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## It Cleans as It Eats

**By Mike Sawchuk** — posted 07/27/2011

Distributors and facility service providers frequenting the ISSA/INTERCLEAN® North America trade shows the past five to 10 years likely have witnessed that the number of chemical manufacturers marketing environmentally preferable cleaning products has grown from a few to just about everybody, even if manufacturers view the green products as “add-ons” to their product line. Following a similar path, we are seeing more manufacturers introducing bio-based—and specifically bio-enzymatic—cleaning products.

While the numbers are still small and there is not the same rush to introduce bio-enzymatic products as there was with green cleaning products, each year we see more of them being introduced by more manufacturers. The reasons are many, but the bottom line is this: Many are now as effective and sometimes more effective than conventional and green chemicals used for the same purposes. Many are also proven green, having been green certified by respected certification bodies. However, the fact that bio-enzymatic products are making a big splash at this time does not mean that they are new. To the contrary, they have been around for about a century.

In 1913, German chemical manufacturers Rohm and Hass experimented and realized enzymes could be used to break down fats and proteins and to clean clothing and fabrics. Because they assumed most of the soils on fabrics and clothing were composed of fats and proteins, they introduced and patented what was the first enzymatic cleaning product. According to the patent, using their enzymatic product, “it appeared that fabrics could be cleaned in a shorter time, with less exertion, and at a temperature far below the boiling point” than without the enzymes.

Their product was sold in Europe for 50 years, and few advances in enzymatic cleaning technology were noticed until after World War II. However, after the war a number of chemical manufacturers, especially detergent manufacturers focusing on the consumer, invested considerable funds on researching and advancing bio-enzymatic technologies. The professional cleaning industry has followed suit, especially in the past decade.

### What They Are...What They Do

Bio-enzymatic cleaners contain specific quantities and qualities of bacteria along with enzymes, which break down complex molecules into smaller pieces. They also contain microbial nutrients, and with all components working together, they essentially eat and digest chemical and organic waste from scores of surfaces such as tile, grout, countertops, carpets, and fabrics. This process is often referred to as “bacterial digestion.”

One of the many features that cleaning professionals appreciate about bio-enzymatic cleaning products is that they continue working as much as 80 hours after they have been applied to surfaces. This is especially effective when cleaning heavily soiled tile and grout areas. The grout can become cleaner even two or three days after the



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application.

Another bonus is odor relief, an ongoing issue for cleaning professionals. Most odors are the result of bacteria, often hidden deep in grout and similar surface areas. When bio-enzymatic cleaners are applied to these areas, the bacteria become food for the cleaner. In some cases, odors are eliminated in as little as days.

### **Safety and Precautions**

Once end customers understand what bio-enzymatic cleaners are, it is not uncommon for them to ask if the products are safe to use. As with all cleaning chemicals, green or conventional, they must be used properly. But for the most part, bio-enzymatic cleaners are as safe to use if not safer than conventional cleaning chemicals. And those that are green certified have been designed to meet even higher safety standards and criteria, helping to protect the health of the user, building occupants, and the environment.\*

Still, there are some precautions distributors should make sure cleaning workers are aware of. Just as there are precautions about mixing or using different conventional cleaning chemicals at the same time, so there are with bio-enzymatic cleaners.

For instance, these products should never be used in conjunction with bleach or chemical disinfectants. Concerns are not so much about safety but about performance and effectiveness, of both the disinfectant and the bio-enzymatic product. Bleach and disinfectants can reduce or eliminate the effectiveness of bio-enzymatic cleaners as well as the microbial efficacy of the bleach or disinfectant.

### **The Future of Bio-Enzymatic Cleaners**

In one way, the future of these products has already been discussed. We can expect to see more and more bio-enzymatic cleaning products. The big question is how many conventional or green-certified cleaning products they will replace.

Complete replacement is not expected. But for certain cleaning challenges, such as deep cleaning and odor elimination, they may be the best option available. Overall, as they become more cost effective and as more bio-enzymatic cleaning products are green certified, we can expect them to play a bigger role in green cleaning, offering the end customer more choices and more environmentally preferable options.

\* Green certification ensures that the other ingredients, other than the bacteria and enzymes, such as surfactants, dyes, fragrances, etc., meet green criteria.



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