

# FRESH AIR SURROUND



NOT YOUR AVERAGE AIR PURIFIER



## SPACE CERTIFIED TECHNOLOGY



ActivePure® Technology is based on a variation of the technology originally developed for use in the International Space Station and is recognized as the exclusive Certified Space Technology by the Space Foundation in its category.



Model	FreshAir Surround
Electrical	<ul style="list-style-type: none"> <li>• 100 ~ 240 VAC 50/60 Hz External Power Supply</li> <li>• 50 watts maximum power consumption</li> <li>• Negative ion generation</li> </ul>
Size	<ul style="list-style-type: none"> <li>• Dimensions: 12" high x 9" wide x 12" deep</li> <li>• Weight: 16 pounds</li> </ul>
Purification Plate Output (High Mode)	7 watts
Coverage	Covers a range of 250 ft <sup>2</sup>   (23 m <sup>2</sup> ) to 3000 ft <sup>2</sup> (279 m <sup>2</sup> )* <small>* Depends on variables such as severity and frequency of pollution, humidity, and temperature.</small>
Warranty	3 Years

## HOW FRESHAIR SURROUND HELPS YOU BREATHE EASIER

Have you ever thought about what's really polluting your home environment? Little ones bring home all those nasty things they touch and spread them everywhere. Garbage cans are funky. The smell of leftover spicy food can linger for days. And who knows what surprises our pets bring in with them.

Now imagine eliminating that pollution at the source. We're not talking about spraying a cloud of flower-fragranced chemicals. Our solution is as easy as pushing a button to keep things cleaner and safer to touch, not to mention smelling fresher. The FreshAir Surround by Vollara is a revolutionary air purifier that does so much more than clean the air. Using the same science as Mother Nature, FreshAir Surround destroys odors, eliminates smoke and reduces contaminants ordinary cleaning can leave behind.

So how does the FreshAir Surround clean and freshen the air? In short, it is technology based on how nature keeps things safe and clean outdoors. The natural processes found in thunderstorms, sunlight, and lightening are recreated indoors. Negatively charged ions remove pollutants from the air. ActivePure Technology duplicates nature to safely reduce contaminants on surfaces.

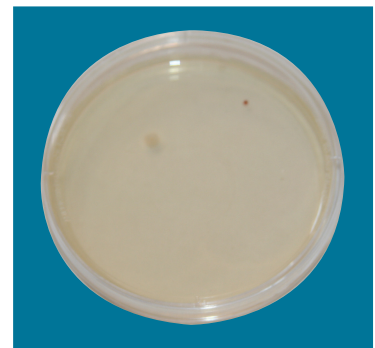
## BENEFITS OF FRESHAIR SURROUND

- Reduces airborne contaminants for a healthier environment
- Freshens air and removes odors in otherwise stale-prone environments
- Reduces dirt and dust from the air to make cleaning easier
- Optional Ozone Free bulb allows for operation without creating ozone

FreshAir Surround by Vollara is like 24/7 healthy home insurance. It is the core of Vollara's total protection package for whole-home environmental conditioning. FreshAir is always working - sending out an active army of safe and natural ions as well as pollutant-controlling, odor reducing and oxygen-rich 'scrubbers' to make your home safer and healthier.



Before FreshAir



After 8 hours with FreshAir technology

Before and after laboratory tests showing reductions of airborne contaminants with the FreshAir Surround.

*Based on preliminary test results. Field results may vary. Results do not constitute scientific substantiation.*

This product does not meet California or Canada requirements and cannot be shipped to California or Canada.

# FreshAir Surround



Did you know that each of us consumes more air every day than anything else in the world? It's true. We each breathe in over 3,000 gallons of air every day. And don't we all want to breathe pure, fresh air? Unfortunately the air outside can be bad, and indoors where we spend most of our time, the air can be much worse. In fact according to the Environmental Protection Agency (EPA), indoor air levels of many pollutants may be 2-5 times, and sometimes, more than 100 times higher than outdoor levels. Without some method of control, airborne contaminants can be breathed in or eventually settle on exposed surfaces. But whether you suffer from allergies or not, there is something you can do about it. FreshAir Surround combines five nature-based processes into one unique, proven, active technology system that helps clean the air you breathe and the surfaces you touch.



## About Indoor Air

One alarmingly simple fact to consider: if you don't use an air purifier, you are the air purifier. The EPA says the average adult breathes over 3,000 gallons of air each day and spends a significant amount of time, up to 90%, indoors. The Asthma and Allergy Foundation of America (AAFA) reports that one in four Americans currently suffer from asthma and allergies. And while the human respiratory system has several built-in defenses to prevent substances from entering the lungs, utilizing air purification to remove or reduce the amount of airborne pollution in the breathing space can potentially ease the burden of contamination in the body and help maintain overall wellness. Those common household airborne pollutants can potentially include:

- Dust which is generally comprised of dead skin, dust mites and dust mite feces, insect parts, and more.
- Smoke emanating from tobacco, wood-burning fireplaces, fuel-burning heaters, and cooking.
- Chemicals from spray cleaners, perfumed deodorizers, carpets, and other building materials.
- Various microscopic bacteria and viruses.

All of these will continue to be of concern as modern building methods and the energy efficiency improvements of retrofitting existing structures continue to seal pollutants within indoor spaces. Such buildings tend to have decreased ventilation rates, higher concentrations of indoor-emitted pollutants, and more occupants reporting health problems.

## Dust Mites

It has been reported that up to 80% of U.S. homes have large dust mite infestations, which may not be surprising considering as many as 40,000 dust mites can live in a single ounce of dust. These pests are second only to pollen in causing allergic reactions, mostly from airborne dust mite feces, ranging from itchy noses and eyes to severe asthma attacks. Along with keeping a low relative humidity between 30 – 50%, one of the most obvious methods of controlling dust mites may be to just reduce the amount of dust. An air purifier that works to continuously remove particulate from the air, combined with a thorough cleaning regimen that includes vacuuming can be an effective, simple strategy to minimize the aggravations of airborne dust.

## Exposed Surfaces

Contamination on surfaces isn't limited to visible dust - there are numerous other types of contaminants that generally get spread where people live. Whether from sneezing and coughing or just everyday handling, door knobs, counter tops, and almost any exposed surface can become a potential staging ground. It's also interesting to note that, by legal definition, disinfectants must be capable of reducing the level of pathogenic bacteria by 99.999% during a time frame of less than 10 minutes. Yet, as widely accepted as chemical disinfectants are, they may have little or no effect once removed from a surface due to lack of contact exposure. Because of this, some type of surface contaminant reduction between cleanings or disinfection may be desirable and beneficial as part of a regular regimen.

# FreshAir Surround

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## The Advantage of ActivePure®

With an end result similar to traditional filtration, ActivePure's active technology will clear the air of dust and floating particles, but unlike filters, it works out in the indoor environment, using air from the unit to carry "scrubber" ions and oxidizers through the air and to surfaces where they may be needed most. ActivePure® makes extensive use of five nature-based processes:

- **Sunlight** - for germicidal UV light
- **Rain and thunderstorms** - to generate ionization
- **Lightning** - to produce activated oxygen
- **Photocatalysis** - for hydro peroxides and oxide ions
- **Wind** - to distribute these properties into the environment

## Utilizing Lights and Metals

To create oxide ions and powerful oxidizers, the ActivePure® cell located inside the FreshAir Surround utilizes an advanced form of photocatalytic process known as radiant catalytic ionization. This proprietary cell technology incorporates short wave UVC germicidal light as a catalyst to react with a formulated titanium dioxide and a proprietary blend of transition metals coating a target honeycomb matrix. The strong germicidal capabilities of the cell ensure any contaminants passing through the FreshAir Surround are inactivated and rendered harmless.

## Ionization Reduces Airborne Particulate

FreshAir Surround includes a dual polarity ionization system designed to bring about the agglomeration of airborne dust particles, odors, smoke, and contaminants to effectively cause them to cluster together and drop from the air. This airborne particulate can contain both pollen and dust along with its various constituents including dust mites, dust mite feces, and insect parts. Tobacco, cooking, and other types of smoke are also removed from the air by ionization through a similar process.

## The Power of Activated Oxygen

To eliminate difficult odors as well as odor-causing bacteria at the source, FreshAir Surround offers an adjustable, optional purification function to produce activated oxygen, otherwise known as O<sub>3</sub> or ozone. A naturally occurring oxidizer with a very short half-life of approximately 5 minutes, activated oxygen works to break down all

forms of odors and many types of air pollutants before breaking down itself to basic oxygen, allowing it to be used in unoccupied spaces for odor remediation and dust mite control as well as for everyday low level odor and contaminant control purposes as desired.

## Scientifically Studied

Testing on behalf of Vollara by Dr. James Marsden, and others at Kansas State University was conducted to determine the potential use of ActivePure® (RCI) Technology for the inactivation of Staph (Staphylococcus aureus), MRSA (Antibiotic Resistant Staph), E. coli (Escherichia coli), Bacillus spp., Streptococcus spp., Pseudomonas aeruginosa, Listeria monocytogenes, Candida albicans, and black mold on stainless steel surfaces at diverse contact times in a controlled airflow cabinet. Further testing was conducted for Vollara at the University of Cincinnati Center for Health-Related Aerosol Studies to investigate the novel air purification technique combining aerosol/bioaerosol control mechanisms of unipolar ion emission and photocatalytic oxidation promoted by the ActivePure® (RCI) technique. These tests validated the effectiveness of the ActivePure® Technology in controlling contaminants.

## An Earth-Friendly Value

Active technology air purifiers like FreshAir Surround with ActivePure® offer opportunities to contribute to an earth-friendly lifestyle by continuously working to reduce biological contaminants on surfaces which may lessen the amount and impact of chemicals needed for cleaning and deodorizing, potentially saving money and resulting in fewer empty containers going into the trash. By evaluating based on total area covered and suggested retail pricing, Vollara has calculated that FreshAir Surround costs up to 83% LESS per square foot of coverage when compared to popular brands of simple HEPA filters.

## Space Certified Technology

ActivePure® Technology is based on a variation of the technology originally developed for use in the International Space Station and is recognized as the exclusive Certified Space Technology by the Space Foundation in its category.

## Unique Features of FreshAir Surround

- Uses super oxide ions and hydro peroxides created by ActivePure® Technology to remove contaminants.
- Alternating positive and negative charged ions remove microscopic particles from the air to reduce harmful airborne pollutants.
- Features high intensity UVC light to make use of the same oxidation and ionizing properties as naturally occurring sunlight.
- Certified Space Technology™ ([www.spacefoundation.org](http://www.spacefoundation.org))
- Normal Mode uses exclusive ActivePure® (RCI) Technology to produce safe, low-level, oxidizers and super oxide ions for basic, everyday applications.
- High Mode adds the power of activated oxygen for faster coverage and increased elimination of smoke, odors, and surface contaminants.
- 8-hour Away Mode increases the maximum output of activated oxygen for increased effectiveness in unoccupied areas.
- Includes a remote control for easy operation.
- Optional Ozone Free ActivePure® Cell allows for operation without creating ozone in normal mode.
- Optional prefilter available for harsh or dust-prone environments.
- Improves the quality of air in an environment up to 3,000 sq. feet.
- Alerts for normal maintenance or when service is required.

\*These results have not been evaluated by the FDA. This product is not a medical device intended to diagnose, treat, cure, or prevent any disease.

\*\*Published scientific studies conducted on behalf of Vollara by Dr. James Marsden at Kansas State University demonstrated that Vollara's ActivePure® Technology substantially reduces contaminants on surfaces. No claim with respect to contaminants is made based on these results. Field results may vary based on environmental conditions.

SECOND EDITION

# PROOFBOOK

Essential Support and Validation for  
Vollara's Science and Technology



DISTRIBUTOR EDUCATIONAL MATERIAL

**PITTSBURGH PIRATES**

PNC Park at North Shore  
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Pittsburgh, PA 15212

[www.pirates.com](http://www.pirates.com)

2/17/11

Joseph P. Urso, Chairman  
Vollara  
5420 LBJ Freeway  
Suite 1010  
Dallas, TX 75240

Dear Joe,

It has been a great pleasure getting to know you, Dr. Troy Sanford, Julia Chiappetta, Ron Chaves and the rest of the Vollara family. I very much enjoyed touring the Vollara International Headquarters in Dallas, TX (in November 2010). Witnessing firsthand the company's contagious passion, shared vision and relentless pursuit to be the best in the business was refreshing and impressive.

As the Strength and Conditioning Coach for the Pittsburgh Pirates Baseball Club I am very selective of the supplement and/or wellness products that we bring to the clubhouse for player use. The Vollara line of products that are certified for sport through the NSF are of highest quality. The Reflex and Refuel supplements definitely have a place in the daily routine of a professional athlete seeking optimal performance.

What really gets my heart pumping are the Living Water and Fresh Air units. Not everyone is into the use of nutritional supplements and that's fine. But everyone must drink water and breathe air. The Living Water empowers us to raise alkalinity for healthier water. The Fresh Air Surround cleans surfaces and helps us breath cleaner air that is free of bacteria, mold and other contaminates.

We feel very good about equipping our ball players with Vollara's best in class products. Our job is put them in the best position to use their talents, night after night without missing a beat. Our athletes need to feel great, perform at higher levels, recover faster and compete every night. The smallest edge can lead to a win and ultimately a championship. That's what we are playing for here in Pittsburgh and that is why we feel confident using the Vollara products.

Yours in Optimal Health and Wellness,

Frank Velasquez Jr.  
Strength and Conditioning Coach  
Pittsburgh Pirates Baseball Club





[nationals.com](http://nationals.com)

Washington Nationals Baseball Club  
Nationals Park  
1500 South Capitol Street SE  
Washington DC 20003-1507



September 25, 2010

Julia Chiappetta  
Vollara  
5420 LBJ Freeway  
Suite 1010  
Dallas, TX 75240

Subject: Vollara Products

Dear Julia,

As Head Athletic Trainer for the Washington Nationals I am inundated daily with companies vying for attention and access to our athletes. Mike McGowan, Asst Athletic Trainer and I routinely research these products and discuss them with our team physicians. We scrutinize these offers and products closely and usually find them to be just another company trying to get attention in our market.

I wanted to thank you for your professional approach in providing us information regarding your products and your patience in allowing us to evaluate these products as part of our training regimen.

We currently offer NSF approved Vollara products, Re:Flex and Re:Fuel to our athletes. We are using the Vollara Living Water unit as part of our hydration strategy for our athletes and also utilize the Fresh Air Surround in our athletic training room to provide a clean, fresh atmosphere.

I will recommend your company to my peers and thank you for your accessibility and informational approach regarding your products.

Sincerely,

Lee Kuntz, MA, ATC  
Head Athletic Trainer  
Washington Nationals

# CINCINNATI REDS™

Great American Ball Park, 100 Main Street, Cincinnati, OH 45202-4109, Phone: 513.765.7000, Fax 513.765.7342, [www.reds.com](http://www.reds.com)

Joseph P. Urso  
Chairman  
Vollara  
5420 LBJ Freeway  
Suite 1010  
Dallas, TX 75240

Dear Joe:

I wanted to take the time to reach out to you and say thanks for developing such quality product and assembling a quality staff. I have been a Strength Coach for a while now and have met with many companies' representatives. Your staff by far goes above and beyond in the Customers service area. I wish I had ten Ron Chaves on my staff. Not only is Ron a great educator of your products, he is a great listener and make sure he adapts to each facility on how to best implement your products.

Developing high quality products that clean our AIR and Water are essential not only to performance, but to all of us personally. Its shows that Vollara cares about people. It's important when building relationships with our athletes that they know we care about them personally and professionally. Providing air free of toxins and pollutants along with the Living Water allows our players to recover from the day to day grind of being a professional baseball player.

Thanks you for making our lives better.

Best Wishes,



Matthew C. Krause  
Major League Strength and Conditioning Coordinator  
Cincinnati Reds

**WORLD SERIES CHAMPIONS:** 1919, 1940, 1975, 1976, 1990 **NATIONAL LEAGUE CHAMPIONS:** 1919, 1939, 1940, 1961, 1970, 1972, 1975, 1976, 1990



**Toronto Blue Jays Baseball Club**

The Bobby Mattick Training Center @ Englebert Complex  
1700 Solon Ave.  
Dunedin, Florida USA 34698

Joseph P Urso, Chairman  
Vollara LLC  
5240 LBJ Freeway  
Suite 1010  
Dallas, TX 75240

Dear Mr Urso,

I am so happy that I had the opportunity to meet Dr. Troy Sanford, Julia Chiappetta, and Ron Chaves, and learn about Vollara products at the 2010 Baseball Winter Meetings.

With over a decade of experience as the Strength and Conditioning Coordinator for the Toronto Blue Jays, I have seen numerous products come and go in the industry—very few have had the potential impact of the water and air purity improvements Vollara offers. I am always looking for an effective long-term solution to the continuing decline in our water source, as well as eliminating the airborne toxins that are present in all of our facilities. Consequently, Vollara's Fresh Air Surround and Living Water units have found a permanent place in our most used and highly populated Bobby Mattick Training Complex in Dunedin, FL.

It's important to note that I would not install any products for athlete use that I would not also use myself. In this case, these products are of particular importance to my family since my two-year-old son Luke was recently diagnosed with Autism Spectrum Disorder. He has many challenges, including a higher susceptibility to pesticides, toxins, and airborne pollutants. I am currently using the Fresh Air Surround and have been transporting Living Water home daily for him to drink. I value these products as another resource in our battle to help Luke overcome the challenges of his disorder and live up to his full potential. There is nothing more important to my wife and me than ensuring we employ all possible means to help him.

I want to personally thank Dr. Troy, Julia, Ron, and all the members of Vollara for their vision and help. I am grateful for the opportunity to implement use of their products for our players, staff, and, especially, my family.

Yours truly

Donovan T. Santas CSCS  
Strength and Conditioning Coordinator  
Toronto Blue Jays Baseball Club





# MEDICALTEAM

## VOLLARA MEDICAL & SCIENTIFIC ADVISORY BOARD

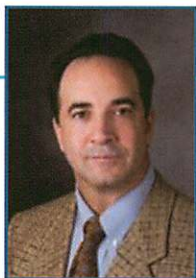
### *Richard G. Urso, M.D.*

Dr. Richard Urso graduated from the University of Connecticut. In medical school, Dr. Urso graduated with honors, was an Alpha Omega Alpha member and ranked number one in his class in both medicine and surgery. He completed his ophthalmology residency at the University of Texas Southwestern in Dallas. Dr. Urso then concluded his fellowship in Oculoplastics and Reconstructive Surgery at the University of Texas Medical Branch in Galveston. He has been on the faculty at the University of Texas Medical School at Houston in the Department of Ophthalmology and Visual Sciences for the past 12 years, teaching medical students and residents. For 6 years, Dr. Urso was the leading ocular oncologist at MD Anderson Cancer Center.

Dr. Urso is board certified by the American Board of Ophthalmology. He is affiliated with the Harris County Medical Society, Texas Medical Association, and Texas Ophthalmic Association. Dr. Urso has a patented drug treatment for delayed corneal wound healing and diabetic foot ulcers. He has also written numerous articles and abstracts relating to a variety of topics in the field of ophthalmology. With respect to his knowledge and talent, Dr. Urso is considered to be one of the country's most prominent ocular trauma surgeons.

His honors include Outstanding Teacher in Ophthalmology from UT Houston Medical School, Memorial Hermann Healthcare Hero Award, Dedication and Service Award from Harris County Fraternal Order of Police #39, and America's Top Ophthalmologist in Oculoplastics, Reconstructive Surgery and Refractive Surgery.

Dr. Urso and his wife, Stacy are heavily involved with the West University Softball Association and Little League. They have five wonderful children, Alessandra, Ellie, Catherine, Joey and Anthony.



### *Martin Schalling, Ph.D.*

Dr. Martin Schalling received his Ph.D in Molecular Neurobiology from the Karolinska Institutet. He received his postdoctoral in Molecular Genetics from Massachusetts Institute of Technology. He is currently a Professor of Medical Genetics (Neurogenetics) at the Karolinska Institutet. He is also head and founder of the Neurogenetics group at the Karolinska Institutet and a visiting professor for the Department of Psychiatry at the University of California, San Diego.

Dr. Schalling is also head and founder of the Neurogenetics group at the Karolinska Institutet and a visiting professor for the Department of Psychiatry at the University of California, San Diego.

Dr. Schalling serves as a scientific advisor for the Scandinavian Clinical Nutrition AB. Scandinavian Clinical Nutrition AB focuses on research and development of nutraceuticals, which are food supplements with clinically proven and scientifically documented efficacy and safety. He has played an important role in establishing SCN and its research and development work.

He serves as a board member for Scandivir AB. Scandivir is a joint venture between industry and science. Their primary focus is the obesity virus Adenovirus-36 (Ad-36). Believing the virus has contributed to the global obesity epidemic, Scandivir's aim is to create diagnostic kits to make it possible to see if a person is infected by Ad-36.

Dr. Schalling is a member of several societies including the American Society for Human Genetics, the American Association for the Advancement of Science, the International Brain Research Organization and the American Society for Neuroscience. In addition to his numerous scholarships and awards, including number 1 ranking for full professor in Molecular Genetics from Lund University, Dr. Schalling is the author of more than 220 published scientific articles and manuscripts. He serves on the Board of Directors at the Center for Molecular Medicine. He is the founder and board member of SAB Appetite Control, Inc. He serves on the advisory board for Max Planck Institute for Psychiatry and German Network for Depression Research. He also serves on the editorial board for Current Psychiatry Reviews and for Genes, Brain and Behavior.

Dr. Martin Schalling is married to Ellika Schalling. They have three daughters and one son.



### *Richard L. Atkinson, M.D.*

Richard L. Atkinson, M.D. graduated from the Virginia Military Institute and the Medical College of Virginia, Richmond. He took residency and fellowship training in Endocrine-Metabolism at UCLA Harbor General Hospital, Torrance, California, and fellowship training in Endocrine-Metabolism at Walter Reed Army Hospital. He has been on the faculty of the University of Virginia; University of California, Davis; Eastern Virginia Medical School; and the University of Wisconsin, Madison, where he is Emeritus Professor of Medicine and Nutritional Sciences. He currently is Clinical Professor of Pathology at Virginia Commonwealth University; Visiting Professor of Molecular Medicine, Karolinska Institute, Stockholm, Sweden; Director of the Obetech Obesity Research Center, Richmond, VA; and President of Obetech, LLC. He is Editor of the International Journal of Obesity; Regional Vice-President of The Obesity Society; Past President and Co-Founder of the American Obesity Association, Past President of the North American Association for the Study of Obesity, and Past President of the American Society for Clinical Nutrition. NAASO-The Obesity Society established the annual Richard Atkinson-Judith Stern Public Service Award in 2006 to honor his service to the field of obesity. Dr. Atkinson has been a consultant to the National Institutes of Health, National Academy of Sciences, US Department of Agriculture, Department of Defense, Department of Veterans Affairs, Food and Drug Administration, Federal Trade Commission, and numerous companies and foundations. He has been involved in obesity research and treatment for over 30 years. He is interested in obesity policy and has advocated for young investigator programs nationally and internationally. Recently, his research has focused on virus-induced obesity. He and his research group demonstrated that a human adenovirus (Ad-36) produces obesity in animals and is associated with obesity in humans. Dr. Atkinson has published over 175 manuscripts and over 200 abstracts in the medical literature.



### *James Marsden, Ph.D.*

James Marsden joined the ASI faculty in 1994 as the Regent's Distinguished Professor of Meat Science. He has a 100% research appointment. He also serves as the Associate Director of the National Agriculture Biosecurity Center – located at KSU.

His research focus has been on the safety of meat products. This work has included the control of E. coli O157:H7 in raw ground beef and other processed beef products and Listeria monocytogenes in processed meats. He also acts as the Senior Science Advisor for the North American Meat Science Association and has been involved in food safety training for the meat industry. Dr. Marsden is the author of numerous publications and book chapters on food safety and quality and is the recipient of awards for research and teaching.

He serves on a number of Advisory Boards for companies that provide food safety technologies to the meat industry and is a regular contributor to the television program – "World Business Review with Alexander Haig". He has also appeared on numerous television news programs as a food safety expert.

He enjoys spending time with his wife and five children and two grandchildren. His hobbies include collecting rare books, music and theater.



# SCIENTIFIC STUDIES



FRESHAIR SURROUND | RE:SIST

# Executive Summary by Allen Johnston - Chief Technology Officer, EcoQuest International University of Cincinnati Test Results

## EcoQuest ActivePure technology effect on air contaminants

### Summary:

Testing of EcoQuest's Fresh Air Technology has been performed over an 18 month period at the Center for Health-Related Aerosol Studies in the Department of Environmental Health at the University of Cincinnati under the direction of Dr. Sergey Grinshpun, Professor.

Testing included two technologies used in the Fresh Air system; Negative Ionization and Photocatalysis (an innovative proprietary Photocatalytic Reactor called Radiant Catalytic Ionization - ActivePure).

### Each technology was evaluated independently:

- Fresh Air Ionization technology was able to reduce airborne particles from indoor air by up to 250 times over natural decay (gravity)

- Fresh Air Radiant Catalytic Ionization (ActivePure -RCI) was able to inactivate approximately 90% of airborne microorganisms in less than 60 minutes. The microorganisms tested were MS2 Virus and B. Subtilis (used as a surrogate for Anthrax).

Dr. Grinshpun also concluded that the combination of the two technologies provided a much more significant reduction of airborne biocontaminants than either of the two technologies working independently.

### About the Author:

Dr. Grinshpun is one of the most respected scientists in this important field of Aerosol Studies. Through his career, Dr. Grinshpun authored or co-authored about 390 scientific publications, including 120+ original articles in peer-reviewed journals, 90 book chapters and full proceeding papers, as well as about 180 conference abstracts. He has served as a reviewer, panel member or consultant to several federal agencies and professional associations nationally and internationally as well as for major companies and research institutions. He has also served on the Editorial Boards of four journals with international circulation. Dr. Grinshpun's accomplishments in aerosol research were recognized through the International Smoluchowski Award from the European Aerosol Assembly (1996, The Netherlands), the AIHA Outstanding Aerosol Paper Award (1997, USA), and the David L. Swift Memorial Award (2001, USA). He also received two John M. White Awards from AIHA (1997, 1998, USA) for his contribution to respiratory protection studies and Best Practice Award from the US

Department of HUD (2000) for his studies of leaded particles in indoor air.

### About the University:

University of Cincinnati is one of America's foremost Universities for Environmental Health.

### About the Testing:

The testing by Dr. Grinshpun and his team focused on controlling aerosol contaminants in the indoor air through the application of two technology strategies:

- 1) Particle Concentration Reduction due to Unipolar Ion Emission
- 2) Microbial Inactivation due to the Photocatalytic reaction promoted by a Photocatalytic process called ActivePure - RCI (Radiant Catalytic Ionization)

### The Results:

The paper concludes that the utilization of two mechanisms; ionization and oxidation, provide for significantly less exposure to potentially harmful contaminants in the air than either mechanism independently.

This conclusion is supported by showing ion induced air cleaning removes about 80% of viable airborne pathogens from a room air in 30 min, and the ActivePure-induced photooxidation inactivates about 90% of the remaining airborne microorganisms. The combination of both mechanisms resulted in an overall aerosol exposure reduction after 30 min by a factor of about 50, or an overall reduction/inactivation of approximately 98%.

### The two active contaminants evaluated were:

- 1) B. subtilis bacteria
- 2) MS2 virions

### Publication:

This research was peer reviewed and published in the journal of Environmental Science and Technology, January 2007, pages 606-612.

### Note:

This testing was conducted in a controlled environment. Field results may vary based on environmental conditions. These results have not been evaluated by the FDA. This product is not a medical device intended to diagnose, treat, prevent, or cure any disease.

## Kansas State University Testing

### Biological reduction on surfaces through photocatalysis and ozone

#### with ActivePure RCI technology.

##### Summary:

Testing has been performed at the Kansas State Food Science Institute in the Department of Animal Sciences & Industry, Kansas State University in Manhattan Kansas under the direction of Dr. James Marsden, Regent's Distinguished Professor of Meat Science. Kansas State is one of America's foremost Universities for animal science and Dr. Marsden is known around the world as one of the top researchers and experts in food safety.

Ten of the most deadly forms of mold, fungi, bacteria

and virus were subjected to a new and innovative Photocatalytic Reactor called Radiant Catalytic Ionization (ActivePure). These ten organisms were placed on a piece of stainless steel inside a test chamber and the ActivePure cell was turned on for 24 hours. Test results showed a 24-hour reduction ranging from 96.4% to 100%.

This testing validates the effectiveness and speed which RCI is able to treat the indoor surface environment using a natural process at safe levels of oxidation.

##### Discussion:

With most indoor airborne contaminants originating on surfaces, any efforts to control biological contamination in the indoor environment must address surfaces.

Microorganisms such as Mold, Bacteria and Viruses thrive on surfaces in the presence of moisture, and for this reason the food industry has focused on controlling and eliminating pathogens in food contact areas.

Dr. Marsden has dedicated his life to improving food safety through understanding and controlling the spread of biological contamination. Marsden's research has recently focused on the use of advanced photocatalysis, a technology which develops oxidizers which actively reduce airborne and surface pathogens.

Ten microorganisms were chosen for analysis. Three samples of each microorganism were prepared and placed on a stainless steel surface, allowing analysis at 2 hours, 6 hours and 24 hours of exposure.

##### The test organisms included:

- Staph (Staphylococcus aureus)
- MRSA (Methicillin Resistant Staphylococcus aureus)
- E-Coli (Escherichia coli)
- Anthrax family (Bacillus spp.)
- Strep (Streptococcus spp.)
- Pseudomonas aureuginos
- Listeria monocytogenes
- Candida albicans
- Black Mold (Stachybotrys chartarum)
- Avian Influenza H5N8

These organisms were subjected to air which was circulating through a proprietary photo catalytic reactor called Radiant Catalytic Ionization or RCI (ActivePure). Multiple parameters were monitored including temperature and humidity. The UV Lamp in the photo catalytic cell was positioned in the supply duct to insure there was no effect from the UVGI produced by the lamp. Understanding that Ozone is one of the oxidizers produced in this Photocatalytic process and the health concerns from exposure to excessive levels of ozone, the ozone level was monitored and never exceeded 20 parts per billion, well below EPA maximum level for continuous exposure.

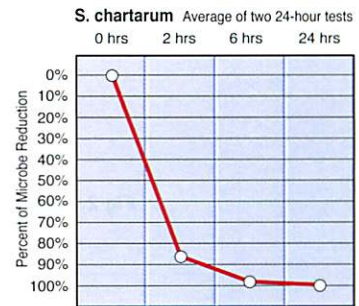
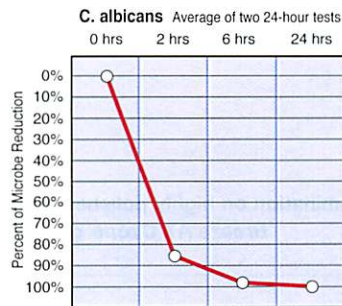
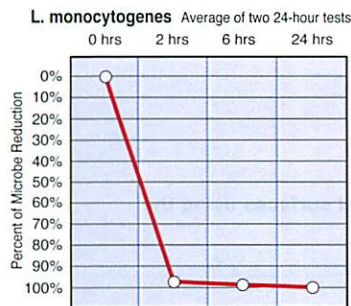
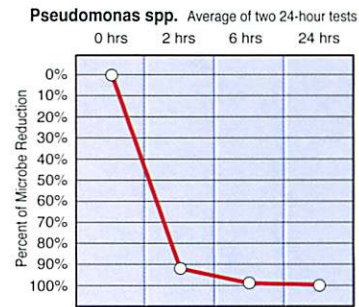
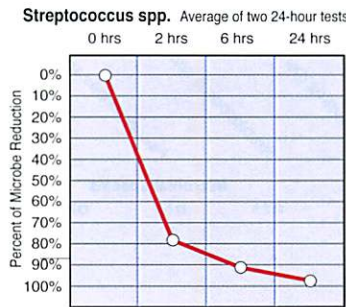
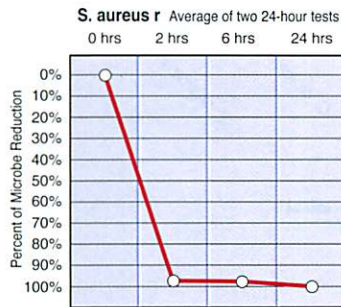
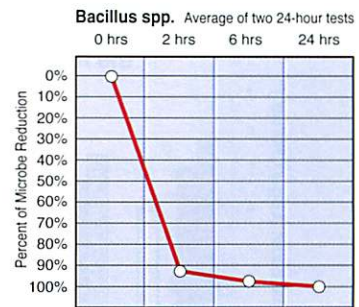
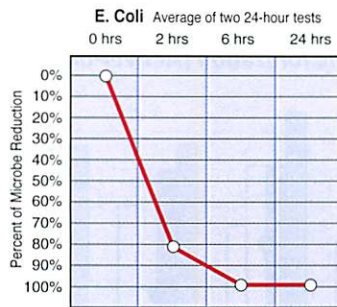
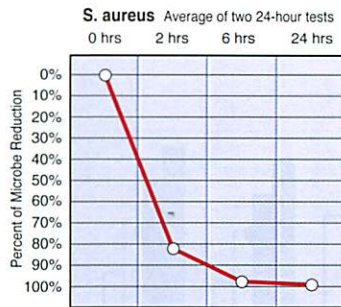
In addition to the test chamber treated with ActivePure and the corona discharge ozone generator, a control chamber was set up to account for natural decay of the test organisms. Because some biological pathogens die-off on their own when exposed to air, any reputable study must account for such reductions. The test results shown in the report are the reductions in viable organisms with respect to the control sample.

The test results were astounding. After 24 hours of exposure the nine organism's viability was reduced between 96.4% and 100%. It should be noted that the double blind study accounted for natural decay. What was even more surprising to the researchers was how fast ActivePure reduced the pathogens. At the 2-hour sample the average reduction was well over 80%. At the 6-hour sample the average reduction was well over 90%.



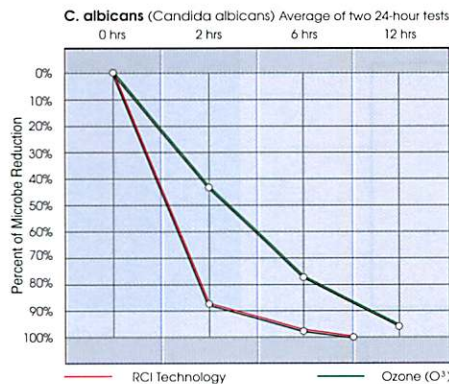
## Effects of RCI™ Technology

on reducing common bacteria and fungi on **surfaces** in 24-hour testing.



## Comparing the Effects of RCI Technology and Ozone Technology on reducing common bacteria and fungi on **surfaces\*** in 24-hour testing.

Testing by Kansas State University. Field results may vary based on environmental conditions.



### Summary of Test Results – Biological Reductions using RCI (Ozone at .02 ppm):

- Staphylococcus aureus : ..... **98.5% reduction**
- MRSA - Staphylococcus aureus (Methicillin Resistant): ..... **99.8% reduction**
- Escherichia coli : ..... **98.1% reduction**
- Bacillus spp. : ..... **99.38% reduction**
- Streptococcus spp. : ..... **96.4% reduction**
- Pseudomonas aeruginosa : ..... **99.0% reduction**
- Listeria monocytogenes : ..... **99.75% reduction**
- Candida albicans : ..... **99.92% reduction**
- Stachybotrys chartarum : ..... **99.93% reduction**

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\*Scientific tests have demonstrated the use of Vollara air purifiers substantially reduce microbial populations on **surfaces** – including but not limited to Escherichia coli, Listeria monocytogenes, Streptococcus spp., Pseudomonas aeruginosa, Bacillus spp., Staphylococcus aureus, Candida albicans, and S. chartarum. Presently Vollara does not make a similar claim with respect to airborne microbials. These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure, or prevent any disease.



CDFS-191-08

**The Invisible Environment Fact Sheet Series**

# Indoor Air Quality: Dust and Molds

**Jackie LaMuth**

Leader, Resource Development and Management  
Ohio State University Extension

## Introduction

Every day we are exposed to any number of environmental pollutants that each poses a different level of risk towards our health and well-being. Some of these risks are completely unavoidable. Some we either don't consider to be harmful enough or we simply choose not to correct them because of the amount of effort it may take to do so. However, others are completely avoidable and controllable if we choose to make the correct decisions in reference to our lifestyles. Poor indoor air quality is one such risk that can be controlled and in many cases removed completely.

Current research has shown that people spend approximately 90 percent of their time indoors. There is also growing evidence that indicates that indoor air, not only within office buildings, but within our homes as well, can be more polluted than the air in the largest of our cities. What this boils down to is that, for many people, health risks due to air pollution may be greater indoors than outdoors. This also means that, unfortunately, those who would be affected adversely by air pollution are also the same people who spend most of their time indoors—the very young, the elderly, and those suffering from respiratory or cardiovascular disease.

The good news is that, with the proper education and making the correct choices, indoor air quality can be improved. This fact sheet examines common contaminants, their sources and what to be aware of in your home, the short and long term health effects, how to improve the air quality in your home, and future prevention.

## Common Pollutants and Their Sources

The types of contaminants and the amounts that are suspended in the air determine air quality. Potential sources of indoor air quality fall into several categories. The pollutants that fall into these categories are noticeably part of our daily routines. They are as follows:

1. Combustion sources:
  - oil, gas, kerosene, coal, wood, and tobacco products
2. Building materials and furnishings:
  - deteriorated insulation that could potentially contain asbestos
  - wet or damp carpet
  - furniture or cabinetry made of certain pressed wood products
3. Household products:
  - cleaning products (furniture polish, air fresheners, etc.)
  - personal care products (hair spray, shoe polish, perfumes, etc.)
  - office and hobby products (paint, glue, markers, spray adhesives, etc.)
4. Household appliances and systems:
  - Unvented stoves, furnaces, or space heaters
  - central heating and cooling systems
  - humidification devices
5. Outdoor sources that make their way inside:
  - radon
  - pesticides
  - general outdoor air pollution

# CORPERATE TESTOMONIALS



New York City

Dear Mr. Castillo,

It is of great pleasure that I write this letter detailing our experience with the technology we purchased from your company.

Our sign shop department located within Herald Square facilitates all interdepartmental materials for all ninety-five (95) Macy's East store locations. On a monthly basis our department averages over 300,000 four-color and black and white printouts. As such, after a print job was complete, toner and other chemicals would always be thick in the air, making it very uncomfortable to breathe. This caused a major concern to our employees that needed to be addressed.

After hearing about how successful the purifiers you sold to other departments have been working, I agreed to evaluate a purifier in my office and the sign shop. After seeing the size of the purifiers, I have to admit I was extremely skeptical that it could handle such a task of cleaning the air.

The day before the unit was brought in, a large print job was run. It would have been customary for the toner and chemical odors to remain and linger in the sign shop for several days. However, I was amazed that within hours of placing the unit, it had eliminated all of the chemical odors and the entire department smelled of clean fresh air. It was as if someone opened a window!

Now that we have used this product for several months I can personally confirm that this is definitely a high quality workhorse machine that over delivers. It single handily improved the overall quality in our entire sign shop department. In addition, the affordable price of the purifier allowed us to stay well within our budget.

Once again, I want to thank you for introducing Macy's to the technology, we are extremely happy with the product and have absolutely no reservations recommending the technology to others who want a cost effective way to clean up their indoor environment. In fact, I am so impressed with the technology that I purchased one for my home.

Sincerely,

**Rafael Games**  
Director of Finance  
Sign and Print Operations



**Patrick A. O'Malley, Ph.D.**  
Performance Technology Specialist

Dear Sir,

Just a note to compliment you on your company's air purifier. I have had it in my motorhome for the past year and the inside still smells "factory new". The interesting part is that I smoke both cigars and cigarettes in the motorhome!

Ed Smoot, service manager at Olathe Ford RV in Gardner, Kansas, was so impressed with the results he noticed, he has set them up as a dealer.

I also have the product at home with the same outstanding results. Just thought you would like to know that you have a very satisfied customer in Kansas.

Sincerely,



Patrick A. O'Malley Ph.D

**Ray Catena Motor Car Corporation, Authorized Mercedes-Benz Dealer**



To Whom It May Concern,

Edison, NJ 08817

Keith Petersen  
224 Elmer Street  
Westfield, NJ 07090

Dear Keith:

Just a quick note to tell you how pleased we are with the technology that we purchased from you.

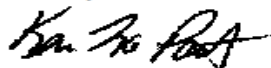
As you know, Ray Catena is one of the premier Mercedes-Benz automobile dealers in this country. As customer service is our highest priority, we have a fleet of forty loaner cars we make available to our customers as their cars are brought in for service. Unfortunately, these loaner cars eventually retain smoke odors inside from our smoking customers. Then, our non-smoking customers become offended when they're offered these loaners with stale cigar and cigarette smoke smells.

We have never been able to effectively deal with these smoke odors until we acquired one of your air purifiers! We can now run the product inside of a car that has been smoked in, and these odors are completely eliminated. No more unhappy customers!

As well, we will place the unit into an office that is being renovated --something we are doing regularly -- and immediately we are making fresh air and combating smells. Instead of suffering for days or weeks with the odors from the new carpet, paint, and wallpaper, we do not smell them at all after a short run of the purifier. This has been a great, yet simple, answer to our indoor air problems.

We can freely recommend this product to anyone who wishes to combat smoke, odors, and so on; as well as for anyone who enjoys the smell of fresh, clean air.

Sincerely,



Ken LaPoint  
Vehicle Prep Manager

**Welsch-Beckmann Dental Lab**

Sonja Leirfallom  
725 W. Central, Suite 203  
Missoula, MT 59801

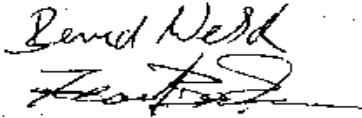
Dear Sonja,

What a difference in our Dental Lab! We did not believe it would be possible. No more blue haze or dust in the air. Filters could not remove the small particles like your air purifier does.

Our wax used in making molds left an overwhelming burning smell if the exhaust fan was not left on. When this happened, we had to aerate our lab by leaving all the doors open. But no more - your product takes care of the odors, even from smoking clients! Our lab now smells like the fresh, clean, and healthy air after a rainstorm.

We heartily recommend your technology.

Sincerely,



Bernd Welsch  
Klaus Beckmann



THE UNIVERSITY OF NORTH CAROLINA

TAR HEELS

FOOTBALL OFFICE  
PO BOX 2617  
CHAPEL HILL, N.C. 27515

To Whom it May Concern,

I am the football equipment manager at the University of North Carolina and am in charge of general maintenance of our locker room.

I am writing this letter to relate the success we have had with the air purifier units we purchased from Robbie Spransy at Common Scents.

We purchased these items last summer because we have had problems with various odors throughout the year and have unsuccessfully tried many products to resolve them. We felt like the purchase of the units would pay for themselves because it would eliminate the need for other products and we have not been disappointed.

We have noticed a major improvement in the locker room smell and atmosphere. The number of colds and general illnesses on our football team seems to have decreased also. We have been especially pleased with the fact that these units produce fresh clean smelling air without creating their own strong odor.

In closing I would like to say we intend to purchase more of these units in the future for other parts of our building. We have been so successful with these units that we feel that we can utilize them in other parts of our building.

Sincerely,



Dominic Morelli  
University of North Carolina Football Equipment Manager

1947 Sugar Bowl	1971 Gator Bowl
1949 Sugar Bowl	1972 Sun Bowl
1950 Cotton Bowl	1947 Sun Bowl
1963 Gator Bowl	1976 Peach Bowl
1970 Peach Bowl	1977 Liberty Bowl
1971 Gator Bowl	1976 Peach Bowl
1972 Sun Bowl	1977 Liberty Bowl
1947 Sun Bowl	1980 Bluebonnet Bowl

AM1500 Radio KSTP



Dear Sirs,

I wanted to take a moment to tell you how pleased I am with the air purifier units I purchased for our office.

We operate out of an old, small, and poorly ventilated building. Having the units on all winter was wonderful. The air was much fresher and even spring-like.

I think you'll be interested to hear what DAVID PARADEAUX of the MINNESOTA ZEPHYR had to say. We recently held a KSTP AM 1500 Smoker on the train and used your air units to help cleanse the air. Here's what DAVE PARADEAUX, MN ZEPHYR, owner, said:

"During the KSTP AM 1500 SMOKER - we had 244 cigar smokers in six (6) closed 60 X 12' train cars. Your air purification units worked real well - the train smelled fresh - the odor was gone and we were back on track the next day!"

Thanks for introducing us to a great product.

Sincerely Yours,

A handwritten signature in cursive script that reads "John Soucheray".

John Soucheray  
General Sales Manager

JS/cj

2792 Maplewood Drive · Saint Paul, MN 55109