RENZACCI UK
Be the best!

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OzoCAB™

Naturally sterilises & eradicates bad odour

Designed, made & supported in Britain

www.renzacci.co.uk

Benefits of the OzoCAB™ Cabinet

- It uses clean technology, no chemicals, no cleaning fluids, no powders.
- No Ducting required and fully portable; only needs a plug to operate.
- Simple, easy to use controls with a choice of programs to suit a wide range of tasks.
- Low running costs.
- OzoCAB™ will completely remove all odours from garments that cannot be washed or drycleaned, without damage.
- Large cabinet complete with hanging rail and racks for footwear, hats or small items.
- OzoCAB™ will remove odours from shoes, overalls, body armour, bedding, pillows, blankets and much more.
- The OzoCAB™ has been independently tested and certified by the University of Newcastle microbiology Laboratory to completely destroy harmful bacteria and various viruses.

OzoCAB™ will completely remove the following odours from a wide range of garment types

Odours	Garment types
• Cigarette smells • Pet smells • Cooking smells • Sweat odour • Spil milk • Urine smells • Fire smoke smells • Mould and mildew • Moth ball smells • Diesel smells • Vomit odours • Odours from footwear • Paint smells • Perfume smells ... and many more	• Suits • Leather garments • Formal Wear • Blankets • Uniforms • coats • Cushions • Hats and Caps • Sports gear • Footwear • Wedding dresses • Bedding • Overalls • Curtains • Fur Coats

European Biocidal Products Regulations

Registration of Ozone as a substance (showing its' safety and efficacy to justify it being called a biocide) is being implemented as an industry and is being managed by EuOTA.

The Biocidal Products Regulations (EU) 528/2012 (BPR) came into force on September 1st, 2013 repealing the Biocidal Product Directive (Directive 98/8/EC) and from that date Ozone is regulated as an "Active Substance" under BPR. Anyone who wishes to market an ozone generator for a Biocidal application within the EU must have their product authorized in accordance with the BPR, which is a two-step process.

Firstly, it was necessary for Ozone itself to be accepted as an "Active Substance", which requires a dossier to be submitted proving the efficacy and safety of Ozone as a substance in biocidal applications.

The deadline to submit this dossier was September 2016. Given the complexity of this process, a group of members within the European Ozone Trade Association (EuOTA) created a consortium called the Ozone Task Force (OTF) to join forces in creating the Ozone Dossier. **Our Ozone Cell manufacturer is a member of the OTF and Renzacci UK plc is a member of EuOTA.**

The OTF submitted the dossier within the required deadline and evaluation is ongoing. The timescales for such regulatory approval are often difficult to predict, but it thought that approval should be towards the end of 2021.

Until now, a grace period has been allowed for any existing Ozone manufacturers to continue supply until the Ozone Dossier has been approved. Following approval of the Dossier, only Ozone equipment supplied by companies with access to an approved Ozone Dossier will be able to legally used in the EU. (Note: Not only will suppliers without access to the Ozone Dossier not be able to supply new machinery, but also the machinery supplied prior to this date will also cease to be legal).

Those manufactures, with access to the Ozone Dossier, will be permitted to continue supply, and will then enter the second stage of this process in which they must register their own equipment within a given period to verify that those machines are capable of delivering Ozone within the parameters shown to be safe and effective in the Ozone Dossier.

Details of the BPR can be found on the European Chemical Agency (ECHA) website: https://echa.europa.eu/regulations/biocidal-products-regulation/understanding-bpr

Details of the OTF and a list of members can be found on the European Ozone Trade Association (EuOTA) website: https://www.euota.org/otf-ozone-task-force/

UK Biocidal Products Regulations

Clarification of the position regarding BPR in the UK following Brexit has now been issued the the UK HSE.

HSE have confirmed "*The existing EU Biocidal Products Regulation (EU BPR) has been copied into GB law and amended to enable it to operate effectively in GB. This means that most aspects of EU BPR will continue in the same way under the new stand-alone regime – the GB Biocidal Products Regulation (GB BPR) came into force at 11pm on 31 December 2020*".

The information submitted by HSE indicates that for products such as Ozone, in which a Dossier has been submitted, the EU dossier will remain valid but must be evaluated separately by UK authorities. The Ozone Dossier would require submission to the UK authorities by June 29th, 2021. Any OTF member will be free to participate in that process, but given the not insignificant cost involved, and the fact that only 9 of the 41 members are UK based, it is expected that a considerably smaller subset of the OTF will proceed with UK authorisation. Our manufacturers have already indicated their intention to the OTF to be part of the UK submission.

The HSE statement does not state the provision for a grace period for Ozone suppliers who are not participating in the submission of a dossier. It is not clear if this is simply an omission from the HSE statement but, should there be no grace period, then only equipment which has been supplied by companies who have access to the Ozone Dossier and have submitted it for approval in the UK will be legal after June 29th of this year. Of the 9 UK based OTF members, we are not aware of any other companies producing Ozone Cabinets (although non-UK OTF members can register for UK approval if they are willing to take on the cost). **It is therefore vital you check to ensure that the manufacturer of your Ozone solution is a member fo this dossier as if not, it is likely that your Ozone system will be illegal to operate after approval is given.**

Details of the HSE position on BPR in the UK can be found on the HSE website: https://www.hse.gov.uk/biocides/eu-bpr/authorised-approved-biocides.htm

OzoCAB™ WiFi Features

Allowing you and your Clients to see Sanitation and Deodourisation IN PROGRESS!

Simply download the App and you can have the information displayed at your Point of Sale, or near the OzoCAB™ for your staff and Clients to see in REAL TIME on your Tablet or PC.

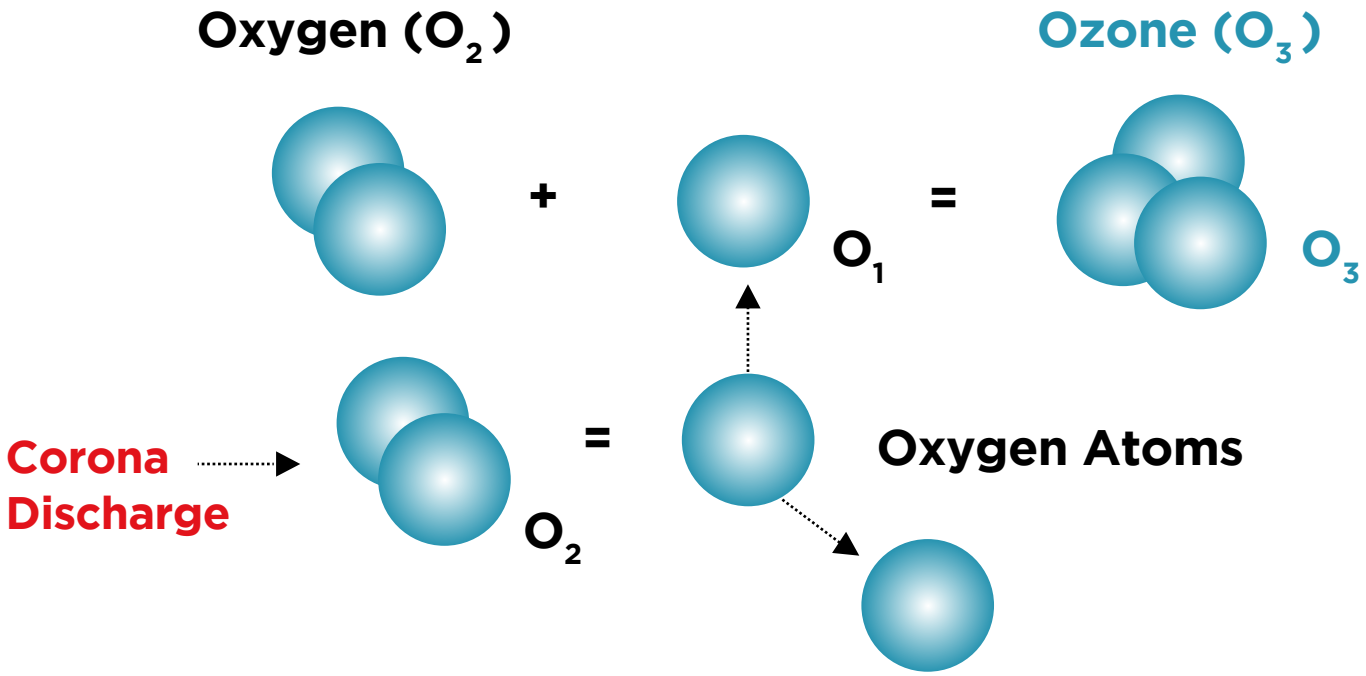
- Once the cycle begins, the upper progress bar on the App shows the current status of the ozone production process of the cycle
- The middle bar shows the destruction process
- The lower bar shows the overall progress of the total cycle
- The emergency stop button can be pressed at any time during the cycle. The ozone sensor will also perform a level check here and run a destruction process accordingly.

When the full cycle is completed, including the removal of the ozone, second siren will sound to signal that the operation is completed.

When the cycle finishes, the ozone sensor will detect the level of ozone in the air. If the levels are higher than recommended health and safety levels (0.08ppm) then the destruction process will run until the level is reduced to an acceptable measurement.

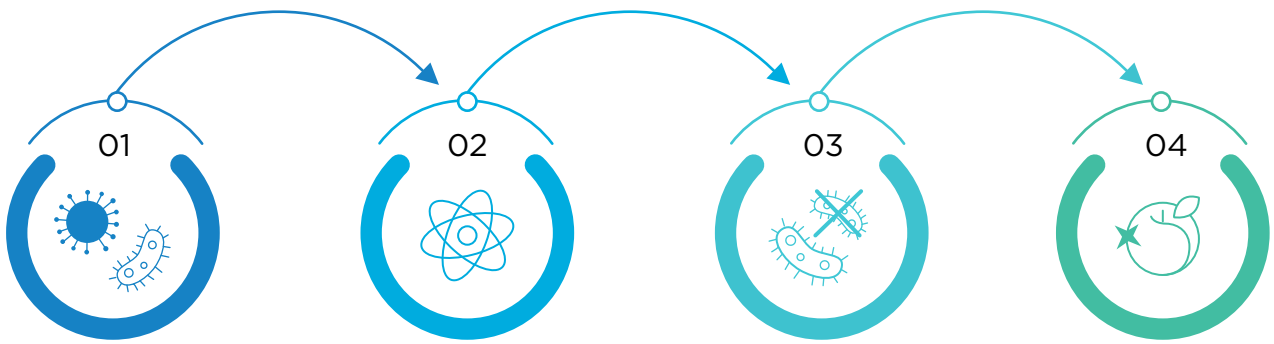
Ozone - A natural, powerful sanitisation solution

- Naturally occurring gas formed from oxygen
- Unstable nature with short half-life allows powerful oxidising and disinfecting qualities
- Hazardous at high concentrations, but distinctive smell allows easy natural detection
- Established biocidal application covered by EU Biocidal Products Regulations



How Ozone work?

- Effective against odours, fungi, bacteria and viruses
- No chemical residues, allowing quick re-use of treated areas
- Complimentary to existing cleaning regime
- Plug and Play system is very simple to use and no fuel, detergents or other chemicals required
- Gaseous treatment penetrates areas which would be difficult to physically clean



BACTERIA

The air in which oxygen is dissolved carries many organic elements such as viruses, bacteria, fungi and allergens

OZONE

Ozone is a very unstable moleculte and rapidly decomposes to release oxygen atoms

OXIDATION

This single oxygen atom is a powerful oxidising agent that reacts with bad odours, fungus, bacteria and viruses

SANITISATION

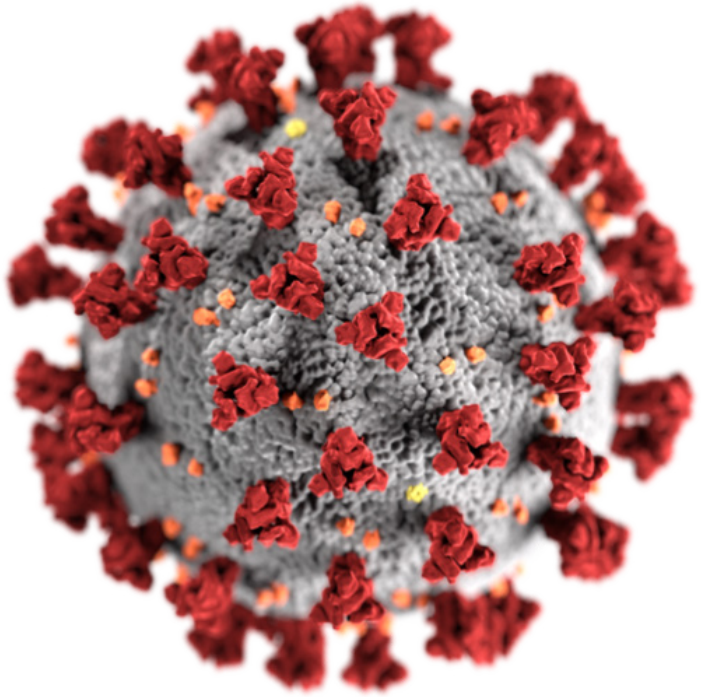
In this way the air is quickly sanitised, leaving the treated area free to be used as normal

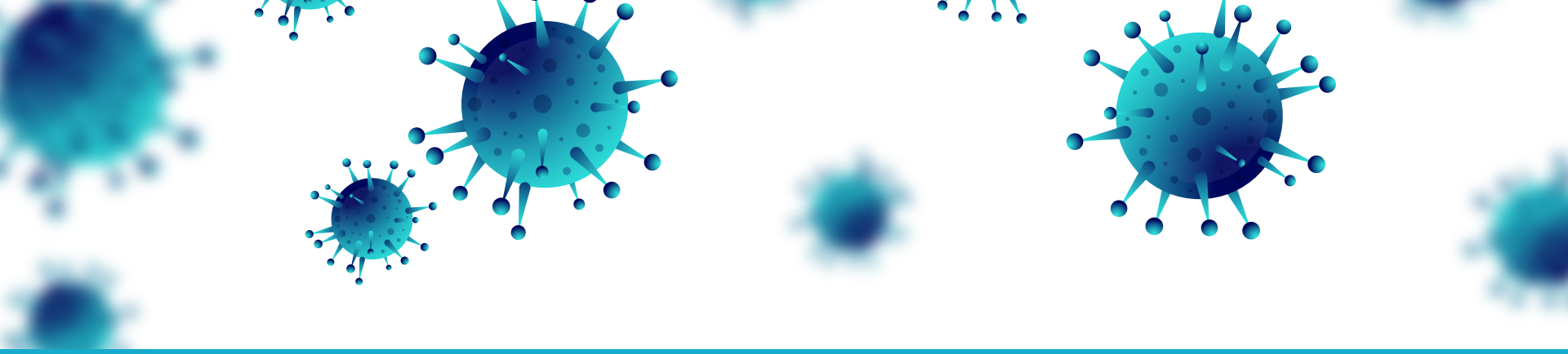
How it Deactivates Viruses

- The mechanism of action of ozone on viruses is not that of destruction, but of an inactivation; the action of ozone consists of an oxidation and inactivation of the receptors that specific viruses use when linking with the cell wall under attack.

- This blocks the viral reproduction mechanism in its' first phase: cellular invasion.

- Scientific Studies on the effectiveness of ozone against viruses have shown that the treatment of environments of 65m^3 at room temperature (20°C) and humidity (40% RH) with small gaseous ozone generators for an hour led to 99,9% reduction in viruses including Influenza viruses (N3N2), Murine Coronavirus (MCV), Poliovirus, Rhinovirus type 1A and 14, Yellow Fever Virus , Herpes Simplex Virus, Adenovirus Type 3 and 11, and Norovirus.





Verification of Efficacy on Viruses

- **Development of a Practical Method for Using Ozone Gas as a Virus Decontaminating Agent:**
  https://www.researchgate.net/publication/240537946_Development_of_a_Practical_Method_for_ Using_ Ozone_Gas_as_a_Virus_Decontaminating_Agent

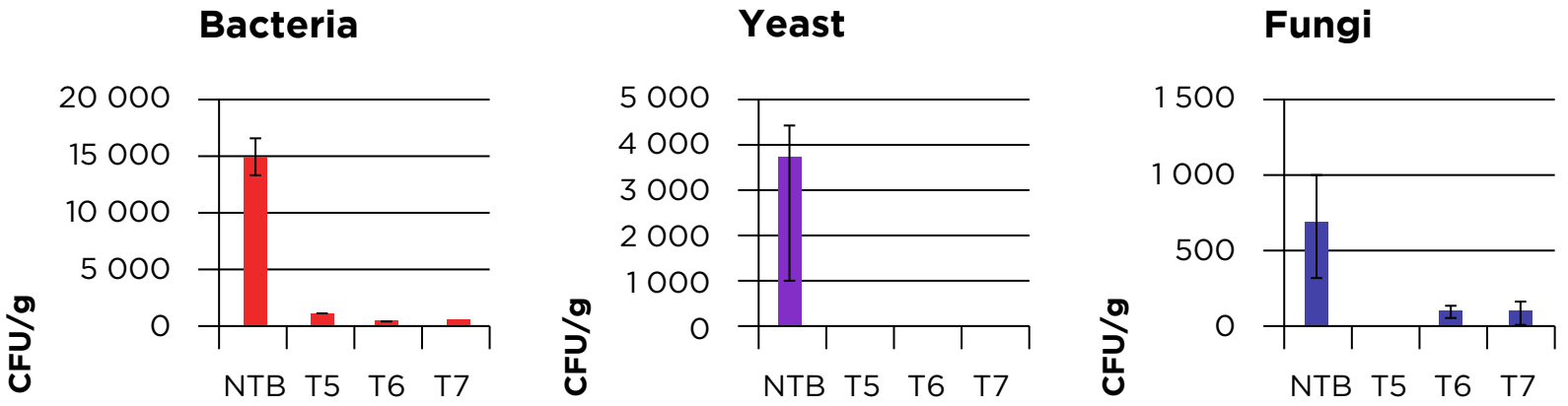
- **Inactivation of surface viruses by gaseous ozone:**
  https://www.ncbi.nlm.nih.gov/pubmed/18561570

- **Inactivation of surface viruses by gaseous:**
  https://www.researchgate.net/publication/5294292_Inactivation_of_surface_viruses_by_gaseous_Ozone

- **Inactivation of Norovirus by ozone gas in conditions relevant to healthcare:**
  https://www.researchgate.net/publication/6455782_Inactivation_of_Norovirus_by_ozone_gas_in_ conditions_relevant_to_healthcare

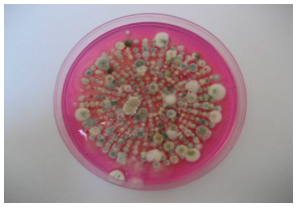
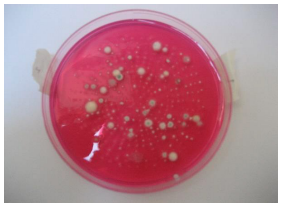
Bacterial Load Reduction

NT: non treated | **T**: treated



The effectiveness of ozone for sanitisation of agents of virological nature can only be achieved by the application of specific protocols depending on the capacity of production of the units used, the size and nature of the area treated.

REF: Development of a Practical Method for Using Ozone Gas as a Virus Decontaminating Agent James B. Hudsona; Manju Sharmaa; Selvarani Vimalanathana a Viroforce Systems Inc., Laboratory, Vancouver, Canada

48 HOUR TREATMENT (2000m^3 Room)	 **27/04/2012** Sampling Before Treatment	 **09/05/2013** Results After Treatment
E. Coli - Count on Surface and Tools	23 CFU/cm^2	<1
Coliform Total - Technique of Sampling with Swab	1,2 X 10^3 CFU/cm^2	<1
Mould & Yeast Count - Petrifilm Method	3,8 X 10^3 CFU/cm^2	<1
Total Bacterial Load - Technique of Sampling with Swab	1,5 X 10^4 CFU/cm^2	200

Utilisation of ozone is not an exact science as there are a range of variables that can impact upon both ozone production and its oxidisation potential. Ozone production curves can only be accurately assessed in an empty and clean environment under controlled ambient conditions. Whilst production curves display the productive capacity of an ozone generator and allow for like-for-like comparisons, they cannot be uniformly applied to real life situations.

The following is a brief guide when choosing the location of the Ozone Cabinet as this can have an impact upon ozone production and its ability to oxidise.

Temperature

Low temperature affects ozone in two ways.

1. It will take less time to produce ozone and longer for ozone to revert back into oxygen.

2. Very low temperatures can impede the efficacy of ozone's oxidation potential and therefore its biocidal action.

High temperatures will assist oxidation and biocidal effects: it will take longer to achieve high ozone levels at a higher temperature, but ozone will be more effective.

When using the equipment, the suggested optimum ambient temperature is 20°C (usual room temperature).

Relative Humidity

Low relative humidity (below 50%) can have a detrimental effect to the effectiveness of ozone as a biocide. Very high humidity (95%+) can cause the ozone generating cell to produce nitrous oxide which will shorten the lifespan of the ozone electrode.

The suggested optimum R-H range is between 55-90%

Density and characterisation of the load

The nature of the materials to be treated is an important factor. Dense, porous and textured materials will use up more ozone than smooth non-porous materials.

Lay or hang the garments keeping a minimum distance of 5cm between each of them in order for all items to be exposed to the ozone flow.

Technical Specifications

The Ozone Cabinet is a system featuring highly advanced technology for the purposes of odour removal and sanitisation.

The Ozone Cabinet is manufactured using state-of-the-art ozone production cells, characterised by high reliability and production capacity. An advanced ozone deactivation process ensures the safest possible operation.

Air-Flow Rate	450m³/hr (generation) / 850m³/hr (destruction)
Ozone Output	10g/hr = 10 ,000 mg/hr
Operation	Via touch screen human machine interface (HMI) Fully automated ozone production & destruction cycles
Ozone Cycle Time	Pre-set cycle times dependant upon the type of item being processed and level of treatment required. Typical times from 15-30 minutes including Ozone destruction
Display	LCD touch screen
Door Magnet	24V DC. Holding Force 600 lbs (272 kg)
Safety	Restricted access to the service menus (PIN required) Touch screen indicates treatment cycle time remaining Inbuilt diagnostics and safety warning systems Door open cut out Battery backup system
Dimensions	1100 x 700 x 2000 mm
Operating Conditions	Indoor use ONLY Temperature: -5°C to 40°C Relative Humidity: maximum 95%
Certification	CE approved

The manufacturer has a policy of continuous product improvement and reserves the right to modify or change this specification at any time without notice.

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