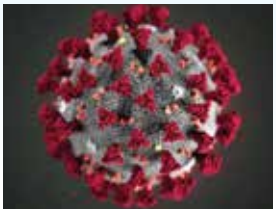
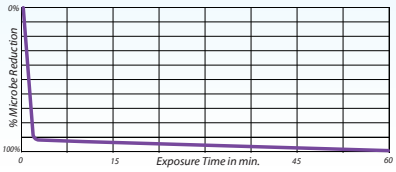
Respicaire® STUDY REPORT

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.

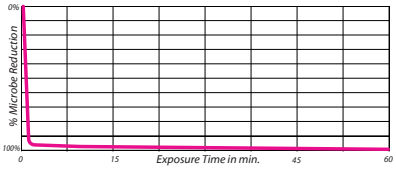
At Respicaire, we routinely test via independent 3rd party Labs, Research Organizations & Universities – While real world results can vary it helps to know we take pride in our products and test constantly for virucidal efficacy.

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

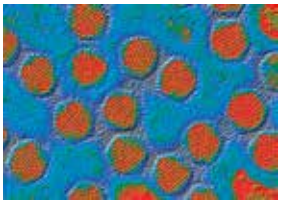


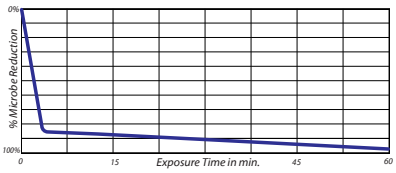


Coronavirus – Corona virus is an infectious agent caused by SarsCov2. It known to cause death or serious to mild respiratory issues in infected patients and has been the prime infectious agent in the recent worldwide pandemic.
Inactivation percentage 99% - MRI Global Labs

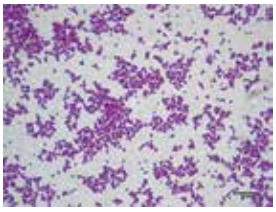


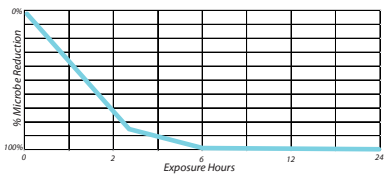
Influenza H1N1 – H1N1 is a type of influenza better known a swine flu. It is a virus strain responsible for seasonal flu deaths primarily affecting young children & young to middle aged adults.
Inactivation percentage 99%- MicroChem Labs



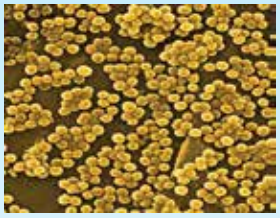


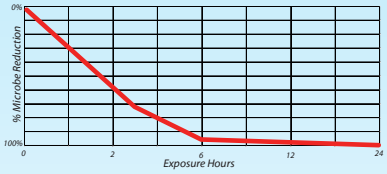
Adenovirus - Adenoviruses are a group of common viruses that infect the lining of your eyes, airways and lungs, intestines, & urinary tract. They are infectious year round.
Inactivation percentage 99% - MicroChem Labs



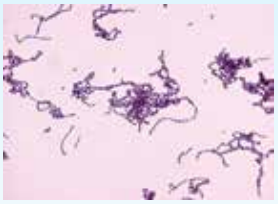


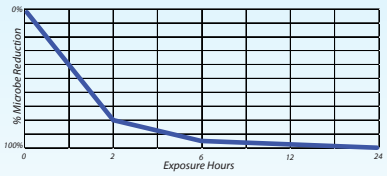
Staphylococcus aureus is a bacterium frequently found in the nose, respiratory tract and on the skin. It is a common cause of respiratory infections. It is still one of the five most common causes of acquired infections. It is estimated that 500,000 patients in United States' contract a staphylococcus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



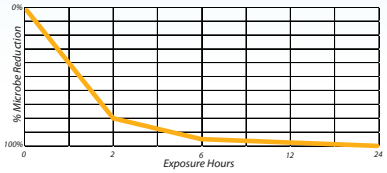


MRSA is a bacterium that is resistant to antibiotics. These bacteria can cause a full range of illnesses from minor skin infections, pneumonia to meningitis. MRSA is troublesome as it transmits by contact in schools, daycares, dormitories, medical buildings, nursing homes and crowded spaces.
Reduction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

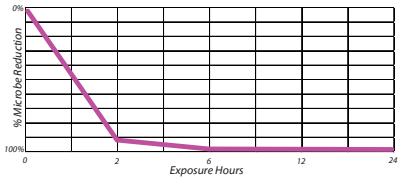




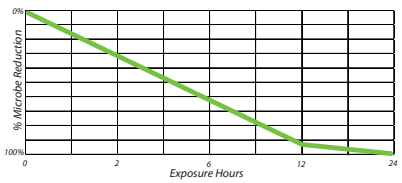
Streptococcus pyogenes has claimed many lives. This opportunistic pathogen can cause various diseases from tissue and wound infections, to scarlet fever and painful strep throat and impetigo. It transmits by respiratory droplets, nasal discharge and skin contact.
Reduction percentage 99.3% - MC Science labs



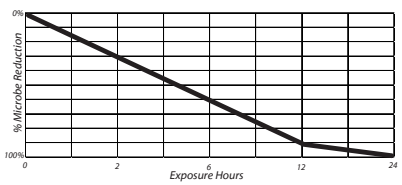
Streptococcus Pneumoniae is a bacterium that causes respiratory or inner ear infections in children and adults, as well as meningitis. It is most frequent cause of pneumonia among the elderly and people with a weak immune system. It is transmitted from person to person by touching coughing and sneezing.
Reduction percentage 99.3% - MC Science Labs



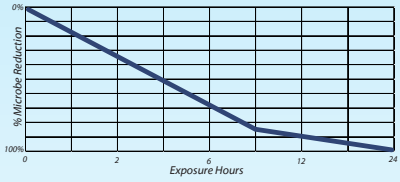
Enterococcus Faecalis is a bacterium that has developed resistance to the antibiotic treatment. It can cause a variety of local, systemic and urinary tract infections. These opportunistic pathogens affect elderly with underlying disease and other immunocompromised patients. Often caught in medical & dental facilities, they transmit by contact.
Reduction percentage 99.99% - MC Science labs



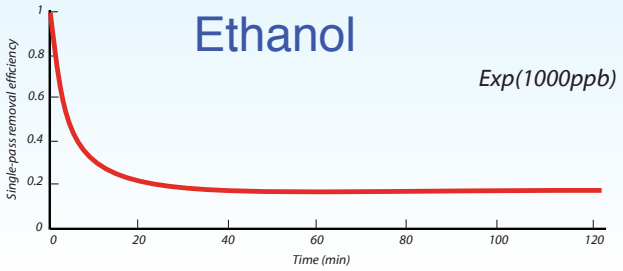
Bacillus Subtilis is a pathogen that can cause an array of infections. This bacteria can tolerate very harsh environmental conditions and extremely high temperatures. Bacillus moves quickly – the most well-known bacilli is anthrax also known as the "black plague". Reduction percentage 98.1% - MC Science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



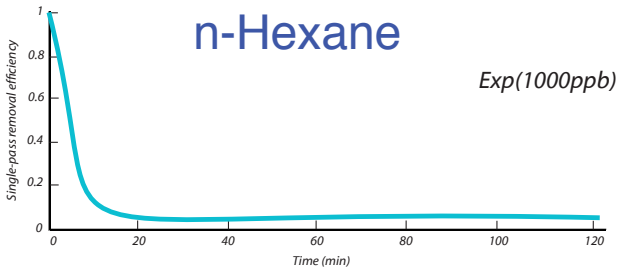
Stachybotrys contains about 50 species. **Stachybotrys Chartarum** known as "black mold" or "toxic black mold" in the U.S. It is frequently associated with poor indoor air quality that arises after fungal growth. Mycotoxins produced by mold can cause allergic reaction, respiratory irritation as well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



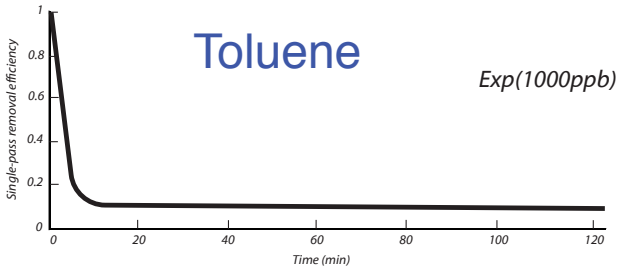
Escherichia coli also known as **E. coli** is a bacterium of the genus Escherichia that is commonly found in the lower intestines of humans & animals. *E. coli* is expelled into the environment & can grow exponentially under the right conditions. Some strains can cause severe infections & complications.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



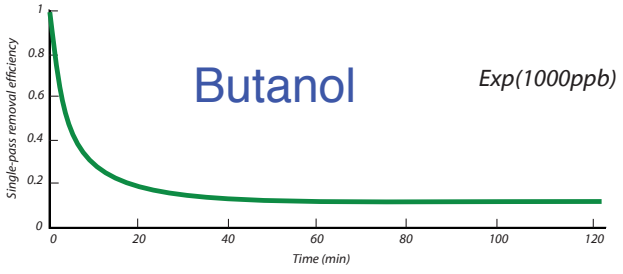
Ethanol is volatile, flammable & colorless, mostly produced by the fermentation of sugars by yeasts, or by petrochemical processes. It is an addictive psychoactive drug widely used as a solvent, fuel or for synthesis of other chemicals. Inhaling Ethanol causes impaired sensory and motor function, slowed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



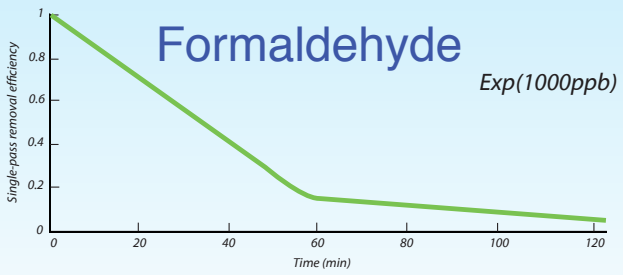
Hexanes are significant constituents of gasoline. Colorless and odorless, they are widely used as cheap and easily evaporated solvents and as a formulation of glues for shoes, leather products and roofing. Acute exposure to *n*-hexane usually occurs by inhalation, but it may be absorbed orally or through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



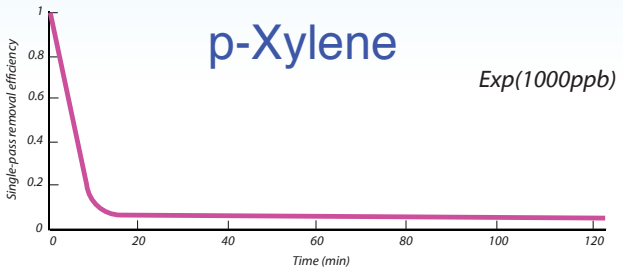
Toluene is a colorless liquid with paint thinner like smell. It is a byproduct in the production of gasoline and coke from coal. Toluene is a common solvent, e.g. for paints, paint thinners, silicone sealants, rubber, printing ink, glues, lacquers, leather tanners, and disinfectants. Inhalation of toluene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



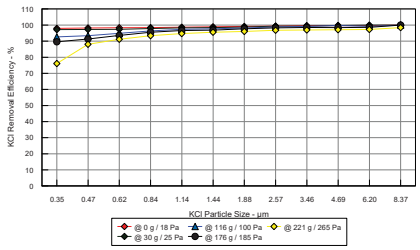
Butanol is a four-carbon alcohol, primarily used as a solvent or fuel and as an intermediate in chemical synthesis. Butanol is considered toxic. Repeated overexposure can result in depression of the central nervous system, severe eye irritation and skin irritation. Tested by Concordia University



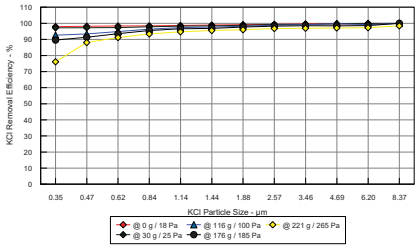
Formaldehyde is a colorless, flammable, strong-smelling chemical that is used in many building materials. It is also found in fertilizers, pesticides, preservatives, resins, paints, coatings, board and paper products. Exposure to formaldehyde can cause adverse health effects including irritation of the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



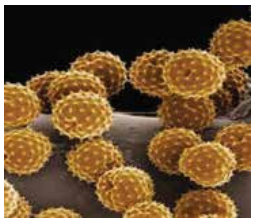
Xylene is a colorless and highly flammable liquid used for a wide variety of industrial applications. It is also a component in production of polyester, widely used in public. Inhaling *p*-xylene will cause dizziness, headache, drowsiness, nausea, eye irritation, headache. Long exposure affects central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

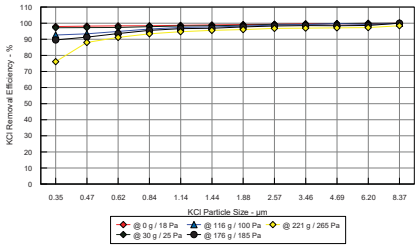


Dust Mites live in human habitations and feed on organic detritus, such as human skin, dandruff. They multiply very quickly and due to their very small size they can become easily airborne. House dust mites are associated with allergic rhinitis, asthma, wheezing and allergic reactions. Tested by Intertek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

Disclaimer - No medical claims are made or implied in this report

CORONA VIRUS **TESTING**

WE ARE PLEASED TO REPORT

THAT 3RD PARTY INDEPENDENT TESTING

MRIGlobal

MICROCHEM LABORATORY

NEIDL National Emerging Infectious Diseases Laboratories

Respicaire®

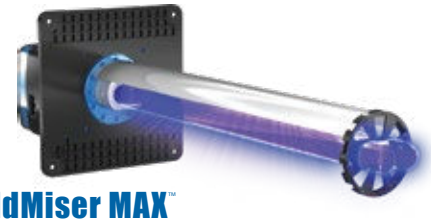
For the health of your indoor air

Products & Technology Tested

OXY 4™

BioClean™

OdorMiser DTX™



MoldMiser MAX™

Confirms Respicaire UV products inactivate 99% of the Pandemic Corona virus known as SARS-Cov-2 in seconds!

The recent worldwide pandemic has us busy at Respicaire providing indoor air quality solutions to help combat the Corona virus epidemic. With a deep product offering we have supplied our proprietary, air purifying products to residential, commercial, healthcare facilities, nursing homes, dental offices educational institutions & government facilities.

In a continuing effort to confirm performance efficacy for all Respicaire Ultraviolet air purification products we are happy to announce additional 3rd party testing. We have tested the inactivation efficiency of our Ultraviolet technology against the pandemic Corona virus known as SARS-CoV-2. This is the virus responsible for Covid 19 in humans.

THREE INDEPENDENT, 3RD PARTY LABS WERE INVOLVED WITH THIS TESTING.

We are pleased to report – as expected – that all our key Ultraviolet products achieved a 99% inactivation & neutralization of the Corona virus known as SARS-CoV-2 in seconds. Testing was for single units and each model was tested independently.

The first lab involved was MRI Global, a top level BSL 4 safety rated lab with 75 years of history specializing in global, technology based, research & testing for life sciences, the environment, energy, defense & government. In fact, MRI Global addresses some of the worlds' greatest threats and challenges. We are pleased to have their support and expertise in our testing protocol.

The products tested were the Respicaire OXY4 air purifiers, the Respicaire BioClean commercial air treatment units and the Respicaire Odor Miser DTX. All models achieved a 99% reduction in 5 to 10 seconds. These test results suggest that Ultraviolet purifiers continue to be the preferred technology recommendation for disinfection & inactivation of the airborne Corona virus in air moving systems. If properly designed & installed, Ultraviolet systems can help to inactivate & neutralize the infectious Corona virus much more quickly and effectively than competing technology. The test results speak for themselves.

The second lab involved was Microchem laboratory. Microchem is a highly specialized antimicrobial lab dedicated to the testing of disinfectants, sanitizers, antimicrobial devices & medical devices.

Microchem tested 3 Respicaire Ultraviolet devices against the Corona virus variant with a 99% inactivation across the board. Testing was also performed against the H1N1 influenza virus with the same results a 99% inactivation.

The 3rd lab was the National Emerging Infectious Diseases Laboratories. Their testing confirmed that technology used in Respicaire ultraviolet devices rapidly inactivates the pandemic Corona virus known as SarsCov-2. The OXY X, BioClean, OdorMiser DTX, MoldMiser Max, SR, SRPR & DLR.

While real world results can vary it is our position that ultraviolet continues to be one of nature's best virucidal agents and well suited to help inactivate and control airborne & surface microorganisms.

FEEL FREE TO CONTACT US DIRECTLY REGARDING THE TESTING
AND ANY ADDITIONAL INQUIRES YOU MAY HAVE.

Respicaire®

MODERN MEDICINE FOR YOUR INDOOR AIR

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