



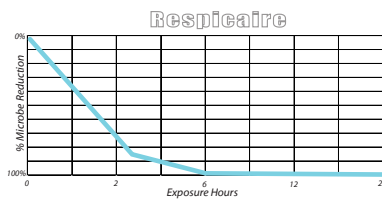
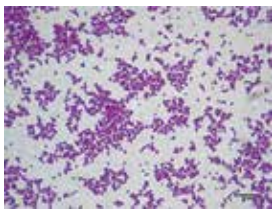
by T.F.I. Company Inc.

## Modern Medicine for the Health of Your Indoor Air™

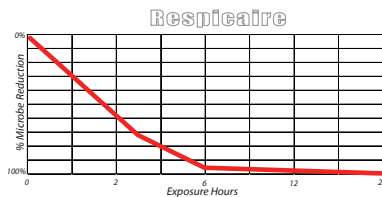
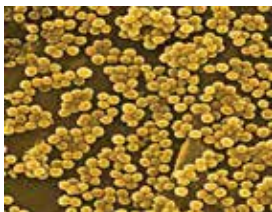
Respicaire is an Environmental Company that develops, manufactures and researches proprietary technologies worldwide to cleanse, detoxify and purify indoor living environments. Over two million devices with our air cleansing technologies are at work daily. Our patents cover a wide range of designs including Active Ionic Oxidation, Advanced Photocatalytic Carbon adsorption, UVGI Germicidal purification and High Efficiency (99%) Air Cleaners. Hospitals, medical facilities, schools, casinos, offices, restaurants & homes are just a few of the facilities that trust Respicaire for enhanced indoor air quality.

At Respicaire, we routinely test via independent, industry recognized facilities including 3<sup>rd</sup> party professional Labs, Research Organizations & Universities – UL, CUL, TUV, EPA, FIFRA, ASHRAE, EU, CSA, 52.2 Merv, Health & Welfare Canada.

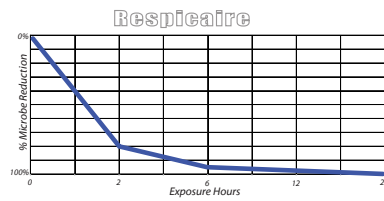
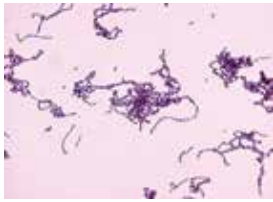
The following summary covers some of the independent testing & research.



**Staphylococcus aureus** is a bacterium frequently found in the nose, respiratory tract and on the skin. It is a common cause of respiratory infections. Pathogenic strains often promote infections by producing potent protein toxins. It is still one of the five most common causes of acquired infections. It is estimated that 500,000 patients in United States' contract a *staphylococcus aureus* annually. Reduction percentage 99.96% - MC Science Labs

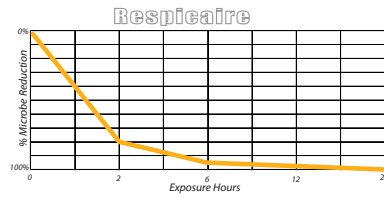


**MRSA** is a bacterium that is resistant to antibiotics. These bacteria can cause a full range of illnesses from minor skin infections, pneumonia to meningitis. MRSA is troublesome as it transmits by contact in schools, daycares, dormitories, medical buildings, nursing homes and crowded spaces. Reduction percentage 99.98% - MC Science Labs



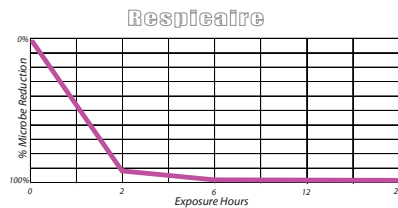
**Streptococcus pyogenes** has claimed many lives. This opportunistic pathogen can cause various diseases from tissue and wound infections, to scarlet fever and painful strep throat and impetigo. It transmits by respiratory droplets, nasal discharge and skin contact.

Reduction percentage 99.3% - MC Science labs



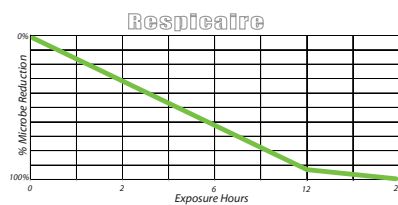
**Streptococcus Pneumoniae** is a bacterium that causes respiratory or inner ear infections in children and adults, as well as meningitis. It is most frequent cause of pneumonia among the elderly and people with a weak immune system. It is transmitted from person to person by touching coughing and sneezing.

Reduction percentage 99.3% - MC Science Labs

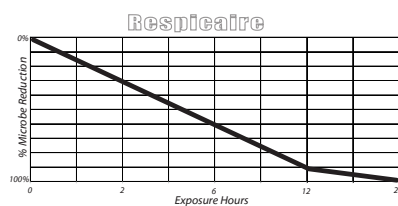


**Enterococcus Faecalis** is a bacterium that has developed resistance to the antibiotic treatment. It can cause a variety of local, systemic and urinary tract infections. These opportunistic pathogens affect elderly with underlying disease and other immunocompromised patients. Often caught in medical & dental facilities, they transmit by contact.

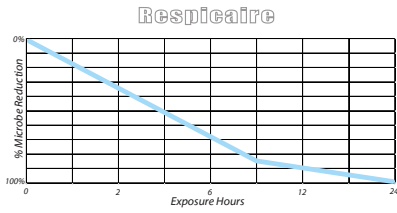
Reduction percentage 99.99% - MC Science labs



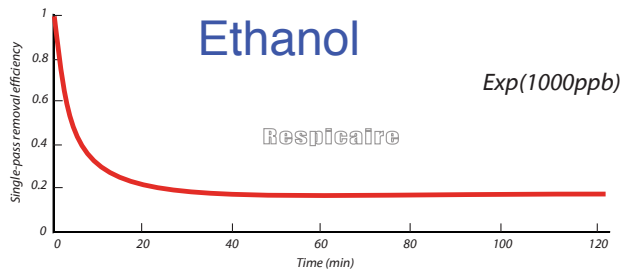
**Bacillus Subtilis** is a pathogen that can cause an array of infections. This bacteria can tolerate very harsh environmental conditions and extremely high temperatures. Bacillus moves quickly – the most well-known bacilli is anthrax also known as the “black plague”. Reduction percentage 98.1% - MC Science labs.



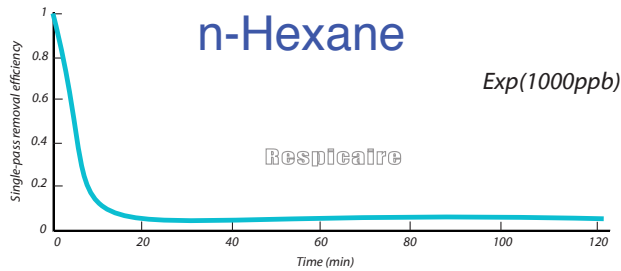
**Stachybotrys** contains about 50 species. **Stachybotrys Chartarum** is one of the more infamous organisms of this genus. Also known as "black mold" or "toxic black mold" in the U.S. It is frequently associated with poor indoor air quality that arises after fungal growth. Mycotoxins produced by mold can cause allergic reaction, respiratory irritation as well as poisoning. Reduction percentage 99.01% - OFH&M Scientific Research



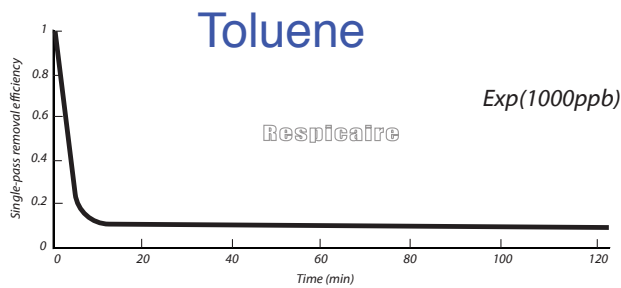
**Escherichia coli** also known as **E. coli** is a bacterium of the genus *Escherichia* that is commonly found in the lower intestines of humans & animals. *E. coli* is expelled into the environment & can grow exponentially under the right conditions. Some strains can cause severe infections & complications. This bacterium continues to be intensively investigated. Tested by HW Canada



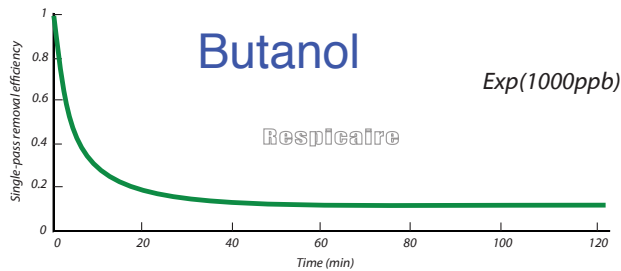
**Ethanol** is volatile, flammable & colorless, mostly produced by the fermentation of sugars by yeasts, or by petrochemical processes. It is an addictive psychoactive drug widely used as a solvent, fuel or for synthesis of other chemicals. Inhaling Ethanol causes impaired sensory and motor function, slowed cognition, stupefaction, unconsciousness, and possible death. Tested by Concordia University



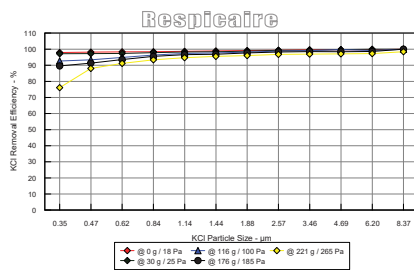
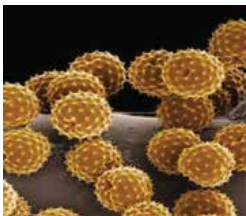
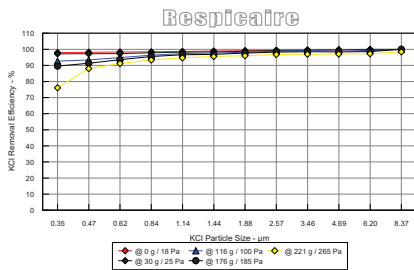
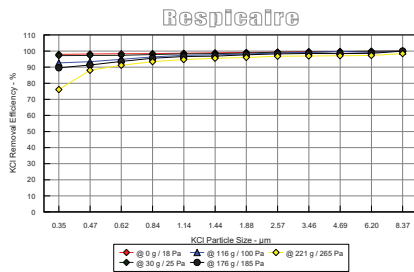
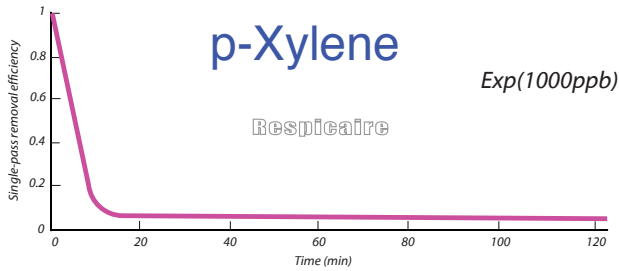
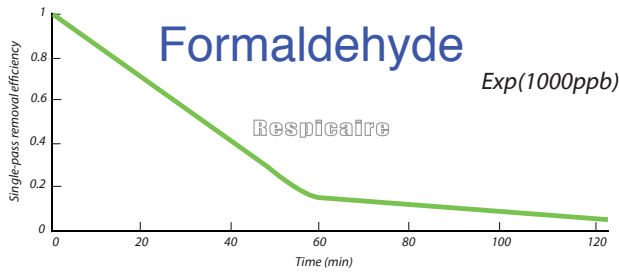
**Hexanes** are significant constituents of gasoline. Colorless and odorless, they are widely used as cheap and easily evaporated solvents and as a formulation of glues for shoes, leather products and roofing. Acute exposure to *n*-hexane usually occurs by inhalation, but it may be absorbed orally or through the skin. Hexane is toxic and can be fatal to humans. Tested by Concordia University



**Toluene** is a colorless liquid with paint thinner like smell. It is a byproduct in the production of gasoline and coke from coal. Toluene is a common solvent, e.g. for paints, paint thinners, silicone sealants, rubber, printing ink, glues, lacquers, leather tanners, and disinfectants. Inhalation of toluene in low to moderate levels can cause tiredness, confusion, memory & appetite loss and nausea. Tested by Concordia University



**Butanol** is a four-carbon alcohol, primarily used as a solvent or fuel and as an intermediate in chemical synthesis. Butanol is considered toxic. Repeated overexposure can result in depression of the central nervous system, severe eye irritation and skin irritation. Tested by Concordia University



**Formaldehyde** is a colorless, flammable, strong-smelling chemical that is used in many building materials. It is also found in fertilizers, pesticides, preservatives, resins, paints, coatings, board and paper products. Exposure to formaldehyde can cause adverse health effects including irritation of the skin, eyes, nose, and throat. High levels of exposure may cause some types of cancer. Tested by Besin Tech Ltd - VIS Spectrophotometer

**Xylene** is a colorless and highly flammable liquid used for a wide variety of industrial applications. It is also a component in production of polyester, widely used in public. Inhaling *p*-xylene will cause dizziness, headache, drowsiness, nausea, eye irritation, headache. Long exposure affects central nervous system. Tested by Concordia University

**Dust Mites** live in human habitations and feed on organic detritus, such as human skin, dandruff. They multiply very quickly and due to their very small size they can become easily airborne. House dust mites are associated with allergic rhinitis, asthma, wheezing and allergic reactions. Tested by Intertek - Ashrae 52.2 MERV test - Microparticle efficiency 99%

**Lung Damaging Dust** – These particles in homes, offices, and other indoor environments are very small suspended particulates that often fall between the cilia in our breathing passages. Allergic reaction, inflammation and respiratory distress are associated with these tiny airborne dusts. Many are chemical in nature requiring effective control & removal. Many are known health threats particularly for children & the elderly. Tested by Intertek Ashrae 52.2 MERV - Microparticle efficiency 99%

**Pollen** - Nasal allergy to pollen is called “pollinosis” and allergy to grass pollen is called hay fever. The number of people in North America affected by hay fever is between 20 and 40 million. Individuals who suffer from eczema or are asthmatic tend to be more susceptible to developing long-term hay fever. (according to American study of allergy and clinical immunology) Tested by Intertek – Ashrae 52.2 MERV – Microparticle Efficiency 99%

www.respicaire.com - **Respicaire** - Trademark of TFI Company

Respicaire Indoor Air Quality Products

Disclaimer: No medical claims are made by this report.

## **Respicaire Bulletin RS 2134 - Corona Virus**

The recent outbreak of the Coronavirus, also known as Covid-19, has introduced a previously unknown corona viral strain raising health concerns worldwide. This virus strain, while new, is related to existing corona viral strains like SARS & MERS. There are 7 known corona viruses that can & do infect humans. Four of the strains are tied to the common cold and were first identified in the 1930's. Three of the strains can be more challenging and include COVID 19, SARS & MERS. This new strain (COVID 19) is thought to have been transmitted via market meat in Wuhan China from animal to human.

### **Transmission and migration of COVID-19**

These viruses typically follow known patterns for transmission & migration. They include direct contact, fluid transmission, surface contact and airborne nuclei. Airborne nuclei transmission can occur when an infected person expels droplets via their respiratory system by way of a cough sneeze or close breathing proximity. This process is similar to the way other known pathogens are spread, like influenza. These droplets are thought to be one of the primary methods of transmission. They can easily travel and make contact or be inhaled leading to infection. Scientific research suggests that these viruses are robust enough to survive for a period of time outside a host organism. They also vary in size so some of the smallest nuclei can stay easily airborne. This means that indoor air handling systems, home heating & cooling systems or any air moving process may have the ability to expedite travel & transmission. This follows existing knowledge & experience with microbial migration.

### **Ultra Violet Purifiers & the Corona Virus**

While Ultra Violet systems have been shown to be effective at the reduction, disinfection and elimination of airborne microbials this new viral strain, Covid 19, has not been tested. Testing bio-hazards like this corona strain will require a time investment to establish workable parameters and safety protocols. Going forward we will closely follow this development so that we invest in laboratory testing once protocols are available. Existing research has shown shown that these viral agents have a vulnerability to Ultra Violet technology. Respicaire air cleaning technology has been tested on other airborne microorganisms as well as airborne particulate reduction. This data is available via our study report and can be ordered through our market channels.

Respicaire recommends Ultra Violet air treatment as a sensible addition to any indoor air moving environment. The recirculating nature of HVAC systems means microorganisms have multiple pass exposure to help with reduction, disinfection & oxidation.

## Air Cleaners

Capture & Contain technology in high efficiency air cleaners helps add another level of support in controlling the migration and reduction of airborne contaminants. As new viral & bacterial strains manifest, effective air cleansing & purification products offer enhanced value for all.

If you are seeking a solution to the problem of airborne microbials, particulates & VOC's we offer a wide variety of product solutions to suit your needs.

Contact a Respicaire Authorized Dealer to learn more about Respicaire Healthy Indoor Air Solutions. Indoor Air Quality products make a great investment value for our indoor living environments.



**For the Health of Your Indoor Air**

### Citations

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Stability & Inactivation of Sars Corona Virus, Rabenau, Morgenstern, Bauer, Presier & Doerr  
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