ANTIMICROBIAL TREATMENTS

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PART I: What They Are and Why They Are Used

Recently there has been a lot of talk about antimicrobial treatments, especially since the introduction of a new antimicrobial product to the cleaning industry a few months back. There appears to be a lot of confusion about the efficacy, safety, advantages and limitations of the various types of these treatments available. Also, we have received numerous inquiries about some basic questions related to antimicrobials such as: What are antimicrobial agents? How are they applied? How effective are they and on what? Should cleaners be using them and a host of other similar questions.

Beginning with this issue, we shall be publishing a series of three articles on antimicrobial agents. They have been written specifically for Cleaning & Restoration Magazine by personnel at Dow Corning Corporation, producer of one type of antimicrobial agent.

The first article will serve as an introduction to this concept; what microorganisms are, where they are found and their growth conditions; the advantages antimicrobial agents offer and where all such treatments can be applied.

The second article will discuss the differences among the various types of antimicrobials available, and how professional cleaners can go about choosing the right product for a given application condition. Safety of various antimicrobials will also be detailed.

The final article in our series will be a report on the tests available to gauge the effectiveness of antimicrobial treatments. Results of a comparative analysis conducted on the effectiveness of three different types of antimicrobials will be presented.

We know that you will enjoy reading these articles and we hope that you will save them for future reference. The more you understand about antimicrobials, the better it will be for your business and your customers. Neeraj Gupta
ASCR Textile Specialist

Antimicrobial agents have been used for many years, but only recently have they been used in the carpet cleaning industry. By definition, an antimicrobial is an agent that destroys or inhibits the growth of microorganisms. Bacteria, fungi (mold and mildew), yeasts and algae are the major classes of microorganisms.

Microorganisms are in the air we breathe, our bodies, the soil and on all surfaces with which we come in contact. Their accumulation on various surfaces and on carpeted flooring in particular, is not surprising. Organisms are deposited from the air, from spills of food and drinks, from tracked-in soil and from the occasional mishap by the household pet and - relevant to health care facilities – from uncontrolled bodily functions such as urine.

When certain conditions exist, these organisms grow and multiply. The conditions necessary for growth are a nutrient source such as food (dirt), warm temperatures, and moisture resulting from spills, humidity, or the water left in the carpet after cleaning.

When these conditions exist microorganisms can thrive and flourish. The product of microbial growth and metabolism lead to many problems such as unpleasant odors which can persist even with frequent cleaning. These odors range from stale to musty-mildew to putrid and foul smelling to ammonia like. Microbial growth can also result in unsightly stains and discoloration and actual deterioration of some carpet yarns and rotting of certain backing materials (figure 1). From a hygiene standpoint, the growth of pathogenic microorganisms or “germs” may contribute to the spread of disease and infection. For many allergy sufferers, the growth of mold and mildew can significantly aggravate their condition or even initiate an allergenic response.

In 1980, over $557 million was spent on disinfectants, air deodorizers, and carpet

fresheners. Obviously, people are concerned about the problems associated with microbial growth and are actively seeking and willing to pay for solutions. Hospitals, nursing homes, and schools have long recognized the need to control their environment for the comfort and health of their occupants. With today's health conscious trend, restaurants, offices, and homeowners are more concerned than ever about odors, appearance, and hygienic freshness.

Herein lies the key to the value of antimicrobial treatments. With today's antimicrobial technology, consumers are able to enjoy the advantages of carpeting and still be assured that they are safely protected against the growth of undesired microorganisms.

Antimicrobial treatments offer the consumer many benefits:

1. They help to keep carpeting fresh by controlling the growth of odor causing microorganisms.
2. They improve carpet appearance by preventing unsightly stains and discoloration caused by microbial growth.
3. They extend carpet life by controlling microorganisms that cause odor, discoloration, and fiber deterioration.
4. They create a hygienically fresher, healthier environment by reducing microorganisms which may contribute to the spread of disease and infection.
5. They may reduce the risk of allergenic responses resulting from the growth of mold, mildew, and other microorganisms.

Because antimicrobial treatments offer the consumer so many benefits, there are several applications for which they may be used. Preventing the growth of microorganisms is important…

- In any household in which children live. Maintaining hygienic freshness is an essential part of good housekeeping.
- In any household which contains pets. Most pets have an occasional mishap, and they also track in dirt which contributes to microbial growth and odor.
- In households where the occupant suffers from mold allergies.
- In any home where the occupants take a great deal of pride in keeping the house looking good and smelling fresh.
- In hospitals, doctor's offices, and clinics.
- In daycare centers and schools.
- In health clubs and locker rooms, which always seem to smell musty from mildew.
- Around pool areas which are constantly wet and able to support microbial growth.
- In restaurants to resist microbial contamination from spills.
- In hotel/motel rooms to keep them from smelling stale or musty when not in use and the air conditioner is off.

As one can see, antimicrobial treatments fill a real need with the consuming public. Consumers are willing to pay for solutions to the problems caused by microbial growth and their reasons range from strictly emotive to strictly economic.

The modern professional cleaner has at his command a new tool with which to do an even better job than he did before, and it's a tool that has excellent profit-making potential. Now the professional cleaner has the ability not only to render his customer's carpets "dirt" clean, but he is able to render them microbiologically clean as well. His customers will be even more satisfied when he leaves their carpet cleaner than clean!

Our second article in this series on antimicrobial agents will be published next month. It will focus on the key differences among the various antimicrobials used in the marketplace today. Topics addressed will include a description of how the various compounds work, their range of effectiveness and their toxicity.

About the authors: Michael G. Hales, Martin E. Sorkin and W.C. White of Dow Corning combine years of experience in marketing and technical development for their antimicrobial treatments. They have published numerous papers in research journals.