

**BREVET DE TECHNICIEN SUPERIEUR****ÉPREUVE : ANGLAIS****GROUPE 16****Durée : 2 heures**

<b>Spécialités</b>	<b>Coefficient</b>
Analyses Biologiques	1
Biochimiste	2
Biotechnologie	1
Esthétique Cosmétique	1,5
Hygiène Propreté Environnement	2
Industries Céréalières	2
Métiers de l'eau	2
Qualité dans les Industries Alimentaires et les Bio-industries	2

*L'usage de la calculatrice est interdit.*

*L'usage d'un dictionnaire bilingue est autorisé.*

Ce sujet comporte 3 pages (y compris celle-ci).

## SAFE TO DRINK

### Sunlight and plastic bottles could save millions of lives

A PLASTIC bottle provides a cheap way to harness<sup>(1)</sup> the power of the Sun to disinfect emergency supplies of drinking water after natural disasters.

5 This week Oxfam discussed using solar disinfection in Assam, India, where the floods earlier this month left 5 million people homeless. The charity says that chlorination tablets for disinfecting drinking water are in short supply.

10 The idea of using plastic bottles for solar disinfection—or SODIS—has been developed by researchers at the Swiss Federal Institute for Environmental Science and Technology in Duebendorf. To disinfect water, people simply fill clear plastic bottles with water and leave them in the sun. The heat warms up the water and the combination of warm water and ultraviolet radiation kills most microorganisms.

15 “SODIS efficiently inactivates bacteria and viruses,” explains project leader Martin Wegelin. He says that tests have shown that 99.9 per cent of the *Escherichia coli* in a sample of contaminated water were killed when the sun heated the water beyond 50°C. At this temperature, the process can take as little as an hour, says Wegelin. Painting half the bottle black and laying it on a corrugated metal sheet shortens the time taken to warm up the water.

20 Wegelin and his colleagues have been testing the effectiveness of SODIS in several rural parts of Asia, Africa and South America, where water-related illnesses claim 5 million victims every year. The results are encouraging. SODIS is particularly good at killing *Vibrio cholerae*, the bacterium that causes cholera. SODIS also inactivated some common human parasites such as cryptosporidium that cause severe diarrhoea.

25 The technology could also be a boon in the developing world’s growing urban areas, where water supplies are often contaminated—as a result, sales of bottled drinks are soaring among the rich. “The target population of the soft drinks industry are well off<sup>(2)</sup> people who buy the bottles. The target population of SODIS are the poor who are interested in empty bottles,” he explains. “Bottles go from rich to poor, reducing the waste in urban areas.”

30 Their idea does have its drawbacks, says Tricia Jackson of the water engineering and development centre at Loughborough University. “There may be a lack of suitable plastic containers in emergency areas,” she says. Alan Read of Oxfam says that the main problem is the absence of education about hygiene. “If there is little water and people have to travel a long distance to get it, they don’t tend to worry what it contains.”

But Wegelin is optimistic that with proper education, people will use SODIS. Wegelin says that in a trial of SODIS, 84 per cent of people said they would continue to use it. “We are now in the process of promoting SODIS at a national level in Asia and South America.”

**Mark Robins**

New Scientist • [www.newscientist.com](http://www.newscientist.com)

26 August 2000

**Footnotes :** (1) (λ1) to harness: *canaliser, maîtriser*.  
(2) (λ23) well off: *riche, fortuné, aisé*.

**COMPRÉHENSION (10 points)**

1. Vous ferez un compte rendu du texte en langue française en mettant en évidence les idées essentielles. (environ 130 mots ± 10 %)
2. Vous traduirez le texte en français à partir de «SODIS efficiently inactivates bacteria» (λ11).....jusqu'à .....« says Wegelin. » (λ 14)

**EXPRESSION EN LANGUE ANGLAISE (10 points)**

Answer the following questions in English (total : 150-200 words)

1. What are the major problems that both the rich and the poor countries of the world have to face in terms of water ?
2. What efforts can we make as individuals to save water ? Do you save water ?