

## PETRIFILM

Petrifilm is a ready-to-use, accessible alternative to lab testing, that allows citizen scientists to count *E.coli* and coliform bacteria in water sample at home – providing a snapshot of bacterial water quality. Due to its low cost and ease of use, as well as a 24-hour timeframe from testing to results, it's a good way to test on a wider scale and determine pollution sources in a localized area.

As an at-home testing kit, it's less accurate and reliable than lab sampling, so where possible it's a good idea to validate results with more concrete testing or sources of data.

## HOW DOES IT WORK?

1. **Sample collection** — Volunteers collect water in sterile sample bottles from specified sites, such as downstream of storm overflow or known polluted areas.
2. **Inoculation** — A measured amount (e.g. 1 mL or a diluted fraction) is pipetted or dropped onto the Petrifilm. The top film is then lowered and gently pressed to spread the sample.
3. **Incubation** — The plate is incubated (typically 18–24 hours) at a controlled temperature (often ~35–37 °C). Some groups use an egg incubator.
4. **Colony development** — Bacteria grow and form coloured or distinct colonies in the film medium.
5. **Counting and interpretation** — After incubation, users count colony-forming units (CFUs) within the designated area and convert to a concentration (e.g. CFU per mL) using the dilution factor.
6. **Recording & validation** — Results are logged (paper forms, spreadsheets, or citizen science app), sometimes cross-checked or validated by labs or partner agencies.

Because Petrifilm is sample-ready (no need to prepare agar, pour plates, wait for media solidification), it saves time and reduces variability.

## TRIED AND TESTED

During July 2025 storm overflow incident, where sewage was spilled into the water at Woodbridge and Melton, Save the Deben and Deben Climate Centre volunteers used Petrifilm to reveal dramatically elevated *E. coli* levels — up to 300 colony-forming units per ml — significantly exceeding safe bathing standards.

Read more here: [Woodbridge and Melton - Storm Overflow Incident on 6th, 7th and 8th July 2025](#)

Friends of the Dart also use petrifilm for wide-scale environmental monitoring very successfully. They test 31 sites weekly, validating results with traditional lab testing: [River Dart Water Quality Testing — Friends of the Dart](#)

## WHERE TO BUY

Petrifilm is produced by Neogen®. You can find out more about the product here: [Petrifilm® Plates | Plates for Quality Indicator Testing](#)

It can be bought from various suppliers, including Gem Scientific: [Petrifilm™ by Neogen | Gem Scientific](#)

When ordering, ensure you choose the right Petrifilm variant (e.g. *E. coli* / *coliform* version, or coliform-only) and check storage/expiry requirements.

## RELATED ACADEMIC STUDIES

[Enumeration of waterborne Escherichia coli with petrifilm plates: comparison to standard methods - PubMed](#)