

FUTURE PROOFING AIR QUALITY VIRAL, BACTERIAL & MOLD STERILISATION



MICROBE
MARINE

PROTECTING LIFE THROUGH SCIENCE



OUR UNIQUE TECHNOLOGY

The origins of *Quarantine* date back to the 14th century, in an effort to protect coastal cities from plague epidemics. It was less understood that over time oxygen with sunlight is a natural sanitiser of bacteria, viruses and odours.

Our unique product speeds up this process.

Generating a proactive sanitizing molecule that penetrates the crevasses of a room killing all bacteria and viruses on **surfaces and in the air**, within seconds 24/7.

No other product has these dynamic real life references across operating theatres and CoVid quarantine centres globally only structured lab test.



HOW DOES THE OXYGEN CLUSTER PROCESS WORK?

Oxygen molecules receive additional electrons, thus magnetising them to form Clusters. These clusters are long range, less erratic and do not create toxic or carcinogenic bi-products like other systems.



These clusters being magnetic are attractive to gases to break them down or discharge the electrons onto viruses, bacteria and spores on contact to breakdown their cell walls.

FITTING THE UNIT

AQMC technology is a straightforward installation in the main HVAC systems to disinfect all areas including highly populated areas and removing smells from polluted zones such as garbage rooms.

AQMC systems work 24 hours a day, 7 days a week, year around guaranteeing performance and providing the highest sense of safety and security for you and the crew



Kitchen exhaust unit



PROTECTION CAPABILITIES



Noro Virus

Has no vaccine and hand sanitiser is ineffective!

The only protection is left to food handlers to wash their hands and wipe down surfaces periodically. While our technology continuously sanitises surfaces 24/7. Including clothing, equipment and people.



Fungus / Molds

Molds can develop beneath surfaces.

Our clusters can travel deep into fabrics and soft furnishing to kill and deodorising these molds while killing airborne spores which may be blown to other areas or into ductwork. Furthermore molds can be foods for insects.

Transmittable diseases in confined spaces

Close quarters living/working increases infection opportunities.

Our technology continuously loads the air to attack contagions while remaining safe for people and operations.

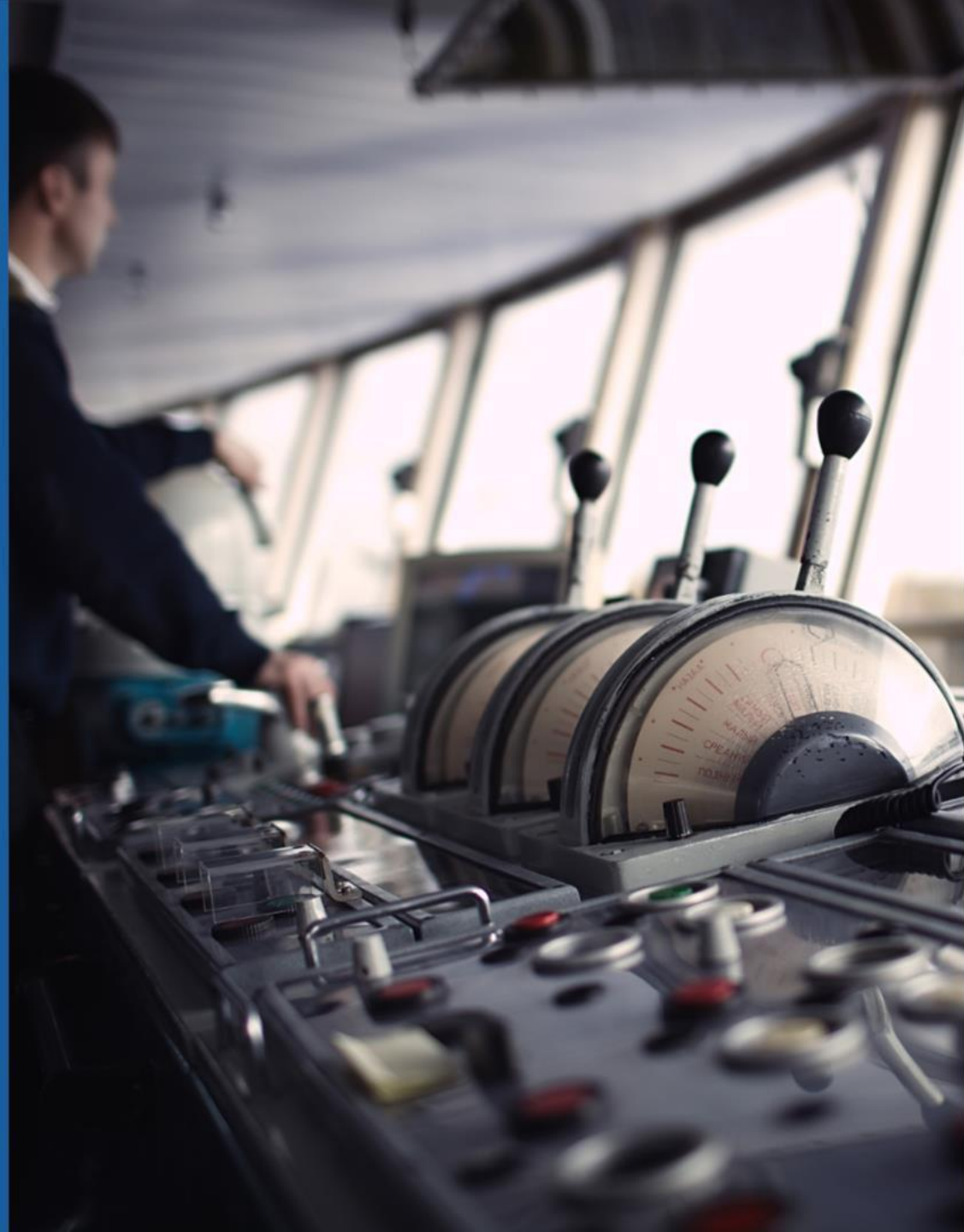


VOCs / Gases / Odors

We break down Industrial and bacterial gases.

Our system breaks down emissions from chemicals, as well as the route cause of bacterial smells





VIRUSES ARE SPREAD BY TOUCHING SURFACES

According to Microbiologists each contaminated touch will then be passed on at least 7 times.

Viruses, such as Noro and Covid on all surfaces are killed 24/7 including all surfaces, from metals to plastics and fabrics including bedding and clothing without chemicals.

In **2001** our units were installed to kill and protect against **SARS-CoV-1** in Government Depts, Hospitals and Quarantine Centres across Asia and again in **2019** this was replicated for the UAE with **SARS-CoV-2 (CoVid-19)**.

Proving to protect against future mutations

A 'FRESH' AIR SUPPLY DOES NOT STOP THE CONTAGION

The embarkation of new crew, guests, pilots, agents, contractors, equipment and supplies is continuously updating and compromising a safe haven (bubble).

'Fresh, filtered and clean' air will not kill virus, bacteria and fungal spores brought on board.

This is why to maintain a safe vessel you need an automated instantaneous in-depth air and surface disinfection system.



Galley Exhaust Systems

- Enhanced performance and emissions while reducing complexities of galley exhaust
- Improved odour removing capabilities
- Significant reductions on maintenance, parts and operational costs

Offices & Control Rooms

- Overarching odour and disinfection control
- Creates a crisp 'freshness' in the air
- Fabrics, carpets and hard surfaces are all disinfected and sanitised without harsh potentially damaging chemicals
- Decontaminates new crew

Supply Room / Storage

- Kills mold and mildew
- Smells are combated at origin and at a chemical level
- This principal delays ripening and decay of food
- Reduces potential issues from dead air

Sleeping Quarters

- Stuffiness in cabins feel more open
- No 'Cover Up' aromatics to mask odours
- Softer room fittings including bedspreads, lounges and carpets are disinfected continuously
- Décor stays deodorised

Accommodation Block

- Removal of invading chemicals & gases
- Mustiness is eliminated
- Inappropriate smells are no longer potential complaints
- Neutralises toxic gas from production process such as methane, propane, hydrogen sulphide

Toilets (inc Sewage Treatment Plant)

- Disinfection of bulkheads, decks surfaces and hard to reach places
- Unpleasant bathroom smells are eliminated
- 24/7 sanitised bathroom surfaces
- Cleaning chemicals use consciously
- Reduces spread of sickness via handles, taps, buttons

VARIOUS SATISFIED CLIENTS



AIRLINE APPROVED

- USED ACROSS SKY CARGO AND STAFF LOCATIONS

AIRLINES



Date : 8th July 2020

To Whom It May Concern

Dear Sir/Madam,

The Emirates Group has been using AQMC-Bio odour control and air sterilization equipment since 2008.

Bio-Oxygen Middle East has successfully provided Air sterilization/odor control for kitchen exhaust, food outlets, atrium level & Costa cafe in our Emirates Headquarters Group in Dubai. Following on from the success of this, we specify the AQMC-Bio equipment into any new facilities in the Emirates Group.

Bio-Oxygen Middle East has also completed work on our iconic development JW Marriott Marquis Dubai in 2011 in the treatment of Kitchen exhaust and indoor air quality.

Our Emirates Sky Cargo facility is also treated by the AQMC-Bio system. The equipment has even successfully treated areas of mold.

Our Emirates Flight Training Academy is also treated by AQMC-Bio Systems for Air Sterilization and Odor. In addition to Our Emirates Aviation University.

Most recently due to air sterilization concerns, we have added the treatment to our offices, clinics & staff travel areas with excellent results.

We are more than satisfied with the AQMC-Bio units we have installed and are happy to recommend the equipment to other companies for similar applications since we regard the technology as an essential factor in controlling odour and air Sterilization.

Yours sincerely,

Janaka Wijayawardana
VP - Facilities Operations and Projects



GOVERNMENT ENDORSED AGAIN IN 2020

- TESTING WAS DONE IN WARDS WITH CRITICALLY ILL *COVID19* PATIENTS



Facility and services department

May 28, 2020

To Whom It May Concern

BIO-OXYGEN STERILIZATION UNITS

This is to confirm that ICS Group LLC and Air Quality Management Control have successfully installed the Bio-Oxygen Sterilization system in multiple Covid-19 Quarantine facilities across the UAE, on behalf of the Ministry of Health and Prevention during the height of the coronavirus global pandemic.

We can also confirm that these installations were carried out in the ventilation systems in order to sterilize the air and all surfaces within our quarantine facilities. This was done to eliminate viruses, bacteria and other pathogens, and prevent cross infections, whilst protecting our frontline healthcare workers and staff in these facilities.

The MOHAP has been fully satisfied with the performance of the BioOxygen system, for the sterilization and improvement of indoor air quality in our facilities.

Yours Sincerely,,

Facility and services department

Waheed Almulla



TESTED AND COVID EFFECTIVE

- REAL LIFE SITUATION ON BOARD MEGA YACHT

Captain's Note

We had a crew member join that was double **Pfizer** vaccinated, who unknowing had contracted 'covid'. It wasn't until day 5 when routine tests were done, that he diagnosed as 'positive'.

Over the five days, living in confined spaces, the virus was not passed on to any of the 12-man crew, some of which were unvaccinated, however, he was able to pass it on to one person who he shared a car with for half an hour during that same period.



"I am extremely happy and firmly believe that the lack of covid contagion on my yacht is due to having and oxygen cluster unit operating in our AC System" - Captain SP

WHAT WE ARE NOT

UV light: Kills viruses as air passes over the clean lamp. Effective wave lengths/ energy/ power that kill viruses will burn humans too. These bulbs often contain mercury which can produce ozone (O₃) at true effective power ranges. Short range meaning multiple units must be installed at ducting exits.

Hydroxyls: Whilst these act in a similar concept to OCP they emit OH and free radicals which accelerates oxidation and the aging process of materials and people. OCP produces clouds of electrons which are used in hospitals to extinguish free radicals.

Ionisation Bi Polar: These can produce ozone when powered correctly. They promote CO₂ build up and only kill air borne viruses which pass through the ionizer meaning surfaces like walls, handles, pillows need chemicals cleaning.

100% Fresh Air: Achieves very little other than supplying outside air (subject to quality). In addition it requires a further 50% in energy and chilling capacity.



FUTURE PROOFING FOR ONGOING PROTECTION



- Neutralises over 240 harmful gases (inc H₂S, Ethane, carbon monoxide, ammonia, PCB, formaldehyde)
- Removes general odours
- Kills virus (inc Norovirus, SARS-CoV-1 & 2)
- Kills bacteria (MRSA, Staph. Aureus)
- Prolongs shelf life of fresh foods
- Reduces CAPEX cost (inc chilling, labour, chemicals)
- No downtime affecting operations

The Oxygen cluster unit comes with a manufacturer's guarantee on performance and warranty.

This is the natural way to safely eliminate odors, bacteria and viruses, purify the air we breathe and sterilize environments we live in now and in the future.



MICROBE MARINE

Our team has over 50 years experience specific to the Marine Industry, as well as over 50 years in general Microbiology and Chemical Engineering.

We operate globally with an established network of marine professionals in Dubai, Singapore, Istanbul, Brazil, UK and China, specialising in Marine hazardous material surveying, Ballast water system inspection testing, we also perform Water safety plan audits and Legionella prevention assessments on ships.

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