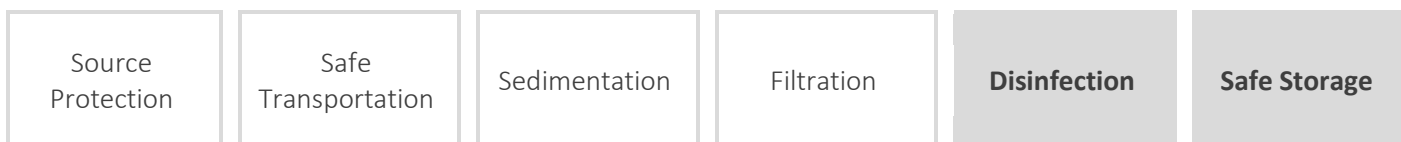


Solar Disinfection (SODIS)



What is it?

SODIS uses the sun's rays to kill pathogens in the water. It can be used to disinfect small volumes of water, as long as the water has low turbidity (is not cloudy). To use SODIS, people fill transparent plastic bottles made from polyethylene terephthalate (PET) and place them in direct sunlight. Water can be consumed directly from the bottle to avoid recontamination.



Performance

Microbiological Effectiveness:

Parameter	Effectiveness
Bacteria	Very Effective (>99%)
Viruses	Somewhat Effective (>80%)
Cryptosporidium (Protozoa)	Somewhat Effective (>80%)
Giardia (Protozoa)	Very Effective (>99%)
Helminths	Effective (>90%)



Other Parameters

Not effective for removing chemicals or turbidity.

Source Water Requirements

Water must have low turbidity (<30 NTU). Filter or sediment turbid water before treatment.

Capacity

Water is treated in plastic bottles, each of which can usually hold 1–2 L. Treatment takes between six hours (sunny conditions) and 48 hours (cloudy conditions).

Lifespan

Bottles must be replaced when they are scratched or become aged by sunlight.

Ease of Use & Acceptability

Operation & Maintenance

User fills a 1–2 L transparent, noncoloured plastic PET bottle with water. They place the bottle on its side in direct sunlight. After 6–48 hours (depending on weather conditions), the water is safe to drink. Water can be consumed directly from the bottle, which acts as a safe storage container.

Repair & Replacement

Bottles must be replaced when scratched or aged.

User Considerations & Preferences

Requires a sunny climate and ongoing availability of plastic PET bottles. Water can be safely stored in the same bottle it was treated in. Users need to keep track of when bottles were placed for treatment and add additional treatment time if weather is cloudy. Several bottles are required for large families.

Feasibility

Availability

Plastic PET bottles can be found around the world.

Cost

PET bottles are generally inexpensive (often much less than US\$0.50). Each household requires multiple bottles (number depends on size of household).

Size & Weight

Bottles are small, light, and easy to transport.

More Information

Details and references: www.hwts.info/products-technologies/a01550ee/solar-disinfection-sodis

See also: SODIS website (www.sodis.ch)

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