

Frequently Asked Questions

Protac AMP Film

with Additional Microban® Antimicrobial Protection

What is Protac AMP?

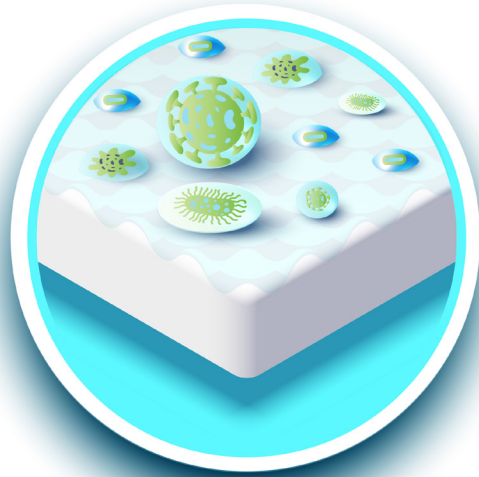
Protac AMP Film is a 150µ (6 mil) textured polyester surface protection film incorporating Microban® ZPTech® antimicrobial protection. When microbes meet the Microban® reservoirs in the film, the cell wall of the microbes is disrupted. The result is a film surface providing constant additional protection against the spread of microbial contamination.

Protac AMP is Durable, Cleanable and Antimicrobial.



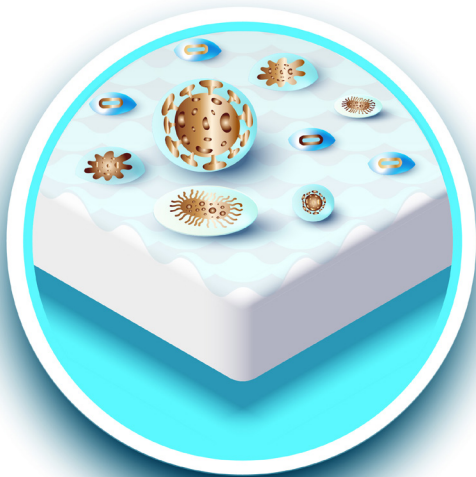
1. Full Integration

The technology is integrated into the film surface during the manufacturing process. It becomes part of the intrinsic physical structure of the material at a molecular level and will not wash off or wear away.



2. Surface Contamination

The film surface becomes contaminated with bacteria as a result of human contact, environmental conditions and/or cleaning lapses



3. Technology At Work

The technology disrupts the vital life process and biological functions of the bacteria. This means they cannot reproduce and subsequently die.



4. A Cleaner Surface

The treated film surface is protected from bacterial proliferation for its expected lifetime and remains cleaner in-between cleaning.

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What is a microbe?

Microbes are microscopic organisms that are typically so small that they are invisible to the human eye. They could be present on any surface without being seen.

They are divided into viruses, bacteria and fungi.

- **Viruses:** are very small, nanometre scale. They are parasitic and can only multiply within the body. They can only be controlled with a wide range of recommended disinfectants. There are no registered anti-viral additives for treated articles. Frequent cleaning is essential to remove them. See page 5 for more details on the COVID-19 virus.
- **Bacteria:** are slightly larger, micrometre scale, single celled organisms. In the right conditions they can multiply, doubling in number every 15 to 20 minutes. They can proliferate invisibly on most surfaces. There are registered antimicrobial materials for treated articles which can be used within surfaces to protect against bacterial proliferation.
- **Fungi:** can grow from micrometre scale upwards. They can be single celled yeasts or multi-celled organisms like mould and mildew. In the right conditions they spread by growth of mycelia and sexual and asexual reproduction. They can become very visible, like the black mould often seen in damp environments like bathrooms. There are registered antimicrobial materials for treated articles which are effective against fungi.

What is the difference between antibacterial and antimicrobial?

The primary difference between antibacterial and antimicrobial substances is the types of microorganisms they act upon.

- **Antibacterial Technologies:** are effective against a broad spectrum of harmful bacteria including E. coli and MRSA. Antibacterial treated articles will typically incorporate silver active ingredients.
- **Antimicrobial Technologies:** minimise the presence of bacteria *and fungi and mould*. The broader spectrum performance of antimicrobial substances makes them perfect for use in hygiene critical environments such as schools, hospitals, and commercial kitchens.



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What is Protac AMP with Microban® ZPTech® technology?

Microban® ZPTech® is an antimicrobial technology incorporated into the Protac AMP textured hard coat during the manufacturing process. This process ensures even distribution of Microban® ZPTech® technology throughout the hard coat surface.

Microban® ZPTech® is Zinc Pyrithione.

How does Microban® ZPTech® technology work?

Microban® ZPTech® technology inhibits the growth of microorganisms by making them unable to function, grow or reproduce.

By actively fighting the growth of microbes, Microban® ZPTech® technology make Protac AMP surfaces easier to clean and keep clean for longer.

What types of Microbes does Microban® work against?

Microban® ZPTech® technology is effective against most common bacteria, mould and mildew, including E. coli, MRSA and Staph.

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Antimicrobial Technology Comparison

| ZPTech (Protac AMP) | Silver | Copper |
|---|---|---|
| Antimicrobial = antibacterial + antifungal + anti-algae | Antibacterial | Antibacterial |
| Globally registered for use in treated articles | Globally registered for use in treated articles | BPC registration for EU is in 'Initial application for approval process', it is not registered with ECHA for P7 In the US, Copper is registered as a pesticide |
| Registered in US only for indirect food contact | Registered in US only for indirect food contact | Not Recommended |

Is Protac AMP approved for food contact?

ZPTech® is approved for use in indirect food contact applications, as indicated by the United States Food and Drug Administration (FDA) and Environmental Protection Agency (EPA).

ZPTech® is not registered in EU for direct or indirect food contact.

Protac AMP is made for general applications under general industrial conditions. It is not made under conditions normally applied to food contact control regimes and do not meet the requirements of Commission Regulation No. 10/2011.

This means that it is not suitable for applications associated with machinery to process food, food packaging, containers to transport or hold food.

It would be suitable for applications like table cladding, coffee machine switch, etc.

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Can the Protac AMP effectiveness be decreased by cleaning?

Testing by 24 hours soaking in some solvent cleaners indicates that the effectiveness of the Microban® ZPTech® technology may be diminished under certain circumstances. In the same testing with aqueous based cleaners there is no effect on Protac AMP effectiveness.

Will the effectiveness of Protac AMP be affected by UVC cleaning methods?

The UVC has widespread use for control of water-borne microbes. It is relatively new as a treatment method for plastics. We are evaluating the impact of such systems on our coatings and the antimicrobial properties contained.

If this is a critical requirement for an application and there are methods, we can follow those. We will work with our partners to evaluate if such cleaning methods alter the product performance.

Will the film irritate skin? Is it sensitising?

No. Protac AMP will not irritate skin and is not sensitising under normal conditions. Please note, that Protac AMP is not designed to be used in close contact with skin for extended periods of time. Any downstream user wishing to use Protac AMP in close contact with skin for extended periods of time should initiate their own testing protocol.

Is Protac AMP effective against COVID-19 virus?

Any product that is effective against a virus (COVID-19) would need to go through an onerous registration process. Each country/territory has rules about the extensive independent verification that would be required. The product would then need to be registered as an anti-viral product. It could not be considered as a treated article.

Even if Microban® ZPTech® technology has been tested to be effective against viruses, at present we have no information on the status of that testing. The registration situation would also need to be resolved before any claims could be made.

In the meantime, viruses need to be controlled by cleaning with recommended disinfectants.

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Is Protac AMP with Microban® ZPTech® technology safe?

Microban® ZPTech® technology has undergone rigorous testing and is registered with EPA, BPR and many other global regulatory organisations for use in treated articles such as Protac AMP.

Does Protac AMP with Microban® contain triclosan?

No. Triclosan was previously, commonly used as an antimicrobial agent in personal care and consumer products like tooth paste and clothes. It has lost favour for both safety and ecological concerns. It is under assessment as Endocrine Disruptive (ED) and as Persistent, Bioaccumulative and Toxic (PBT). It is not present in Protac AMP.

Does Microban® ZPTech® technology leach or migrate from the film?

No, Microban® ZPTech® technology is permanently locked into the hard coat and cannot leach or migrate from the film.

Can Protac AMP contribute to the development of antibiotic resistant bacteria?

No, they cannot lead to the development of bacterial resistance or superbugs.

How long does the antimicrobial protection work for?

Microban® antimicrobial protection in Protac AMP works continuously 24 hours a day for the useful life of any product it is used on. It will not wash off or wear away. Protac AMP has an antimicrobial lifetime of 15 years.

Will scratching or scuffing the film diminish the microbial deterioration protection function?

No. Microban® ZPTech® technology is distributed throughout the coating during manufacture.

Does Protac AMP still need to be cleaned?

Yes. Protac AMP with Microban® ZPTech® technology provides continuous microbial deterioration protection. Dirt or residues remaining on the surface can harbour bacteria. Normal cleaning practices must therefore be maintained.

What cleaning products can be used with Protac AMP?

Protac AMP has been tested for use with a wide variety of cleaning products. They do not affect the function or aesthetics of the hard coat or its antimicrobial performance. Cleaning products use a variety of active ingredients and we maintain an ongoing test program to ensure we routinely test and check new ingredients and compounds. If a cleaning product is not referenced on our literature contact your local Drytac representative for further information.

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Manufacturing Processes

Drytac's unique adhesive science creates print media, protective films and bonding tapes that deliver outstanding results.

These films are designed to be processed in a variety of ways including printing, baking, cutting, forming, moulding. During these processes the films are subject to solvents, high temperature, high pressure and high levels of UV exposure. In some cases, several processes at the same time or in sequence.

Any first surface printing will cover over the antimicrobial hard coat. This will prevent the antimicrobial agent contacting the microbe. The area of the first surface print will no longer be antimicrobial.

Theoretically the efficacy of Microban® ZPTech® technology could be affected by some of these processes or combinations of processes. However, the antimicrobial agent is encapsulated in the hard coat so predicting any potential effect is difficult.

We take a more empirical approach and test products after processes and combinations of processes where we think there is a risk of the antimicrobial effectiveness being degraded by processing.

If you have concerns, please discuss with your Drytac sales contact and we can agree a trial as required.

Antimicrobial – Peace of Mind

Every single roll of Protac AMP undergoes:



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Regulatory Claims

BPR and EPA are EU and US agencies for regulating biocides and pesticides. Biocides and Pesticides are used to kill microbes. The registration processes for gaining approvals in both regions is expensive and takes considerable time. This registration process is obligatory for aggressive invasive products. For example, a novel agrichemical pesticide would, understandably, need significant test data before being registered to be sprayed into the environment and onto food.

There is, however, a classification of products that are called “treated articles” which are exempt from the registration process. Treated articles are items that are treated with an antimicrobial biocide or pesticide to protect the item from degradation caused by microbial growth. In the case of Protac AMP the film hard coat contains an antimicrobial additive. For these items the antibacterial additive needs to be registered for use in treated articles. Protac AMP uses a biocide from Microban®. Microban® ZPTech® is Zinc Pyrithione and is registered for use in treated articles. Protac AMP therefore meet the regulatory requirements.

All claims that we make about a treated item need to be carefully considered. Bacteria and fungi can grow and multiply on surfaces and cause degradation and spoilage of the surface. ZPTech® is included in Protac AMP hard coat to control that growth in order to protect the surface of the film. It is important that we do not claim that the antimicrobial properties protect users or others against bacteria, viruses, germs, or other disease organisms. We cannot stretch from the surface to health claims for users.

Viruses are a different case. They can only multiply in the body and therefore do not grow on surfaces and do not cause surface spoilage. Protac AMP could therefore not be considered as viricidal. It could only be classed as an antiviral if it went through the registration process as a viricide.

The regulatory framework is different depending on the geographic market served. ECHA and EPA (EU and US) regulations are very similar. In some details the US differs from the EU. For instance, the product claims permitted are more restricted in the USA. Outside the EU and US, markets are more fragmented and generally perceived to be less onerous.

In practical terms this means we need to take care as to how we label products and what we say in our supporting literature and presentations. Protac AMP supporting materials are reviewed regularly by all parties involved.

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Registration Details

In Europe, Zinc Pyrithione (CAS: 13463-41-7) is registered via the Biocidal Products Directive (BPD).

The registration details are held within ECHA's Article 95. The most recent publication of this can be downloaded at the following web address for verification purposes:

<https://echa.europa.eu/information-on-chemicals/active-substance-suppliers>

Quality

Drytac supplies material in line with specification. Materials are tested for physical and functional properties during the manufacturing process to ensure they meet specification. Each stock roll of Protac AMP is tested for antimicrobial efficacy at an independent laboratory prior to release.

Every stock roll is independently tested against E. Coli according to ISO 22196:2011 to ensure that Protac AMP meets the efficacy requirement for the product. Periodically a wider panel of microbes are tested to ensure continued efficacy.

Testing can also be carried out and to satisfy novel or unusual customer requests.

We do not test all products against all microbes prior to shipment.

We will provide customers with a CoA on request.

Safety and Warning

Drytac recommends that the company/operator read and review the provided resources for the appropriate health and safety warnings before use. Please contact your Drytac sales representative for more information.

Use of Microban® name: Under our agreement Drytac can pass on to our customers the ability to use the Microban® name (but not logo) on point of sale and promotional materials for products manufactured with our Protac AMP materials. This does not cover the packaging or product itself. When we sell material to a customer, we do not pass on the right to use the Microban® trademark as a co-brand in the marketing and sales of their products. For this, the customer would need a License or Agreement from Microban®.

For more information, performance and warranty guidelines please contact your local Drytac office.

Please Note: Please refer to the TDS for more technical information. The technical information, recommendations and other statements contained in this document are based upon testing and experience Drytac believes to be reliable, but the accuracy and or completeness is not guaranteed. Drytac recommends a small test be performed to determine suitability beforehand. This document does not constitute a warranty of any kind.

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