

Differences in Hydrogen Peroxide Cleaners

By Virginia Petru

In 1998, no one had even heard of hydrogen peroxide cleaning technology. Well, almost no one.

Patrick Stewart, the pioneer in hydrogen peroxide cleaning technology, was about to unveil the industry's first hydrogen peroxide-based multi-purpose cleaner. That year, at the Las Vegas ISSA Show, the rest of the world was introduced to this remarkable new technology in the form of H₂Orange₂[®] Concentrate 117, and its promise for a better, healthier way to clean.

Although many were skeptical at the beginning, Stewart and his fledgling company discovered the power of demonstration. Even the most resistant maintenance professional would change his point of view when seeing the new H₂Orange₂ Multi-Purpose Cleaner in action.

Proliferation of Hydrogen Peroxide Cleaners

At first, the industry was cautious about this new technology. It didn't seem possible that one cleaner could perform so well on so many surfaces. Over the next several years, the industry watched as H₂Orange₂ proved this truly was a better, healthier way to clean.

When it was clear that hydrogen peroxide wouldn't go away, other chemical manufacturers quickly began to formulate their own hydrogen peroxide-based cleaners.

H₂Orange₂ became the first hydrogen peroxide-based cleaner to have EPA registration as a Sanitizer-Virucide-HBV. It also obtained NSF registration as a cleaner and sanitizer. And that's not all.



Hydrogen peroxide-based H₂Orange₂ 117 Multi-Purpose Cleaner is EPA registered as a Sanitizer-Virucide-HBV. It kills 99.99% of common bacteria and 99.9% of specified viruses, including HBV.

Today, over 44 companies manufacture hydrogen peroxide-based products. The original H₂Orange₂ remains the industry favorite, and is patented so it can never be copied.

Distributor Dilemma

With so many hydrogen peroxide products to choose from, how does a distributor know which line to carry? What are the differences between these hydrogen peroxide products? Since your customers look to you to solve their cleaning challenges, you need to be educated about this chemical revolution.

Cold Water Dilution

The state of New York is considering a proposal that will mandate the use of cold water for cleaning. Many environmentalists consider the use of cold water more environmentally preferred, as there is no energy expended to heat the water.

Does the hydrogen peroxide concentrate you are considering dilute as well in cold water as in hot? Can you assure your customers that the product will work in dilutions made with any reasonable temperature? H₂Orange₂ was specifically formulated to perform equally as well in either cold or warm water.

Two vs. Four Dilutions

One of the benefits of hydrogen peroxide technology is the simplicity of its use and the ability to un-clutter the janitor's closet. Early on, users of H₂Orange₂ reported tremendous savings by cutting back on the number of cleaners they used. Some cut back from as many as 10 to 12 different products to just one.

That means simplicity on the cart, as well. Some hydrogen peroxide products demand four different dilutions to address multiple cleaning needs. H₂Orange₂ has just two dilutions. The light-duty dilution is used for most cleaning tasks including glass, mirrors, floors and general light-duty wipe-down. The heavy-duty dilution tackles the tougher challenges including tile and grout, urinals, kitchen grease and carpet stains. If the user accidentally applies the heavy-duty dilution instead of the light-duty, there is no harm to the surface.

Different pH Levels

The pH value of a chemical indicates whether it is an acid, an alkaline, or neutral. The pH scale ranges from 0 to 14, with lower numbers representing chemicals that are more acidic, and higher numbers indicating more alkalinity. Tap water is generally neutral, with a pH between 6.5 and 8.5.



Not all hydrogen peroxide cleaners can be used on marble. The industry's original hydrogen peroxide cleaner, H₂Orange₂ has a neutral pH. It safely goes from marble to glass, aluminum to urinals.

Look carefully at the diluted pH values of hydrogen peroxide cleaners. Those that have a pH closest to 7 will be the safest, and you will not need to worry about damage to end-users or the surfaces they clean.

H₂Orange₂ has a neutral pH when diluted for heavy-duty cleaning, which makes it ideal for cleaning all surfaces including marble, granite, rubber, and aluminum. It's as close to water as you can get!

“Activated” Hydrogen Peroxide Products

Some hydrogen peroxide cleaners have very low pH values, such as 1.4, which indicates a very acidic formulation. Sometimes these products are referred to as “activated” hydrogen peroxide products. These formulations are limited in their ability to clean, and can leave a high level of residue. Additionally, this level of acidity can also irritate skin, eyes, and lungs. These would not be products to use on sensitive surfaces such as marble, whiteboard, desktops, or aluminum.

Alkaline Cleaners

Others run as high as 11.58 pH, indicating a very alkaline product. These extremes can damage surfaces, particularly those requiring neutral pH levels. A high alkaline product is caustic, and can burn skin, eyes and lungs.

99.99% Bacterial Kill, 99.9% Virus Kill

Any product that claims to kill bacteria and viruses must be registered with the EPA. H₂Orange₂ is the only hydrogen peroxide-based cleaner that is registered as a Sanitizer-Virucide-HBV.

As a sanitizer, H₂Orange₂ kills 99.99% of common bacteria in

five minutes including staph, salmonella, strep and E-coli, klebsiella pneumoniae, and pseudomonas aeruginosa. As a virucide, H₂Orange₂ kills 99.9% of viruses listed on the label in five minutes, including herpes 2, influenza A2/Japan and HIV-1. H₂Orange₂ will also kill 99.9% of the hepatitis B virus.

For general janitorial applications on non-disease transfer points, a 99.99% bacterial kill rate is sufficient to result in a clean, safe surface. The difference between a sanitizer and a disinfectant is that a disinfectant kills nearly 100% rather than 99.99% of the bacteria listed on the label.

The 99.9% viral kill rate is the same for viruses listed on the label for all EPA registered virucides, regardless of the product's status as either a disinfectant or a sanitizer.

Penetrating Performance Factors

In the reality of professional cleaning, the true test comes down to performance ... whether it's in the restroom, on the carpet or on glass surfaces. H₂Orange₂ is a patented formulation of hydrogen peroxide, orange oil and readily biodegradable surfactants. It is a formulation that cannot be duplicated, although many have tried to develop similar products.

The unique combination of hydrogen peroxide with orange oil and surfactants enables H₂Orange₂ to deeply penetrate surfaces and soil so when the hydrogen peroxide “power bursts” it truly maximizes the cleaning power of the surfactant.

Some hydrogen peroxide formulations do not contain ingredients that enable the hydrogen peroxide and surfactant to penetrate soil and stains. These products will not clean as effectively, and may contain high concentrations of detergents in order to compensate for the absence of a penetrating factor. These products are more likely to leave residue and streak.

Other products may have ingredients that help the hydrogen peroxide penetrate, but they are lacking in performance for one reason or another. The end-user finds that they simply don't work as well as the original H₂Orange₂.

When evaluating hydrogen peroxide products, it is crucial to keep in mind that there are differences between formulations. Carefully consider the dilution factors, the registrations, the sanitizing abilities, the pH factors, residue issues and, most importantly, the performance.

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