PLANUM
TECHNOLOGY
MADE IN ITALY

CE

-STERILIZING
-DISINFECTING
-VIRUS NEUTRALIZING
- AIR AND WATER PURIFYING

DUAL OZONE/UVC TECHNOLOGY

CERTIFIED PATENT DEVICE

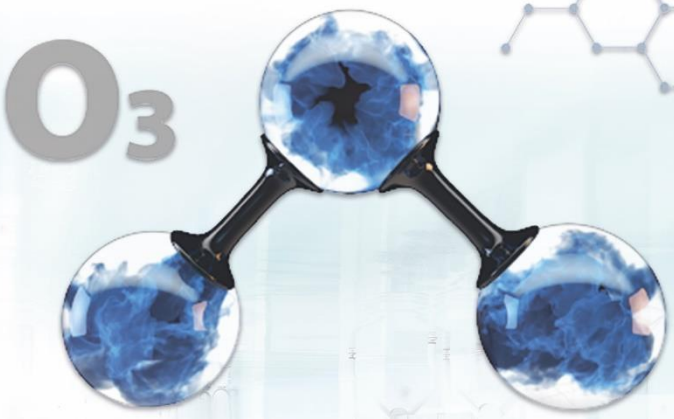
OZOVID SANITY PRO

OZOVID IS THE ONLY LOW PRICE SYSTEM THAT CAN DESTROY UP TO 99% OF ALL VIRUSES, FUNGUS AND BACTERIA

WORLD MOST PERFORMING VIRUS KILLING SYSTEM

RECOMMENDED TTO:

- -HOSPITALS AND CLINICS
- -CIVIL PROTECTION HEADQUARTERS
- -EMERGENCY AND OPERATIONAL VEHICLES
- -GOVERNMENT DEPARTMENTS
- -POLICE STATIONS
- -RESTAURANTS AND BARS
- -MOVIE THEATRES
- -RETIREMENT HOUSES
- -PENITENTARIES
- -OFFICE BUILDINGS
- -COMMERCIAL CENTERS
- -DISTRIBUTION CHAINS
- -COMMERCIAL ACTIVITIES
- -HOTELS / CASINO



Ministero della Salute

OZONE HAS BEEN RECOGNIZED BY THE MINISTRY OF HEALTH
(PROTOCOL N. 24482 OF JULY 31, 1996) NATURAL PROTECTION
FOR THE STERILIZATION OF ENVIRONMENTS CONTAMINATED BY BACTERIA,
VIRUS, SPORE ETC. AND INFESTED WITH MITES, INSECTS, ETC.

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Planum technology was founded by Ing. Michele Sibillo in 2017 whose idea was to create and develope complex projects in different areas, such as main industrial contractors, private or chain store and mass distribution companies.

The R&D department engineers have a wide range of technical skills starting from:
electrical, software programming, chemical, civil applications, industrial design, mechanic and lighting

OUR FOCUS IS TECHNOLOGY & INNOVATION

Our main goal is creating new products for specific fields: phototherapy, hydroponics, food, controlling systems, LEDonly lighting solutions for domestic and industrial use, etc.

Pushed by the latest pandemic events, we focused our research on technological safety systems for environmental sterilization and sanitization.

That's how the OZOVID project was born

OZOVID IS A DUAL TECHNOLOGY SYSTEM WITH OZONE AND UVC (Ultraviolet C Rays) PRODUCTION, THEY CAN DESTROY UP TO 99,9% OF EXITING VIRUSES AND BACTERIAS

Ozovid cleans, disinfects, purifies, it also sterilizes air and water

Sanitization and sterilization device

Due to the actual emergency, Planum Technology built a copyprotected patent machine to ensure a combined system of ozone molecules and UVC radiation. The dual action process guarantees 120 grams/hour of Ozone that only few industrial, heavier and way more expansive machines provide. Plus Ozovid does it with a perfect electrical stability in order not to produce dangerous gasses like the letal nitrogen dioxide.

OZONE's capable of effective antimycotic and bactericidal action.
Unlike conventional disinfection systems, gases reach all surfaces, even the most hidden ones, providing a long-lasting sanitization effect in the environment.

UVC radiations are used to decontaminate surgical equipment, sterilize either drinkable or polluted water, also air sanification is included.

- Pathogen elimination table

Pathogen	Minutes
Streptococcus Lactis	0'14"
Streptococcus. Aureus	0'10"
Sarcina Lutea	0'44"
Escherichia coli	1'00"
Staphilococcus	10'00"
Pyogenes Aureus	10'00"
Vibrio Cholerae	20'00"
Salmonella Typi	3'00"
Paramecium	5'30"
Saccharomyces elipsoideus	0'22"
Saccharomices sp.	0'29"
Lievito per pane	0'14"
Morbo del Legionario	19'00"
Microbacterio Paratubercolosis	20'00"
Virus Ebola	20'00"
Mosaico del tabacco	12'15

120 GR/H

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The system is a unique safety personal device for environmental and instrumental sanitation, it's reaches up to 99,9% virus or bacteria elimination.

WEIGHT	5KG
PRODUCTION OF OZONE	1-120gr/h
LENGHT OF UVC WAVES	257-310 nm
DIMENSION	400*300*130 mm
OUTPUT AIR FLOW RATE	10-300 m^3/h
INPUT VOLTAGE	230vac ± 10% , 50HZ/60HZ – 12 VDC
CURRENT CONSUMPTION	<1600 MA (230VAC) - <33A (12VDC)
POWER CONSUMPTION	<400W

ANTI MICROBIAL PROPERTIES OF OZONE

While in third world countries Typhoid Salmonella and Cholera vibrions are typical bacteria transmitted by water, in developed countries water can be a vehicle for Salmonella Typhimurium, for some types of vibrions such as Vibrio Vulnificus, for Hydrophilus Aeromonas (also present in alphine waters), and Legonella Pneumophila(present in volcanic waters ranging from 45° - 50° C and in the air conditioning systems). Cyanobacteria are relatively frequent on surface water, they produce neurotoxins etc. not to mention dozens of other bacteria, virus and protozoa that often combine with each other in "biofilm" which in turn protect the micro-organisms that make them up. Disinfection means purification of the vehicle until it is unable to cause infectious diseases for humans, animals and plants that come into contact with the vehicle (especially water). On several germs, Ozone is one of the most effective disinfectants acting in concentrations of "ppm" fractions and relatively quickly. Because of its high oxidizing potential, Ozone oxidizes the components of the bacterial cell wall by penetrating into the cell. Once in, it oxidizes all the essential components (enzymes, proteins, DNA, RNA). During this process the membrane is damaged and the cell dies. (Table 1°) The reports highlight the difficulties that can be encountered when it comes to eliminate common vegetative germs, such as Staphylococcus Aureus normally more sensitive than many other germs.

Table 1°: INACTIVATION OF 99,9% BACTERIAS, AT 20° - 24˚C, THANKS TO OZONE

Germ	Minutes	Ozone (mg/L)
Escherichia Coli	0’16’’ – 2’07’’	0,065 – 0,51
Legionella Pneumophila	8’00’’	0,32 – 0,47
Salmonella Typhimurium	2’07’’	0,23 – 0,26
Mycobacterium Fortuitum	2’07’’	0,23 – 0,26

During recent tests, carried out by exposing objects infected with methicillin-resistant Staphylococcus Aureus (MRSA) to ozone insufflation, it has been noted that the germs were killed after 2 hours of exposure to 0.1 ppm of gas.

In hospital rooms, where an ozone machine had been installed, in front of MRSA grown in “Brain heart infusion broth” or placed on a filter paper or a slide, the concentrations result from active to partially active depending on the distance of the contaminated germs from the point of insufflation and from the time elapsed since the entry of the reported ozone concentration.

To prevent wide contaminations by methicillin-resistant staphylococci in hospital environments, good results happen when, for example, surfaces are cleaned with polyphenols detergents and the environment get exposed, in different time spans, with a concentrations of, at least, 0.5 ppm of gas.

The ozone virus killing effect happen mostly with the presence of organic substances (Tables 2˚ and 3˚).

Table 2°: INACTIVATION OF VIRUS AT 20° - 24°C

Hydrophilic Virus	Reduction (%)	Minutes	Ozone (mg/L)
Poliovirus type 1	99,7	0’16’’ - 2’07’’	0,23 – 0,26
Poliovirus type 1	95	0’50’’ – 0’75’’	0,32 – 0,51
Coxsackie A9	98	0’16’’	0,035 – 0,14

Tabella 3˚: VARIABLE INACTIVATION OF VIRUS THANKS TO OZONE AT 20˚C

Hydrophilic Virus	Reduction (%)	Minutes	Ozone (mg/L)
Poliovirus type 1	75 – 99	10‘00’’	0,2
Enteric Virus	98	98’ 00’’	4,1
Lipophilic Virus			
Human Rotavirus	90	10‘00’’	0,31

Spores, fungi and protozoan killing properties

In addition to the bactericidal and virucid activity of ozone, a spores, fungi and protozoan killing properties are provided.

As a spore killer, the ozone rised a lot of scientific interest. Since the early 80s it was recognized as a safe usable gas, than approved as a water disinfectant added in bottles, used as liquid for poultry freezing, egg storage and all processes where spores elimination is essential.

In those years researchers prooved that the gas was also effective on sporigen basins such as *B. Cereus*, *B. Megaterium* and *C.Clostridi*.

Regarding the ozone's protozoan effect, we must keep into consideratin that Europe's most known diseases, due to these parasites, are: The *Amoebiasis*, The *Toxoplasmosis*, *Malaria*.

About the *Entamoeba histolytica* the ozone action is not that much effective, even though the active gas percentages remains pretty low, it is also relatively resistant to chlorine, as demonstrated during some epidemics. There's been a demostration during the last Chicago epidemic, where the water was treated also with chlorine not in an efficient way.

In these days ozone's specific activity over the amoeba is very much requested since the *Pneumonia Nosocomial* from *Legionella Paeamophila*, is a germ that is usually developed in hot water.

While intestinal infections, due to water contaminated by *Giardia,* are well known, the ones caused by *Cryptosporidium* are not as much even if in addition to individual cases of gastroenteritis infections, it recently has caused dozens of epidemics.

Both *Giardia* and *Cryptosporidium* live in all the rivers around the world. Since common filtrations cannot guarantee complete elimination of that protozoa, we must keep in mind that the ozone is active against *Cryptosporidium* at very low concentrations, while *Giardia* is sensitive to an even lower ozone concentrations.

INDICATIVE TABLE OF MINIMUM TIME PERIOD REQUIRED FOR DISTRIBUTION/DESTRUCTION OF MICRO-ORGANISMS BY OZONE STERILISATION

BACTERIA		**SPORES**	
Strep. Lactis	0'14''	Pencilim Roqueforti	0'45''
Strep. Hemolyticus (Alpha Type)	0'09''	Pencilim Expansum	0'36''
Staph. Aures	0'10''	Pencilim Digitarum	2'26''
Staph. Albus	0'10''	Aspergillus Glaucus	2'26''
Micrococcus Sphaeroides	0'25''	Aspergillus Flavus	2'45''
Sarcina Lutea	0'44''	Aspergillus Niger	9'10''
Pseudonomas Fluorescens	0'10''	Rhizopus Nigricans	6'06''
Listeria Monocitogenes	0'11''	Mucor Rocemosus (A)	0'58''
Proteus Vulgaris	0'13''	Mucor Rocemosus (B)	0'58''
Serraia Marcenses	0'10''	Oospora Lactis	0'18''
Bacillus Subtilis	0'18''	**ENZYMES**	
Bacillus Subtilis Spores	0'36''	Saccharomyces Elipsoideus	0'22''
Spirillum rubrum	0'10''	Saccharomyces SP.	0'29''
Escherichia Coli	1'00''	Saccharomyces Cerevisiae	0'22''

Salmonella Typi	3'00	Beer yeast	0'11''
Shigella Dissenteryae	1'00''	Yeast	0'14''
Brucella Albortus	1'00''	PROTOZOA	
Staphilococcus	10'00''	Paramecium	5'30''
Pyogenes aureus	10'00''	Nemotote eggs	0'36''
Vibrio cholerae	20'00''	**ALGAE**	0'36''
VIRUS			
Bacteriphage (E.Co1i)	0'10''		
Tobacco Mosaic Virus	12'15''		
Flu	0'10''		
Legionellosis	19'		
Ebola	20'		
Virus Sinci Nuale	21'		

*Datas above refer to analyses made by several laboratories.

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