



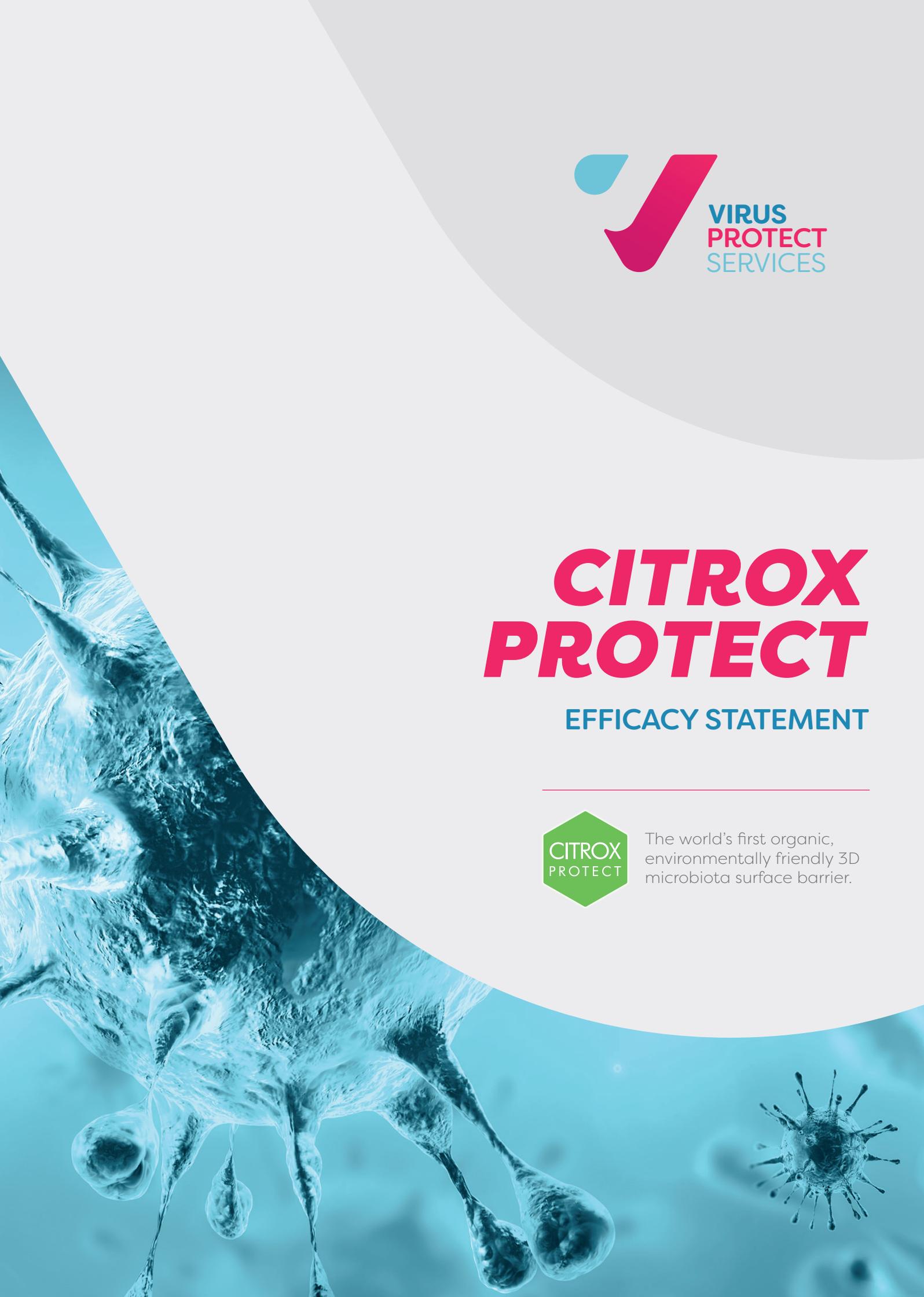
# ***CITROX PROTECT***

## **EFFICACY STATEMENT**

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The world's first organic, environmentally friendly 3D microbiota surface barrier.





## BACKGROUND

A British team of scientists had been working since the late 1990s to achieve a biotechnological breakthrough in pathogen control. Their hypothesis at that time was that if they could build on research initiated in the 1930s by Hungarian Nobel Prize winner Szent-Gyorgi on Natural Bioflavonoids. The objective was to use Nature's own 'weapons' to fight disease in plants, animals and humans. Citrox was one of the companies that born from this research.

The product Citrox BC (Bioflavonoid Complex), is a complex bioflavonoid compound created by a former ICI chemist in the UK, Ian Ripley, one of the founders of Citrox Ltd.

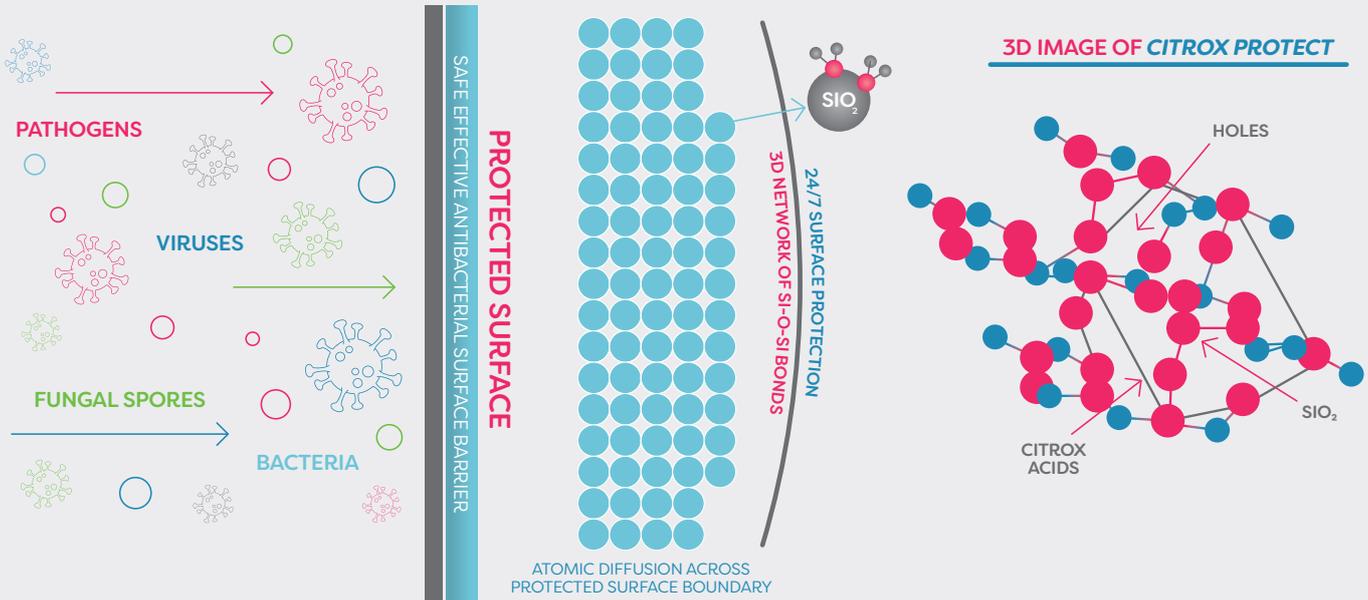
Bioflavonoids are naturally present in plants, fruit and vegetables, there are over 3,600 identified having a wide range of uses including anti-oxidants & food ingredients. The key ingredients are extracted from immature bitter oranges through a specialised extraction & filtration process. The extracted Bioflavonoids are then combined with a number of fruit acids to produce the core bioflavonoid complex (BC). The BC has broad spectrum anti-microbial, anti-viral, mould and fungus destroying properties. Citrox BC in direct comparisons to chemical sanitisers such as chlorine, peroxide, iodine and QAC perform exceptionally well, in most cases they outperform the alternatives.

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SiO<sub>2</sub> International have over 25 years of surface coating experience and knowledge. Their scientific expertise comes from extensive education and years of experience developing the coatings across Manufacturing, Maintenance, Architectural Glass, Textile, Transportation, Commercial Equipment, Automotive, Agriculture, Healthcare, Historic Preservation.

Their technical team includes Nano-technicians certified by the German Government who have a deep understanding of application fundamentals, surface analysis and the German industry offering similar products.

Recently (2019) their Nano-technicians successfully combined Citrox and SiO<sub>2</sub> at a sub-atomic level to create CitroxProtect. This brings the viricidal active ingredients of Citrox into a resilient and semi-permanent surface coating.





To whom it may concern

**July 2020**

**COVID-19 Information**

**COVID-19 belongs to a family of viruses, named Coronaviridae.**

Dear Sir/Madam,

There are 4 major genera in the family of Coronaviruses: Alpha-, Beta-, Delta- and Gamma Coronavirus. All of them are very closely related and are large enveloped viruses containing single stranded positive sense RNA.

Viral Envelopes are the structures that cover virus core. Viral envelopes are comprised of lipids and originate from the infected host cells. Due to their cell origin, compositions and structures of envelope lipids are highly conserved and not strain specific. The formulations effective against one strain of enveloped virus representing the virus family is extremely likely to be effective against the whole family of viruses. That is why regulatory agencies such as the US EPA and Health Canada created a list of surrogate viruses that possess equivalent susceptibility and belong to the same virus family as the viruses desired for a disinfectant or antiseptic efficacy claim.

The difference in strains of Coronaviruses is their pathogenicity, some of the Coronaviruses cause mild respiratory illness, and others like SARS, MERS and COVID-19, can be lethal. SARS, MERS, and COVID-19 are Beta-Coronaviruses. Our product has been successfully tested against SARS (betacoronavirus) strain which is very similar to the current virus COVID-19.

An enveloped virus is easier to kill under normal circumstances, however our product has also been tested to be effective against the nonenveloped virus (Norovirus) which is a far more difficult virus to control and eradicate.

Yours faithfully

**Richard Thomas**  
Managing Director



## WHAT IS IT?

CitroxProtect is a three-dimensional microbiota barrier coating, created by mixing two natural ingredients: SiO<sub>2</sub> and Citrox, both eco-friendly compounds.

Combining Citrox and silicone dioxide (SiO<sub>2</sub>) protects surfaces from bacteria, viruses or mildew, and is infused and encapsulated for stability

and slow diffusion. By adding SiO<sub>2</sub> to the mixture, the product creates a barrier that prevents viruses from being absorbed and the Citrox solution kills viruses on contact, keeping surfaces protected for six months.

*Citrox has been extensively tested against many bacteria and viruses including the SARS Corona Virus.*

## WHAT IS IT EFFECTIVE AGAINST?

Citrox has been extensively tested against many bacteria and viruses including the SARS Corona Virus.

Severe Acute Respiratory Syndrome (SARS) caused by severe acute respiratory syndrome coronavirus (SARS-CoV or SARS-CoV-1).

Details of the bacteria, viruses, fungi and Protozoa it has successfully been tested and proven effective against are listed at the back of this document.

SiO<sub>2</sub> has also been extensively tested confirming that it is antimicrobial, water and oil resistant, abrasion resistant (using both the Martindale and Taber test methods), scratch resistant, it protects against UV and weathering, is hard but with elastic properties, is safe for human health and the environment and is approved for use on technology by Microsoft.



## BACTERIA

Campylobacter jejuni  
 Candida albicans  
 Chaetomium globosum  
 Dipiodianatalensis  
 Listeria Monocytogenes  
 MRSA (Clinical strain)  
 Mycobacterium Fortutium (NCTC 8573)  
 Proteus Vulgaris  
 Pseudomonas Aeruginosa (ATCC 15442)  
 Salmonella Cholerasis  
 Salmonella Typhimurium (DT004)  
 Escherichia coli  
 F. sp. tuberosa  
 Fusarium sambucinum  
 Geotrichumcandidium  
 Klebsiella pneumonia  
 Lactobacillus pentoaceticus  
 Legionella pneumophila (NCTC11192)  
 Staphylococcus Aureus (NCTC 6571)  
 Staphylococcus Pyogenes  
 Staphylococcus sp.  
 Streptococcus Faecalis

## VIRUSES

SARS Cov 2 (Covid 19)  
 SARS Cov 1  
 H5N1 (Avian Influenza A)  
 Human Rhinovirus  
 Influenza A  
 Human Immunodeficiency Virus (HIV)  
 Urbani SARS  
 African swine fever  
 Foot & mouth disease  
 Gumboro virus  
 Herpes virus type 1 Herpes virus type 2 Herpes zoster  
 Hepatitis A, B & C

## PROTOZOA

Histomonasmeleagradis  
 Giardia lamblia  
 Entamoeba histolytica  
 Blastocystis hominis

## YEAST AND FUNGI

Aspergillus oizae  
 Aspergillus flavus  
 Aspergillus niger  
 Aspergillus terreus  
 Botrytis cinerea  
 Candida albicans  
 Candida glabrata  
 Chaetoniunglobosum  
 Cladosporium  
 GeotrichumCandidium  
 Collectotricum sp.  
 Fusarium sp.  
 Mucor sp.  
 Penicillium sp.  
 Penicillium Digitatum  
 Penicillium Funiculosum  
 Penicillium Italicum  
 Penicillium Roqueforti  
 Phomopsis Ortl  
 Pullularia pullulans  
 Pythium sp.  
 Trichophyton interdigitale  
 Trichophyton mentagrophytes



## ACCREDITATIONS

**CITROX PROTECT** is accredited to the latest EN standards including;

- ✔ **EN13624** Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity in the medical area.
- ✔ **EN13727** Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of bactericidal activity in the medical area.
- ✔ **EN14476** Chemical disinfectants and antiseptics. Quantitative suspension test for the evaluation of virucidal activity in the medical area.

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