

# Micro-organisms in reusable drinking containers :10 facts

Reusable bottles and coffee cups save money and are good for the environment, but they're not always good for your health.

We have all sorts of bacteria living in our bodies, most of which are perfectly safe and we couldn't live without. But many of our favourite reusable drinking containers provide the ideal environment for moisture-loving and potentially dangerous micro-organisms to grow.

In fact, researchers say that drinking from the average refillable bottle "can be many times worse than licking your dog's toy".

1

The National Infection Service at Public Health England has said that bacteria can grow in both the container and where liquid builds up around the mouthpiece.<sup>1</sup>

2

PHE also advises that the bottle/cup is cleaned thoroughly after every use.<sup>2</sup>

However a study by Aston University has found that a standard hot drinks cup must be rinsed immediately after use to effectively reduce bacterial load.<sup>3</sup>

3

Many drinking containers have difficult to clean areas, allowing micro-organisms to grow untouched and thrive in crevices, unbeknown to even the most stringent cleaner.

4

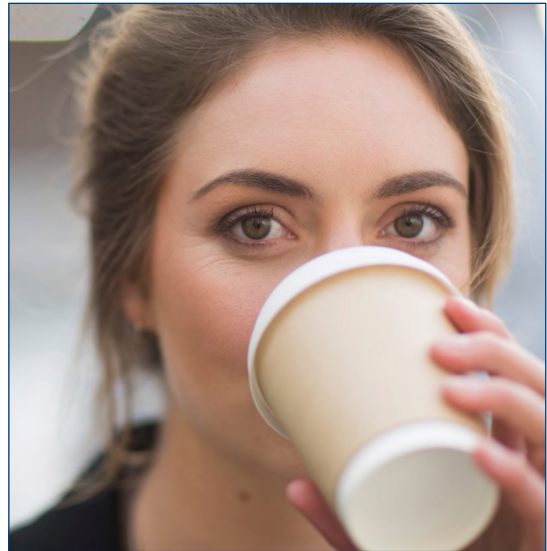
A study has found that while the average pet toy has less than 3000 colony forming bacterial cell units per square centimetre (CFU/sq.cm), the average athlete's water bottle has over 100x times this at 313,499.<sup>4</sup>

5

60% of the bacteria found on reusable water bottles have the potential to cause illness.<sup>5</sup>

6

In 76 samples of water bottles used by school students, almost two thirds of these bottles had bacteria that exceeded the levels recommended for drinking water.<sup>6</sup>



**“Our study has identified that unless reusable coffee cups are washed immediately they can become heavily contaminated with bacteria”**

**- Professor Anthony Hilton,  
Aston University**

7

Slide-top reusable drinking vessels host the most germs. Half of the bacteria found on these containers have the potential to harm, including gram-positive cocci, which can lead to skin infections, pneumonia or blood poisoning.<sup>7</sup>

8

The problem is exacerbated in hot drinks containers where dairy and sugar may be present, providing the perfect food source for bacteria.

9

Recent research has found that 90% of hot drinks cups and mugs in the workplace carry dangerous bacteria, with 20% of these having traces of faecal matter.<sup>8</sup>

10

Coffee shops are legally allowed to refuse to fill a coffee cup that is not clean.

<sup>1</sup> Nick Phin, Public Health England

<sup>2</sup> Nick Phin, Public Health England

<sup>3</sup> Professor Anthony Hilton,  
Aston University

<sup>4</sup> Treadmill Reviews

<sup>5</sup> Treadmill Reviews

<sup>6</sup> Canadian Journal of  
Public Health

<sup>7</sup> The University of Arizona

<sup>8</sup> The University of Arizona

# Micro-organisms in reusable drinking containers: the solution

## Antimicrobial product protection for the lifetime of your reusable drinking container

Biomaster antimicrobial technology provides durable 24-hour product protection against the growth of harmful micro-organisms on the surface of your drinks cup or bottle. Effective for the lifetime of the treated article, Biomaster does not affect the characteristics of the material in any way and offers a low cost added benefit to your design.

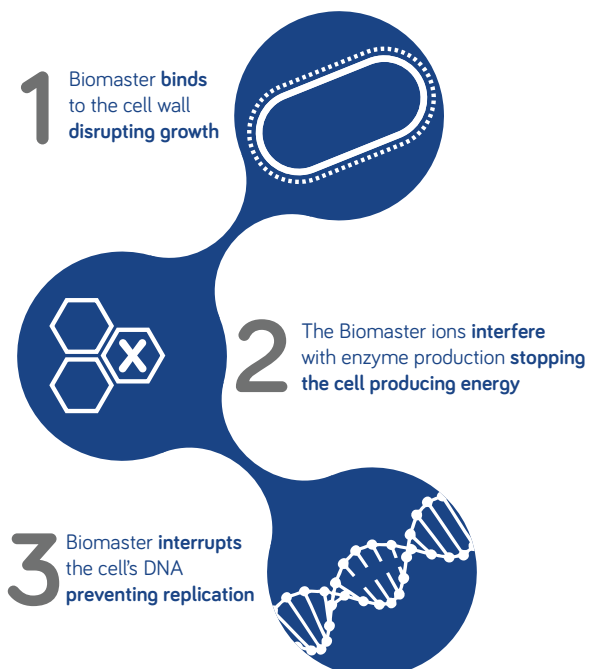
### How does Biomaster technology work?

Biomaster is based on silver ion technology and has three modes of action.

When micro-organisms come into contact with a Biomaster protected drinking vessel, the silver ions prevent them from growing, producing energy or replicating; therefore, they die.

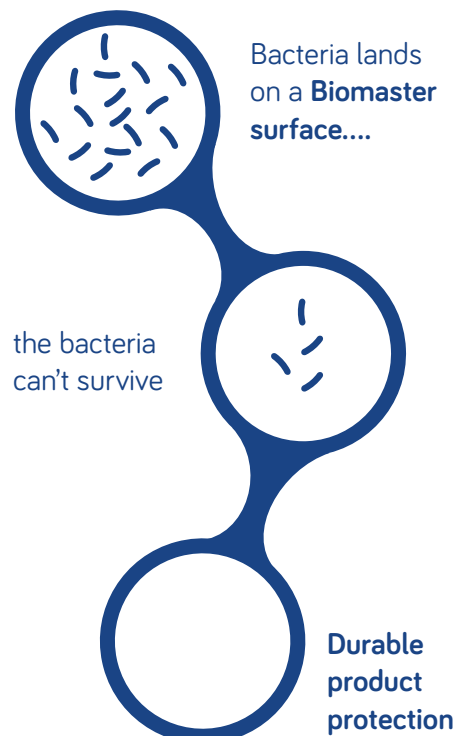
Biomaster is incredibly durable, long lasting and highly active. When incorporated into the surface material, Biomaster becomes an integral part of the product and does not leach or migrate.

You can't see, smell or taste Biomaster. It is entirely safe and already successful used in a number of medical, food and drinking water contact applications.



It's a straightforward process specifying Biomaster into your supply chain. We can even liaise with your manufacturers to ensure the optimum addition rate is achieved without incurring unnecessary costs.

### How effective is Biomaster?



When incorporated into the material, Biomaster additives have been proven to inhibit the growth of micro-organisms in between cleans by up to 99.9%.

ISO standard laboratory testing has shown that Biomaster protected products are effective against a range of bacteria, including Methicillin-resistant *Staphylococcus aureus* (MRSA) and Vancomycin-resistant *Enterococcus* (VRE).