Company Response to *Consumer Reports* evaluation of pureWash Eco-Friendly Laundry System

Consumer Reports (CR), founded in 1936, has long been the consumer’s safety advocate, taking on some of the most critical safety aspects of consumer products. The review of the pureWash was published in March 14, 2014, and focused on three areas:

1. **pureWash cleaning ability** compared with regular detergent
2. **Money savings** achieved by using pureWash
3. **Safety** of pureWash considering the use of Ozone for as the primary oxidant

According to CR the product is “too good to be true”. Certainly pureWash is no panacea. Unfortunately, CR failed to understand the way the pureWash is to be used regarding stain removal. CR also failed to evaluate the biggest benefits of using pureWash over standard chemical-based laundry methods.

**Cleaning Ability**

According to CR, pureWash “doesn’t really work better than most detergents”, and CR is correct. The fact that pureWash even competes with detergent is a great feat! The reason pureWash doesn’t work better than chemicals are because most detergents include optical brightener’s. According to Ullmann’s Encyclopedia of Industrial Chemistry 2002, “A white surface treated with an optical brightener can emit more visible light than that which shines on it, making it appear brighter. The blue light emitted by the brightener compensates for the diminishing blue of the treated material and changes the hue away from yellow or brown and toward white.” Most laundry detergents today contain these optical brighteners to “artificially” make the clothes look cleaner, and because this test for cleanliness as conducted by CR uses “a color-sensitive instrument called a colorimeter to assess how well each device cleaned our soiled fabric swatches”, optical brighteners will make the clothes appear cleaner.

To deal with stains and soil, pureWash recommends the use of spot treatment products. This doesn’t mean a user needs to purchase harsh chemicals to aid in stain removal. There are natural enzyme-based cleaners including *EnzyMagic 91* and *EnzyMagic 201* which can be used full strength. For white items, pureWash recommends occasional use of bleach or other bleaching agents (including natural borax), typically every 3 or 4 washes. For color items color-safe bleach can be used.

What CR failed to include in the report was the benefit pureWash provides for the majority of users. Most clothing being washed by consumers is not stained. We wash to remove light soils, body odor and to freshen our clothes. pureWash gives clothing that “hung on the clothes line” fresh smell through the use of natural oxidation. No need for artificial scents or cover-up chemicals to make a user’s clothes smell fresh and clean.
Money Savings

CR did focus on the savings from reduced detergent use. But sadly, it failed to recognize the many other savings pureWash delivers to a family:

1. *Energy savings from reduced hot water use:* pureWash washes clothes in cold water. Considering the amount of heated water used by the average washer, the savings can be significant.
2. *Reduced detergent expense:* Yes, reduced or no detergent is a big savings and the amount will vary depending upon what type of laundry detergent is used and where you purchase your detergent. For instance, chemically-sensitive individuals purchase detergent costing as much as 10x the price of generic laundry detergent.
3. *Potential for reduced water use:* Because there is no detergent to require a rinse cycle, many users run just the wash and spin cycles, cutting water consumption in half.
4. *Energy savings from reduced drying times:* By reducing or eliminating laundry detergent you are also reducing or eliminating the use of wetting agents which cause the clothing to act like a water magnet, which leads to more water trapped in clothing after the spin cycle. Typical water weight can be reduced by 30%, thereby reducing drying times by 40%. See section below on “How pureWash Cuts Drying Times”.
5. *Increased clothing life:* Detergent increases pH which causes fibers to swell unnaturally leading to cracks in the fibers themselves. These cracked fibers shatter and are carried away by your dryer. Your expensive linens are being reduced to fuzz every time you wash them.
6. *Stop setting stains:* Traditional washing using warm/hot water can set stains, making them impossible to get out. With pureWash and washing in cold water if the stain remains try again. Our testing has shown that using a different pre-treatment can make the difference on the second time being washed.
7. *Extend the life of your washer:* Detergent, especially powdered detergents, can build up in the tub of the washer and cause bearing seal failures, a repair which often costs more than a new washer. pureWash oxidation actually cleans the detergent buildup from the washer.

While the CR article is correct in stating that there is a savings associated with using little or no detergent, it is very important to understand savings come from more than just a reduction in chemical detergent use! CR could have been much more thorough in pointing out these other savings, but chose not to for some reason.

Safety

We very much appreciate CR’s recent evaluation which not only validated the safety of pureWash with regards to what ozone might be in the air, but also supported claims pureWash has made for quite some time. CR stated “we checked the ambient air in our test lab while the device was in use and measured ozone levels well below the maximum limit set by the U.S. Food and Drug Administration.” For more details on ozone safety, see paragraph at the end of this article.
In addition to the three areas evaluated by CR: Cleaning Ability, Money Savings and Safety, there are other benefits not mentioned in the report:

**Health Benefits**

The health benefits of pureWash come from two areas:

1. Reduced chemical exposure: With approximately 10% of the US population suffering from Multiple Chemical Sensitivities (MCS), the use of standard detergent isn’t an option. pureWash removes irritating chemicals from clothing which can contribute to chemical sensitivity.

2. Reduced bacteria contamination: pureWash uses ‘aqueous ozone’ which has been proven to significantly reduce microbials including mold, bacteria and viruses. The EPA and FDA have acknowledged that ozone is capable of reducing pathogenic bacterial levels on garments by 99.9992%. Biological-contaminated clothing has proven to prolong the healing of skin sores and has been linked to dermatological ailments.

**How pureWash Cuts Drying Times**

pureWash can help your washer get more water out of your clothes by causing the fabric to retain less water. A dryer cycle that is typically 45-55 minutes can be reduced to 27-33 minutes simply by reducing the water retention by 1/3. Less water in the clothing going to the dryers means it takes less time to dry them. This adds up to a huge savings in energy. Think of the savings from using 121 less hours of drying time translating into reduced energy consumption - 363,000 watts of electricity or 2.4 million less BTU’s of gas/propane per year! For more details on reduced drying times, see paragraph at the end of this article.

**Summary**

No product is “too good to be true”. If pureWash were capable of removing every stain as well as saving a typical consumer $300 or more per year, plus extending the life of clothing and preventing washer repairs, there wouldn’t be another box of laundry detergent purchased ever again. pureWash can’t remove every stain any more than the leading laundry detergent can. What pureWash can do is nothing short of amazing considering the money savings, health benefits, and the benefits to our environment by removing chemicals from our waterways. Using little or no detergent is a paradigm shift for most people and we understand that. All we ask is that you give it a try and find out why over 40,000 people will never go back to washing clothes the old-fashioned way again.
Detergent-less laundry systems lack cleaning power

Models from pureWash and Wash It left fabrics soiled
Published: March 14, 2014 08:00 AM

Find Ratings

Laundry detergents  Rating: 2/5
Washing machines  Rating: 3/5

pureWash laundry system

"Does detergent-free laundry sound too good to be true?" So asks Pure Products International, maker of the pureWash Eco Friendly Laundry System. Based on Consumer Reports’ testing of this product, as well as the similarly marketed Wash It laundry system, the answer for now is, “Yes, it’s too good be to true.”

The $300 pureWash and $400 Wash It systems are about the size of a large toaster oven. They mount to the wall behind and above any top-load or front-load washing machine. An inlet and outlet on either side of the devices connect them to your home’s cold water line and washing machine. Both devices also come with a power adapter that plugs into the nearest electrical outlet.

We had no trouble installing the pureWash and Wash It systems. But that’s where our positive experience ended. Following our usual laundry detergent test procedure, we loaded the two washers with test fabric swatches soiled with mud, blood, grass, chocolate, and the like. Instead of laundry detergent, pureWash and Wash It systems are supposed to get clothes clean by injecting ozone into the cold wash water. “Ozone is a powerful oxidant; it disinfects, deodorizes and sanitizes,” claims the Wash It web site. “Ozone kills micro-organisms found in soiled laundry (kills bacteria 3,000 times faster than bleach),” says pureWash.

Wash It laundry system

Test results
While we didn’t bust out the microscope, we did use a color-sensitive instrument called a colorimeter to assess how well each device cleaned our soiled fabric swatches. The results were not what you’d call sparkling. Indeed, both devices were only a bit better than plain water at tackling soils. Since their user manuals said that you could also add a small amount of detergent, we ran a second test using a dose of industry-standard laundry detergent. Again, we saw no ozone-induced boost in cleaning performance. Given that ground-level ozone is an irritant that can worsen asthma and compromise the body’s ability to fight respiratory infections, we checked the ambient air in our test lab while the devices were in use and measured ozone levels well below the maximum limit set by the U.S. Food and Drug Administration.
Still, the apparent safety of the pureWash and Wash It systems doesn’t change the fact that they don’t really work better than most detergents. And that of course diminishes the money savings—which aren’t that great to begin with. For example, the $300 pureWash is supposed to last 10 years. Depending on how often you do the laundry, it would take anywhere from 8 to 11 years to use about $300 of one of our Best Buy detergents—and of course you’d have really clean clothes in the process.

**Bottom line:** We’re all for the idea of a detergent-less laundry system, which would save money and time for consumers and have less impact on the environment. Unfortunately, neither of these systems lives up to the potential.

—Daniel DiClerico
OZONE SAFETY

Ozone is a powerful and very useful oxidizer, but care must be exercised regarding ozone levels in the air. According to the FDA & EPA, .05 parts per million (ppm) of ozone in the air is considered safe and is equivalent to levels found in natural clean outdoor air around the world. OSHA has established safe short term exposure levels for those working in industries where employees are exposed to higher levels of airborne ozone. According to OSHA guidelines, the 8 hour exposure limit is .10 ppm and the short term maximum safe limit is .30 ppm for 15 minutes. For your information, ozone at .30 ppm is very pungent and not pleasant to be around but testing by OSHA has shown the level for 15 minutes is safe.

pureWash dissolves ozone into the water but as the water enters the tub and as the wash cycle runs some off-gassing of ozone occurs. The developer of pureWash has performed extensive ozone testing in various laundry rooms even with running back-to-back loads over an 8 hour period. Ozone levels never reached .1 ppm and the majority of tests recorded ozone levels below .05 ppm.

REDUCED DRYING TIME

Water hardness is most often caused by calcium and magnesium being dissolved in the water. These dissolved minerals along with chlorine and other chemicals present in tap water and chemicals used on clothes to increase their sheen and to repel soil all cause fabrics to be something called “Hydrophobic”. This means they repel water. That's not a good thing when you need to wash them using water. Chemical companies have developed detergents using powerful wetting agents that work well in water having these natural disadvantages. These chemicals cause fabric to act like a water magnet. Although these chemicals have worked well to improve the cleaning of clothes, they cause more water to be retained in the clothing after the washing machines spin cycle. More water in your clothes means more time and energy required to dry them.

Using pureWash eliminates the need for wetting agents. pureWash oxidizers act like a water softener because they break the surface tension on water. This neutralizes the tendency for water to bead instead of penetrating cloth. pureWash oxidizes or hydrolyzes calcium and magnesium, greatly reducing the accumulation of minerals in linen (which causes clothing to look dull and dingy over time). Ozone also neutralizes chlorine and its water-hardening effects. Softer water and no wetting agents mean better rinsing and more efficient extraction. More efficient extraction means less water remaining in the clothing. All together this means measurably shorter drying times and big energy savings when you switch to pureWash.

It takes 2,000 Btu’s to evaporate one pound of water. Most clothes out of typical residential washer using traditional detergents will retain at least 80% or more water weight. That means 50 pounds of clothing will have at least 40 pounds of water in them. That means your dryer will need to consume a minimum of 80,000 Btu’s of energy to get them dry. With pureWash you can get out a lot more water in the spin cycle. Your remaining water weight would be down to around 30% which would mean that you would need only 30,000 Btu’s or a little more than 1/3 of the energy required in the typical scenario to get your linens dry.

A dryer cycle that is typically 45-55 minutes can be reduced to 27-33 minutes simply by reducing the water retention by 1/3.