



Frequently Asked Questions (FAQs)

1. What is Duraban™ antimicrobial product protection?

Duraban™ technology is built-in antimicrobial protection for products, coatings, fibers and surfaces. Duraban™ antimicrobial protection gives products an added level of protection against damaging microbes such as bacteria, mold, mildew, fungus, and algae that cause stains, odors and product deterioration.

2. How does the Duraban™ technology work?

The active ingredient in Duraban™ forms a colorless, odorless, positively charged polymer that molecularly bonds to your products surface. You could think of it as a layer of electrically charged swords on the molecular level. When a microorganism comes in contact with the treated surface, the C-18 molecular sword punctures the cell membrane killing the cell and as an added measure the electrical charge shocks the cell. Since nothing is transferred to the now dead cell, the antimicrobial doesn't lose strength and the sword is ready for the next cell to contact it.

3. What benefit do my customers get from products with Duraban™ antimicrobial protection?

Duraban™ protection continuously fights the growth of damaging microbes such as, bacteria, mold and mildew that can cause stains, odors and product degradation. Duraban™ protection makes products easier to clean and keeps them cleaner and fresher between cleanings. Duraban™ is environmentally safe, permanent and does not give off harmful volatile organic compounds (VOC's) that are associated with climate change..

4. What is the difference between Duraban™ and other antimicrobials on the market?

Conventional antimicrobials and biocides penetrate living cells and kill by way of poisoning the organism or disrupting a vital life process. They are designed to act quickly and dissipate quickly. Most commercial antimicrobials used for treating surfaces do an adequate job of killing bacteria and fungi, although most have a limited range of effectiveness. The Duraban™ technology takes a totally unique approach. It provides an effective initial microbial kill when applied, but, unlike the conventional methods, it also provides long-term control of growth on treated surfaces, often for the life of that surface. The surface itself is modified to make it antimicrobially active.

5. Against what types of bacteria is Duraban™ effective?

Duraban™ is effective against nearly all bacteria, plus fungus, algae, and mold. A representative list of microbes against which Duraban™ has been tested may be obtained by contacting our corporate office.

6. Can Duraban™ be washed off?

No. Duraban™ forms a permanent covalent or ionic bond to most surfaces and cannot be washed off or leach into the environment. For example, testing has proven that Duraban™ still provides 94% reduction of standard test organisms on polypropylene fabric through more than 40 launderings at 60° C (hot water). Details may be obtained by contacting your sales representative.

7. Will this technology adversely affect the skin or environment?

No. Since the antimicrobial is permanently bound to the surfaces it protects, it does not leach from the fabric to the skin or into the environment. Extensive toxicological testing shows the antimicrobial does not cross the skin barrier.

8. What biocide is used?

Duraban's active ingredient is 3-trihydroxysilylpropyloctadecyldimethyl ammonium chloride. The application level can vary by substrate, but generally the level is approximately 0.25% - 1% of the antimicrobial's active ingredient onto the weight of the substrate. The most commonly used product contains 0.5-1.25% active material.

9. Does the biocide use a heavy metal?

No. Duraban™ does NOT contain any heavy metals. Tin, arsenic, silver and copper are often used in other antimicrobials.

10. Does Duraban™ give off gases after application?

No. Duraban™ does not volatilize, dissipate, or leach onto other surfaces or into the environment. The chemistry polymerizes where it is applied and forms a permanent bond that typically lasts for the life of the treated surface. Normal cleaning should not remove the treatment; although it can be abraded away.

11. How is Duraban™ applied?

Duraban™ is applied in aqueous solution and can be inserted into almost any wet process during manufacturing. They can also be applied directly onto finished goods. The antimicrobial is easily integrated into most jet, spray, bath, pad, and batch processes. The antimicrobial is cationic so it mixes well with other cationic and nonionic finishes (most softeners) and performs well in the same bath.

12. How long does the Duraban™ last?

Since the cured antimicrobial is nonvolatile, insoluble, and non-leaching, Duraban should last for the life of the treated surface. The life of a treated surface depends on a number of factors, not the least of which is surface preparation. If you treat a dirty or unstable surface, when the dirt comes off or the surface is disturbed, some of the antimicrobial will be removed with it. Abrasive or caustic (pH>10.5) cleaners will also shorten effective life.

13. Is there a test method to determine if Duraban™ is present?

Yes. Duraban™ is based on an active ingredient that, in most cases, can be easily detected. A simple method of detection is available to demonstrate the presence or absence of the treatment. Bromophenol Blue (BPB) stain testing clearly shows the presence of Duraban™ in a matter of minutes.

14. What tests show that the growth of bacteria has been prevented?

Microbiological testing is what establishes the baseline standard that is used. Duraban's scientists have more than 15 years of experience performing extensive microbiological tests such as bacterial retrievals, fungal growth tests (AATCC 30, ASTM G-21, ASTM D3273) and bacterial growth tests (AATCC 100, ASTM 2149-01). We have a long history of bacterial and fungal testing on many products including concrete, wood, textiles and building products. Specific studies are available on our web site or you may contact a sales representative.

15. What other tests will Duraban™ perform?

Duraban™ laboratories can conduct odor panel studies and Quality Assurance testing. Additionally, we can co-ordinate testing at various anti-microbial lab that have been certified by the EPA, FDA and are also GLP certified.

16. Why is Duraban™ so durable?

Because of the exceptional chemical bond to the surface that is being protected, the bonded polymer is neither soluble nor volatile. The unique bond results in the Duraban™ antimicrobial polymer becoming an integral part of the substrate.

17. Will its use result in “super bugs”?

No. Adaptation studies show that microbes do not adapt to Duraban™ and no “zone of Inhibition” develops. Therefore, micro organisms cannot adapt to Duraban™.

18. Will its use change the feel of the surface?

No. The chemicals adhere at the molecular level and form an extremely thin film (typically 3 nanometers - a human hair is about 10,000 nanometers). This extremely thin layer does not affect the look and feel of the surface.