmentally sustainable, low-cost solution for drinking water treatment at household level for people consuming microbiologically contaminated raw water. SODIS uses solar energy to destroy pathogenic microorganisms causing water borne diseases and therewith it improves the quality of drinking water. Pathogenic microorganisms are vulnerable to two effects of the sunlight: radiation in the spectrum of UV-A light (wavelength 320-400nm) and heat (increased water temperature).

Q2. Can I purify any water using SODIS?

Ans: NO. SODIS requires relatively clear water as high turbidity (cloudiness caused by insoluble substances) in water can be a hindrance for effective application of SODIS. To determine the turbidity one can perform a simple test. The bottle filled with water should be placed on top of a newspaper headline. Now look through the bottle from the neck at top and to the bottom of the bottle. If the letters of the headline are legible, the water can be used for the SODIS treatment. In case the letters are not clear; the water needs to be filtered / decanted.

Q3. What kind of bottles can I use for SODIS?

Ans: A specific variety of plastic bottles - PET that is clear, transparent and without any scratches and dents is most suitable for the SODIS treatment. Glass bottles are generally not recommended for SODIS as they do not allow UV-A penetration essential for effective treatment of water. Their high cost and breakable nature is also a constraint.

Q4. How do I identify PET bottles?

Ans: Most easily available PET bottles are the cold drink bottles such as Coke and Pepsi. They can be identified by looking for the following code which is usually found at the base:

The other bottles have different coding, for instance, PVC bottles have the code 3 instead of 1.

Q5. Is the use of PET bottles harmful if I expose them to the sun over a long period?

Ans: NO. It has been scientifically proved by a study at IIT Madras that PET bottles are not harmful when exposed to sun and can be used to store water. Any leaching of the chemicals that takes place into the water is within the World Health Organisation (WHO) permissible limits. But it must be ensured that a PET bottle is changed every six months if regularly used for SODIS method

Q6. How do I dispose off the used PET bottles?

Ans: It is not recommended to 'throw away' the used PET bottles with the other waste materials. Instead they should be collected at the community level and given to the local collectors which are commonly known as the *Kabadiwalas* who take it forward for recycling or other forms of dispose/use.

Q7. Is SODIS really beneficial in prevention and control of water-borne diseases?

Ans: YES. SODIS inactivates the bacteria present in the water which cause diarrhoeal disease. Scientific studies have shown that SODIS inactivates 99.99% of harmful bacteria present in the water. Thus, it prevents the incidence of diarrhoeal diseases which are considered a major threat to health and sprout out of contaminated water. Consumption of SODIS water has substantial impact on its incidence reducing occurrence of cholera by more than 80%.Many other diseases such as dysentery, abdominal cramps and typhoid can also be prevented by drinking SODIS treated water.

Q8. Does the SODIS method alone ensure that my family and I will be free from water borne diseases?

Ans: NO. SODIS reduces the incidence of water borne diseases like diarrhoea, cholera and typhoid to a large extent but the importance of sanitation cannot be undermined for better overall health for you and your family. Practices such as washing hands with soap, safe disposal of excreta, hygienic drinking water storage and general household and community hygiene reduce exposure to pathogens. In addition, other water purification methods should be adopted where SODIS cannot be performed.

Q9. Can SODIS treated water be consumed by every member of my family?

Ans: YES, except infants below 18 months and severely sick person, if any. SODIS removes 99.9% of the bacteria and viruses and also removes parasites up to a certain degree from contaminated water. However, because infants have low immunity, and since there still remains a certain risk of contamination even after SODIS, they are subject to a high risk of diarrhoeal illness. The infection risk thus in infants below 18 months can be reduced by using boiled water instead of SODIS treated water.

Q10. Can I use SODIS in winters and monsoons as well?

Ans: To a lesser extent. The solar radiation intensity is subject to seasonal variations and consequently the SODIS treatment is not so effective in cloudy weather. With increasing cloudiness during winters and monsoons, as lesser sunlight is available, the bottles must be exposed for two consecutive days. But during continuous rainy days, boiling is recommended.

Q11. Why should I use SODIS technique rather than just boiling the water before drinking?

Ans: SODIS is a simple, easy to understand and low cost method of water purification. SODIS is more cost efficient method than boiling and also reduces the burden on traditional energy resources such as wood and kerosene. SODIS is an environment friendly method. Even children can use this method as it is so simple and safe, unlike boiling.

Q12. Is SODIS treated water better than chlorinated water?

Ans: YES. SODIS treated water is better than chlorinated water in terms of both usage and health risks. For effective disinfection of the drinking water, optimum dosage of chlorine is essential. A high dosage of chlorine in drinking water also changes its tastes unlike the case of SODIS. Long term use of chlorinated water can be hazardous to health.

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