

MAKE YOUR BUSINESS
CLEANER, LEANER
& GREENER

BioHygiene



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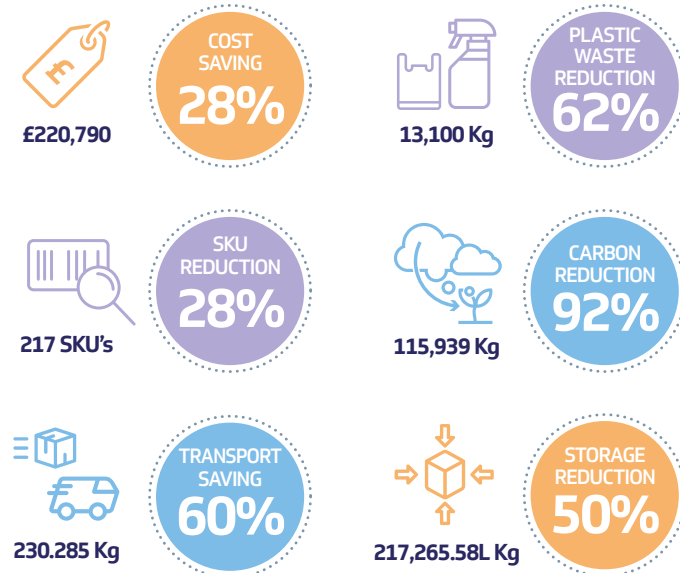
Why Choose BioHygiene?

BioHygiene is the leading biotech cleaning brand in the UK. Launched in 2016, we've helped over 500 businesses reduce their environmental impact by transitioning from harmful, non-renewable chemicals to eco-friendly products designed to meet the needs and demands of the modern world.

We believe that you don't need to compromise on quality or cost to be sustainable – that biotech cleaning can be more effective, and easier to use than traditional chemical products.

Free from hazardous toxins, our enriched formulas combat odours directly at the source and keeps them at bay long after application. With powerful, long-lasting cleaning action, our multi-purpose biotechnology helps extend product shelf-life, whilst our PCR and FSC packaging works to reduce pollution and sustain the environment.

The benefits of switching to BioHygiene



How cleaning biotechnology works

Cleaning products attack dirt on surfaces by emulsifying, lifting, dispersing, sequestering, suspending and decomposing soils. Active agents (surfactants) stir up activity on surfaces to help trap and remove dirt. Surfactants may act as detergents, wetting agents, emulsifiers, foaming agents, or dispersants.

Surfactants are a primary component of cleaning detergents. Anionic surfactants (positively charged) are excellent for lifting and suspending particulate soils, while nonionic surfactants (neutrally charged) are very good at emulsifying oils and removing organic soils. They are frequently used together to create multi-purpose cleaners.

Amphoteric surfactants can be anionic, cationic (negatively charged) or neutral. They are often used as co-surfactants because of their mild nature and foam boosting properties. Cationic surfactants are commonly used in fabric softeners, antistatic agents, rinse, corrosion inhibitors, particle dispersants, emulsifiers and biocides.

Our Technology

Our market-leading cleaning products harness the power of microbes, enzymes and natural plant extracts that work deep into surfaces to quickly break down and remove dirt, grime and grease.

Microbes

The microbes, specifically bacteria, in BioHygiene products, are present in the spore form. When the bacteria are introduced to suitable conditions, the spores germinate and the bacteria begins to grow, colonising the area of application.



Bacteria grow by simple cell division, i.e. one cell divides into two, two cells into four and so on. This can happen extremely quickly, for example every 20 minutes under ideal conditions.

bacteria can take up into their cells and use for energy and growth. This "feeding" process is what removes organic soiling and prevents unpleasant odours, providing long-term cleaning action.

Enzymes are proteins that speed up biological reactions. Examples include:

- **Amylase** – breaks down starch
- **Cellulase** – degrades cellulose (e.g. vegetable matter)
- **Lipase** – breaks down fats, oils and greases
- **Protease** – digests proteinaceous matter
- **Uricase** – breaks down uric acid

Organic Acids

Organic acids, such as lactic acid and citric acid, are produced by fermentation and can therefore be regarded as completely natural products. They are less hazardous than traditional mineral acid alternatives like hydrochloric acid and sulphuric acid, and have far more favourable environmental profiles. Organic acids have excellent cleaning and descaling properties and some are useful disinfectants.



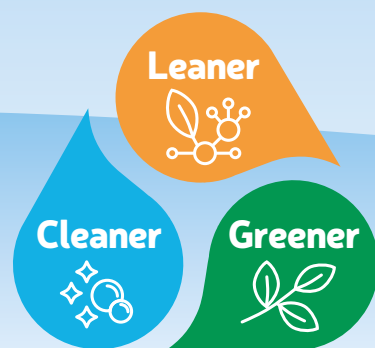
Free Enzymes

Enzymes are added directly to our formulations, where they are referred to as "free enzymes". They work in exactly the same way as bacterial enzymes, providing immediate action by breaking down organic matter and eliminating odours.

Free enzymes are used in conjunction with bacteria to provide an initial "kick-start" of activity until the microbial population is established and the bacteria start to do their work.

Plant Extracts

Plant extracts absorb or bind to odiferous molecules, removing unpleasant odours. Others have disinfecting properties, where regulations allow.



Ingredient selection

At BioHygiene, we make intelligent surfactant choices from the start, using biodegradable, sustainable, bio accumulative ingredients that achieve high performance with minimal human or environmental impact.

Our eco-solvents are made entirely from renewable, biobased resources that replace and reduce conventional solvent and hazardous chemicals and achieve a neutral or positive CO2e impact.

We use a combination of Ecotec and Biotech ingredients, including plant extracts, microbes, enzymes and fermentation extracts, all with favourable ecotoxicity profiles and low health hazards. Extraction of raw materials is carried out in Europe, reducing transport-related CO2e from

sourcing ingredients by 90% compared to chemical technology.

Our ingredients are first class degreasers and have excellent solvency and soil-penetrating properties, providing a multifunctional cleaning boost and enhancing performance safely and responsibly. They are readily and rapidly biodegradable, carbon-neutral and contain no environmentally hazardous ingredients.

High dispersant power leads to improved product properties and performance. An absence of volatile organic compounds means there are no flammability concerns. Our technology uses powerful chelating agents to bind hard-water metal ions that interfere with the cleaning

process. They are made from natural, biodegradable, renewable raw materials, providing a greener alternative to traditional chelates such as EDTA and NTA.

Raw material selection often has a trade-off between flammability, health hazards, ecotoxicity, sustainability, efficacy, and cost. Chemicals used in traditional cleaning products are frequently derived from non-renewable resources, such as petrochemicals, and are harmful to human health and the wider environment. High levels of volatile organic compounds (VOCs), storage, and transport can also be issues for traditional removers.

Packaging

We pack our products in post-consumer recycled plastic bottles. Bottles that have completed their lifecycle are collected and transported to recycling facilities and made into PCR resin. New bottles are made from PCR resin, providing a circular life cycle. Using PCR bottles helps us stop single-use plastic, reduce physical plastic pollution, and lower CO2e by up to 85%.

Biotechnology is incredibly effective at 'super' concentration levels, which helps to reduce the amount of product needed to achieve a superior clean. When combined with refillable PCR

bottles, our products achieve up to 90% reduction in single-use plastic bottles, transport weight, storage, and overall environmental impact.

We box and ship our products in cardboard made from 80% recycled material. These boxes can be fully recycled and are FSC (Forests for All Forever) certified.

USING PCR BOTTLES HELPS US STOP SINGLE-USE PLASTIC & LOWER CO2e BY UP TO **85%**

WE BOX & SHIP PRODUCTS IN CARDBOARD MADE FROM **80%** RECYCLED MATERIAL

