

## **Questions and Answers**

### **What is Microban®?**

Microban® is an antibacterial technology that can be safely incorporated into most plastics and textiles to continuously protect them against the growth of bacteria that can cause contamination or odour. When used in conjunction with good hygiene practices, Microban works in-between cleanings to inhibit the growth of a broad spectrum of bacteria, mould, mildew and fungi for the life of the product. Microban's protection has been proven safe, effective and durable through extensive testing by independent laboratories and via real-life use of Microban protected consumer and industrial products.

Microban® antibacterial protection is being introduced into consumer products to address the growing public concern over the prevalence of harmful bacteria, such as E. Coli, Salmonella, Listeria, Staphylococcus, and Streptococcus, as well as odour causing bacteria found in cloths, tea towels and even socks. Microban® was originally developed to provide antibacterial protection for medical devices, surgical and hospital equipment. With the success of these applications over the last decade, broader commercial applications became possible. Consumer and industrial products are a natural outgrowth of Microban's commercial success.

### **Does Microban® Kill Bacteria?**

Microban® is an antibacterial technology that is effective in controlling the proliferation of common food borne pathogens and odour-causing bacteria. It has been demonstrated, even at low concentrations, over time to kill by reducing the level of Salmonella spp., E. Coli O157 and Listeria Monocytogenes by over 99.9%. Bacteria vary in nature and as such a measure of an antibacterial's effectiveness against each genus of bacteria is measured by its MIC (Minimum Inhibitory Concentration). Microban's active ingredient has a low MIC value for the majority of bacterial types, meaning that, in relatively small quantities, Microban is highly effective against a wide range of bacteria.

### **How does Microban® Work?**

Microban® is incorporated into the product at the manufacturing stage. Enough Microban® is incorporated to ensure continuous protection throughout the product's life. Microban® works by penetrating the bacteria's cell wall, thereby neutralising the bacteria's abilities to function, grow and reproduce. This physical mode of action is similar to that of the Chlorine sanitising action in water and is highly preferable and consistent over time when compared to the chemical poisoning mechanism of many antibiotics and antiseptics that can, over time, encourage resistant strains of bacteria to develop.

### **Will scratches on a product diminish Microban's® antibacterial effectiveness?**

Microban® antibacterial protection is not a coating on the surface of materials - it is literally part of the product to which it is applied. Scratches or chips, therefore, will not affect the ability of Microban to combat bacteria. Other types of abrasion, including cleaning, will not impede Microban protection. Microban's protection keeps working to protect long after surface coatings have been removed. Even abrasive cleaning does not lessen its protection; abrasion triggers the migration of Microban molecules from within a product to its surface. Microban therefore provides continuous protection even in areas which are difficult or inaccessible to clean - for example the cuts and scratches in a chopping board

### **Is Microban® safe?**

Yes. The active ingredient of Microban is a common ingredient of cosmetic products such as shampoos, soaps, and deodorants. It is also contained in Colgate toothpaste and mouthwash, where we routinely swallow 10-15% of the product on a daily basis. Presence in these everyday formulations is substantial proof of Microban's safety. In addition, Microban is an approved preservative in EC Directives related to the safety of hospital products. In Microban protected products, the level used is typically below those used in the cosmetic products, only a small fraction is on the surface at any time and it's bound to the surface. It only attacks thin cell walls (such as those of bacteria) and is harmless to human, animal and vegetable cells.

### Why is Microban® different from disinfectant?

Disinfectants provide an instant but short term solution, whilst Microban® gives long lasting protection, working continuously to prevent the growth of bacteria throughout the life of the product. Microban will not eliminate the need for disinfectants, but it does provide an added layer of defence against harmful bacteria in between regular cleanings.

### Is Microban's protection durable?

Extensive laboratory trials with regard to the durability of products with Microban antibacterial protection have been carried out at Independent Testing Laboratories – Law Laboratories. Durability cycles and normal test procedures have been devised and developed for all the current products within the Microban consumer and industrial products ranges. Products are subjected to extensive testing to determine longevity. For example - Cutting Surfaces (boards) have been subjected to 250 dishwasher cycles and after each 50 cycles, mechanical abrasion of the surface was performed to mimic general use of the surface. As part of the due diligence monitoring program, products have been recovered from the butchery and delicatessen counters of selected stores, at the projected end of life, for efficacy testing. These products have still demonstrated efficient and acceptable antibacterial activity at and beyond the projected end of life

### Does Microban® taint food?

No - to ensure that products containing Microban do not bring about deterioration in the organic characteristics of food or any unacceptable change in its nature, substance or quality, samples of Microban consumer products have been subjected to laboratory taint tests. These tests demonstrated that there was no significant difference perceptible between the control foods and the foods exposed to the surfaces containing Microban.

### How can we be sure Microban® is working effectively?

At Microban International, every claim we make and every product we put on the shelf is rigorously tested by Law Laboratories, a leading independent laboratory testing company. The Microban Certification and Registration Programs ensure that all products carrying the Microban® name are tested on a regular basis to ensure they conform to the necessary standards. This includes the testing of sites or facilities where Microban technology is used in the processing and manufacturing of food. **No product or company is allowed to use the Microban® name without proving it is able to meet the exacting efficacy requirements established by Law Laboratories.**

### How does Microban® reduce the risk of cross-contamination?

Microban is embedded evenly within the product so that the antibacterial protection is continuous and lasts throughout the life of the product. The majority of bacteria that come into contact with Microban protected surfaces are destroyed and so the risk of inadvertent transfer (cross-contamination) to other foods or surfaces via handling is dramatically reduced. It must be stressed that Microban protection is not a replacement for good hygienic practices but is an augmentation of them. For best results, Microban should be introduced as a key part of your normal 'best practice' routines

### Do we have to still have to clean products with Microban® antibacterial protection?

Absolutely. Good hygiene practices should always be observed, including the washing of hands and cleaning of products. Microban® provides *added* protection in-between cleanings. Whereas bacteria may still exist on a non-Microban protected product after cleaning, it will not exist on a Microban® protected product. Microban offers continuous protection, even in the areas that are difficult or inaccessible to clean - e.g. cuts and scratches on chopping boards.

### Is Microban® approved by the EU for use in food contact applications?

The active ingredient in Microban has gained approval as a food contact additive in plastics in accordance with EU Directive 90/128/EEC.