

## Interpreting the results: Four possible outcomes



1

*E. coli* and Coliform Negative

**In the case of: No change in color or turbidity:**  
Absence of change in color or turbidity indicates that the water sample is free of any bacteria and is safe for drinking.



2

*E. coli* Positive

**In the case of: Blue color**  
If the water turns Blue or if there are Blue spots on the tissue, it indicates that there is presence of *E. coli* in the water sample and the water is unsafe to drink.



3

Coliform Positive

**In the case of: Pink/Red color**  
If the water turns Pink/Red or if there are Pink/Red spots on the tissue, it indicates that there is presence of other coliform bacteria in the water sample and the water is unsafe to drink.



4

*E. coli* and Coliform Positive

**In the case of: Blue and Pink/Red mixed indication :** Presence of both the colors means presence of both *E. coli* and other coliform bacteria and indicates that the water is unsafe to drink.

## Disinfecting and Disposing the product



After the test is complete, use the enclosed Chlorine Tablet to disinfect the ECC Vial. A dose of one chlorine tablet dissolved in the water sample within the ECC Vial will ensure disinfection of the bacterial growth present in the post - test scenario.

Once disinfected, follow proper solid waste management techniques to dispose the ECC vial.



## Benefits to Customers



NGOs

ECC Vial can help NGOs and INGOs working on water and sanitation projects to perform on-the-spot water test for *E. coli* and coliform and get easily interpretable results within 24-48 hours.



INGOs



Schools

Schools and housing communities serve a large number of individuals and families. ECC Vial allows these target users to proactively and regularly test their drinking water to ensure its quality on-site and at low cost.



Housing



Private Industries

At low cost, private industries including bottled water suppliers and water tankers can test each batch of drinking water and have confidence in their water quality before dispatching it to end customers.



Hospitals

Hospitals are one of the potential target markets under consideration.

# ECC VIAL



## Background

Water may contain various types of bacteria, which may range from being non-harmful for humans to being health degrading and pathogenic. The presence of pathogenic bacteria in water have closely been tied to outbreaks of various types of waterborne diseases, namely cholera, dysentery, typhoid, etc. *E. coli* is fecal indicator bacteria, meaning that it is likely to be present when feces or raw sewage has made its way into the water supply. The presence of *E. coli* in drinking water does not necessarily mean that the person drinking it will fall ill, but it indicates that over time the household is at a higher risk of waterborne diseases. The World Health Organization recommends, as a guideline, *E. coli* must not be detectable in any 100 mL sample of water.

Lack of knowledge about safe water and sanitation, inability to properly maintain water resources, and lack of consistent water quality monitoring through testing have been some of the biggest challenges in Nepal for many years. Easy and portable products that tests for both *E. coli* and total coliforms in water are not yet available in Nepal. There is a need for a low-cost, simple, reliable way to test the quality of drinking water to help the people of Nepal ensure water safety.

## The “ECC Vial”



The *E. coli* and Coliform Vial (ECC Vial) is an innovative, simple and easy-to-use device that determines if the water sample has fecal contamination, through the detection of *E. coli* and Coliform. It contains a selective medium for the simultaneous detection of both *E. coli* and total coliforms in water. The special characteristic feature of the ECC Vial is such that, the *E. coli* and coliform detection is obtained through designated color

changes, that is the color blue indicating presence of *E. coli* and the color pink/red indicating for presence of coliform.

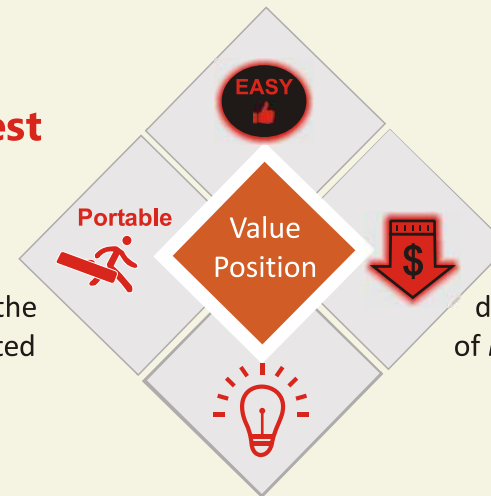
The water sample is incubated for 24 hours at body temperature (35°C) in one of the three available incubators – a pocket incubator, body belt incubator, or a portable mini-incubator (mincubator). If results are negative i.e. no color change, the sample should be incubated for an additional 24 hours. All the incubators mentioned above are the products of ENPHO/Eco Concern.

## Easy to use and interpret results

Test can be performed by placing 10 ml sample water in the vial and incubating the vial for 24-48 hours in one of the available incubators.

### Portable test

The test can be performed at or near the site of the test without the use of sophisticated instruments.



### Affordable

At just NRs. 113 (factory price), this test can detect the presence of *E. coli* and coliform in drinking water.

### Innovative

Using a selective medium, the product can simultaneously detect the presence of both *E. coli* and coliform in water.

Profits from the products to be used in expanding the product to other low-income nations beyond Nepal.

## How to use ECC VIAL

Wash your hands with soap or use sanitizer prior to test (if you have access to gloves, wear them).



Label the vial with sample information, date and time of incubation.



Break and remove the seal on the ECC vial.



Check the 10mL water - level mark on the ECC vial and fill the ECC Vial up to the designated 10 mL water - level mark with water sample.



Place the ECC vial in the incubator. Incubate for 24 hours. If results are negative i.e. no color change, the sample should be incubated for an additional 24 hours. Results after 48 hours are not valid.

